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COMMUNITIES OVERVIEW & SCRUTINY PANEL

MONDAY, 25TH OCTOBER, 2021

At 7.00 pm

by

GREY ROOM - YORK HOUSE, ON RBWM YOUTUBE

SUPPLEMENTARY AGENDA

PART I

ITEM	SUBJECT	PAGE NO
4.	CALL IN - BATTLEMEAD COMMON • After the Chair opens the meeting the members who asked for the decision to be called in will be asked to explain their reasons for the request and what they feel should be reviewed; • On matters of particular relevance to a particular ward, ward division Members who are not signatories to a call-in have the opportunity to make comments on the call-in at the meeting, such speeches not to exceed five minutes each. Ward Members will take no further part in the discussion or vote. Ward Members must register their request to speak by contacting the Head of Governance by 12 noon on the day prior to the relevant hearing; • The relevant Cabinet Member for the portfolio (or holders if more than one is relevant) will then be invited to make any comments; • The relevant Director or his representative will advise the Panel on the background and context of the decision and its importance to achieving Service priorities; • Panel Members will ask questions of Members and officers in	3 - 186

attendance;

- The Cabinet Member(s) will be invited to make any final comments on the matter before the Panel votes on a decision.

*Please note that non-Panel Members will not have an opportunity to speak at the Panel meeting. Non-Panel Members can submit questions in advance to which a written response will be published. The deadline for submission of such questions is 5pm Thursday 21st October. The Chairman has agreed this approach using his discretion as set out in the constitution.

NOTES:
1. In the event of query contact RBWM Landscape Officer

KEY

- PERMITTED FOOTPATHS (INDICATIVE LOCATION)
- PERMITTED FOOTPATHS (INDICATIVE LOCATION) DOGS ON LEAD
- FENCES
- MG — MAINTENANCE ACCESS GATE 12 FEET WIDE
- PAG — PEDESTRIAN ACCESS GATE SELFCLOSING
- EXISTING EDGE OF WATER variable according to season
- NORTH MAIDENHEAD BUND ENVIRONMENT AGENCY
- MB BOUNDARY STONE
- ROUTE A CAUSEWAY ROUTE

WHITE BROOK COTTAGE
WHITE BROOK
WIDBROOK COMMON
A4094
SUTTON ROAD
PEDESTRIAN GATE
P/R FENCE
PEDESTRIAN PATH
LOWER COOKHAM ROAD
S/P FENCE
NORTH FIELD
P/R FENCE; WITH STOCK NETTING
INFILL NATIVE HEDGE PLANTING 2021
RETAIN EXISTING P/R FENCE
P/W DOG PROOF FENCE
WEST FIELD
DOG OFF LEADS IN FIELD
P/W DOG PROOF FENCE WITH PEDESTRIAN GATE FOR MAINTENANCE
P/W DOG PROOF FENCE
P/R DOGS ON LEAD BEYOND THIS POINT
MB BOUNDARY STONE & BERM
ZONE OF PROPOSED WETLAND CREATION
LINE OF EXISTING EDGE OF WATER
EAST FIELD
APPROXIMATE CHANGE OF GROUND LEVEL
NORTH MAIDENHEAD BUND (ENVIRONMENT AGENCY)
RETAIN EXISTING CHAIN LINK BOUNDARY FENCE
RETAIN EXISTING
EA BUND
WHITE BROOK PARK
MAIDENHEAD COURT
SCREEN PLANTING ALONG THE FENCE ON BOTH SIDES OF THE CAUSEWAY
CAUSEWAY PATH
CAUSEWAY OPEN APRIL TILL EARLY OCTOBER MAIDENHEAD BOUNDARY WALK
ANNUAL MAIDENHEAD BOUNDARY WALK
FENCING RETURN TILL HEDGING
ENTRANCE GATE TO ANNUAL MAIDENHEAD BOUNDARY WALK
TOWING PATH
RIVER THAMES
NATIVE HEDGE
ADDITIONAL INFILL NATIVE HEDGE PLANTING 2021
MAINTENANCE ACCESS GAT 12' WIDE

www.rbwm.gov.uk
Royal Borough of Windsor & Maidenhead
The Royal Borough of Windsor & Maidenhead
Town Hall
St. Ives Road
Maidenhead
Berkshire
SL6 1RF
Tel:01628 796482
Fax:01628 796738

Project: BATTLEMEAD COMMON

Title: MASTERPLAN OCT 2021

Rev	Amendments	Init	Date
J	Updated boundary walk route	AC	191021
I	Updated smaller car park	AC	200721
H	Causeway access route	AC	050521
G	Revised EA bund	AC	031120
F	Removed mown path N Field	AC	220920
E	East field fence and path added	AC	020920
D	Permitted paths added	AC	030720
C	Removed diagonal paths	AC	180919
B	Replaced bunds with bollards	AC	220819
A	Amended as per feedback from FoB	AC	240619

Date: 05.06.2019
Scale: 1:2000@A1
Drawn: AC
CAD: AC
Checked: AH
Drg No.: 201810-L-05
Rev.: J
Base Ref.: Y:\ARCVIEW\LEISURE\LANDSCAPE_Maidenhead\Bartle Mead Cookham

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Battlemead Common, Maidenhead, Berkshire

Wintering Bird Survey

For Royal Borough of Windsor and Maidenhead

March 2020

Project Number	0286.03
Client Reference	Royal Borough of Windsor and Maidenhead
Project/Site Name	Battlemead Common, Maidenhead
Report Title	Wintering Bird Survey

Version Number	Date	Author	Reviewer
001	30/03/2020	Ed Austin	Stephen Foot

Disclaimer

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Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a qualified legal professional should be sought.

1. Non-technical Summary

1.1.1. The Royal Borough of Windsor and Maidenhead (RBWM) are planning to apply for a change of use of Battlemead Common (hereafter referred to as "the site") from agricultural use to public open space. As part of these proposals, RBWM are planning to maintain and enhance the ecological value of the site. The site is located off Lower Cookham Road and lies to the north of Maidenhead in Berkshire. Austin Foot Ecology was commissioned by RBWM to undertake a wintering bird survey in order to gather baseline information on the passage and overwintering bird assemblage using the site and to determine any ecological constraints and opportunities associated with the proposals and this species group.

1.1.2. The survey recorded an overall assemblage of at least 60 species using the site, with many species regularly occurring and some being infrequent or only present in very low numbers. The assemblage was dominated by species that are common and widespread in Berkshire as well as nationally, with no evidence of any individual species being present in numbers that are significant at the regional or national level. However, the overall range of species plus varied habitats (providing conditions for different species groups) indicates the site is of value to wintering birds in the local area. Within the context of the site, the central brook corridor and associated wetland areas in the south-east of the site are likely of greatest value and ecological sensitivity. The woodland and marginal areas also provide conditions for a variety of species, with the open grasslands being typically of lower importance at present, but still of value to introduced and naturalised geese plus low numbers of other species.

1.1.3. In order to maintain (or increase) the wintering bird interest of the site, measures are recommended in terms of restricting access to some areas, particularly the causeway in the south-east and areas adjacent to the brook, whilst wintering bird species are present. Other measures including prohibiting or restricting access by dogs off the lead, maintaining fencing and path routes to create refuge areas free from disturbance and careful consideration of any required management works on site (e.g. works along the brook channel) are also recommended.

1.1.4. The project presents opportunities for enhancement and positive management to benefit wintering bird species (and overall biodiversity) such as:

- Managing the flooded pools in the south-east of the site (at least in part) to create a more stable pool or scrape.
- Managing the pond in the north-west of the site (within woodland) to maintain a mixture of open water and marginal vegetation habitats.
- Increasing reedbed habitat along the brook corridor.
- Planting or encouraging new sections of native hedgerow or scrub buffers (e.g. around woodlands).
- Managing areas of the grassland to create a more diverse meadow grassland with some structural diversity.
- Providing increased public information.

1.1.5. Further details of the above are contained within the main body of this report.

2. Introduction

2.1. Site and Project Description

2.1.1. Battlemead Common (hereafter referred to as "the site") is located to the east of Lower Cookham Road in the north of Maidenhead in Berkshire. The central grid reference is SU 9044 8388. The site is bordered to the east by the River Thames, to the west by Lower Cookham Road with pasture beyond, to the north by White Place Farm and to the south by commercial and residential development. The site covers an area of approximately 45ha comprising semi-improved grassland, woodland, wetland habitat and tall ruderal vegetation. The White Brook also passes through the centre of the site. The site boundary is shown in Figure 1.

2.1.2. The Royal Borough of Windsor and Maidenhead (RBWM) are applying for a change of use for the site from agricultural use to public open-space. Public access across the site is planned to provide access to the Thames Path to the east whilst maintaining and enhancing the existing biodiversity value of the site. A carpark for approximately 25 cars is to be constructed on the western boundary providing vehicular access from the adjacent Lower Cookham Road.

2.2. Legislation and Policy Background

2.2.1. All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird (note the nests and eggs of birds are also protected but this is not of direct relevance outside the breeding season).

2.2.2. The NERC Act 2006 reinforces the duty upon all public authorities, including planning authorities, to have regard for the conservation of biodiversity when discharging their duties. The species listed in accordance with Section 41 as priorities for conservation includes variety of bird species such as the dunnock (*Prunella modularis*) and song thrush (*Turdus philomelos*) among others.

2.2.3. The National Planning Policy Framework (NPPF) promotes minimising impacts on and providing net gains for biodiversity. The NPPF also provides guidance for local planning authorities (LPAs) by indicating that, if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or compensated for, then planning permission should be refused. Development whose primary objective is to conserve or enhance biodiversity should be supported, while opportunities to incorporate biodiversity improvements in and around developments should be encouraged.

2.2.4. The Royal Borough of Windsor and Maidenhead Local Plan establishes that (at a local level) planning applications will be expected to (among other things) demonstrate how they:

- Maintain, protect and enhance biodiversity including protected species
- Avoid impacts on habitats and species of principal importance, such as those listed under Section 41 of the NERC Act 2006
- Apply the mitigation hierarchy to avoid, mitigate or as a last resort compensate for any adverse biodiversity impacts.

- Identify areas where there is opportunity for biodiversity to be improved and, where appropriate, enable access to areas of wildlife importance.
- Avoid the loss of biodiversity

2.3. Aims of Study

2.3.1. Austin Foot Ecology was commissioned to undertake a wintering bird survey within the site in the 2019/2020 winter period (September 2019 to March 2020). The main aims of this report are to:

- Describe the methods used during the wintering bird survey.
- Present the factual results of the survey including data on bird species and numbers observed as well as an identification of any key areas around the site used by overwintering or passage bird species.
- Provide an assessment of the relative importance of the survey area to overwintering and/or passage birds.
- Set out the legislative protection afforded to passage or overwintering birds associated with the site.
- Present a preliminary assessment of any potential ecological opportunities or constraints relating to wintering birds associated with use of the site for public access.
- Provide initial recommendations on potential ecological enhancement and management measures (focussed on wintering birds) that could be incorporated into the layout and management of the site.

3. Method

3.1. Field Survey and Data Analysis

3.1.1. The wintering bird survey involved undertaking two visits to the Site per month within the period September 2019 to March 2020 inclusive. During each visit a full 'snap-shot' count of all birds present was made. Each count was made by an experienced surveyor slowly walking through the Site with the aid of binoculars (and telescope if required). The surveyor paused at regular intervals to scan areas of the Site, with as many stop points and vantage points as necessary used per visit to enable adequate coverage across the Site.

3.1.2. Each survey visit was completed in daylight hours with the timing varied to ensure that a timing bias did not occur. Locations and numbers of bird species were marked on a map of the Site. Only birds actively using the Site were counted; i.e. birds flying over were not included unless they were known to or likely to have originated within the Site, or if they were engaged in behaviour associated with the Site (e.g. foraging owls or raptors).

3.1.3. Dates and weather conditions during each survey visit are provided below.

Date and Survey Timing	Weather Conditions
03/09/19 11:30-13:30	Weather conditions were dry and partially cloudy (5/8 cloud cover) with a light breeze (Beaufort Scale F2) and warm temperatures ranging between 21°C-22°C.
16/09/19 08:30-09:50	Weather conditions were dry with clear skies (1/8 cloud cover) with calm conditions (Beaufort Scale F1) and an air temperature ranging between 11°C and 14°C.
09/10/19 10:30 – 12:35	Weather conditions were dry with bright spells (4/8 cloud cover), a moderate breeze (Beaufort Scale F3-F4) and an air temperature of 13°C.
23/10/19 09:35 – 11:40	Weather conditions were dry with largely overcast skies (7/8 cloud cover), calm air (Beaufort Scale F1) and air temperatures of 7°C.
05/11/19 07:15-09:30	Conditions were dry with partially cloudy skies (4/8 cloud cover) and calm conditions (Beaufort Scale F1) at the beginning of the survey becoming more overcast (7/8 cloud cover) with light drizzle at the survey end. Air temperatures ranged between 10°C and 11°C.
26/11/19 10:00 – 12:15	Conditions included occasional light rain showers with overcast skies (8/ cloud cover) and a light breeze (Beaufort Scale F2). Air temperature was around 12°C.
06/12/19 08:15-09:55	Weather conditions were dry with overcast skies (8/8 cloud cover) and a moderate breeze (Beaufort Scale F3-F4). A light drizzle started at the end of the survey. Air temperatures were cool ranging between 10°C and 12°C.

Date and Survey Timing	Weather Conditions
18/12/19 11:30 – 13:30	Conditions were dry with partially cloudy skies (3/8 cloud cover) and a light breeze (Beaufort Scale F2). Air temperatures ranged between 6°C and 8°C.
14/01/20 11:40 – 13:45	Weather conditions included light rain with overcast skies (8/8 cloud cover) and a moderate breeze (Beaufort Scale F3 to 4). Air temperatures were around 10°C.
27/01/20 08:45-10:25	Conditions were dry with partially cloudy skies (4/8 cloud cover) and calm conditions (Beaufort Scale F1). Air temperatures ranged between 7°C and 9°C.
05/02/20 13:45-15:25	Weather conditions were dry and partially cloudy (4/8-5/8 cloud cover) with calm conditions (Beaufort Scale F1) and temperatures ranging between 7°C-8°C.
24/02/20 11:15 – 13:20	Conditions included light rain with overcast skies (8/8 cloud cover) and a moderate breeze (Beaufort Scale F4). Air temperatures were around 10°C.
03/03/20 12:00-14:30	Weather conditions were dry and overcast (8/8 cloud cover) with a moderate breeze (Beaufort Scale F3) and air temperatures of 10°C-11°C.
22/03/20 13:15 -15:20	Conditions were dry with partially cloudy skies (3/8 cloud cover), a moderate breeze (BF3) and temperatures ranging between 11°C and 14°C.

3.1.4. Following the survey, data from all visits was compiled to produce a full species list for the survey period plus peak count per species (i.e. highest number recorded during any single survey visit). The data was also analysed to determine any patterns of distribution or key areas used by particular species.

3.2. Survey Limitations

3.2.1. All survey visits were completed during an appropriate time of year and suitable weather conditions. Access was available within the entire site boundary with areas not passable on foot (e.g. flooded areas) being possible to view from various vantage points. This meant the entire site could be visually and audibly surveyed. There were therefore no significant limitations to the survey methods set-out above.

3.3. Personnel

3.3.1. Ed Austin MCIEEM has been in continuous employment as a professional ecologist since 2004 and began his career in environmental consultancy in 2002. He has a particular focus on bird survey and assessment, having completed numerous projects across the UK. His experience

includes a variety of wintering and breeding bird surveys based on standard methods such as the Wetland Bird Survey (WeBS), Common Bird Census (CBC) and Breeding Bird Survey (BBS) as well as species-specific methods. Ed has also designed bespoke bird survey methods for specific project and assessment aims. He holds a Bird Identification Qualification (IDQ) issued by the Natural History Museum of London.

3.3.2. Stephen Foot MCIEEM has worked as a professional ecologist since 2005 and has holds Natural England licences to survey for great crested newts, hazel dormice, bats, barn owls, smooth snakes and sand lizards. During this time, he has undertaken an extensive number of extended Phase 1 habitat surveys throughout the UK surveying a diverse array of habitat types. He is also fully competent in assessing the potential of a site to support protected species and species of conservation importance. Stephen has completed a range of wintering and breeding bird surveys across the UK within a variety of habitat types.

3.4. Method and Report Qualification

3.4.1. All survey work and reporting was undertaken by experienced and qualified ecologists (see above), in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management (CIEEM).

3.4.2. All ecological surveys have an expected validity period owing to the tendency of the natural environment to change over time. This validity period varies from receptor to receptor and is also dependent on the degree of change in a site's management and overall landscape ecology.

3.4.3. This report does not purport to provide detailed, specialist legal advice. Where legislation is referenced, the reader should consult the original legal text, and/or the advice of a qualified environmental lawyer.

4. Results and Interpretation

4.1. Overview

4.1.1. This section sets out the results of the field surveys. The implications of the results are then explored with reference to current legislation and planning policy.

4.2. Species Recorded

4.2.1. A total of 60 species of bird were recorded using the site or its immediate surroundings over the survey period. These are summarised in Table 2 below along with information on peak count (i.e. the highest number of individuals recorded within the survey area as a whole during a single visit), conservation status, status in Berkshire and notes on distribution patterns. It should be noted that Schedule 1 status of birds is associated with breeding only (see Appendix 1) but has been included for completeness.

Table 1: Bird Species Recorded – Site and Immediate Surroundings

Common Name	Species Name	Peak Count	Sch1[1]	S41[2]	Red[3]	Amber[4]	Status in Berkshire[5]	Notes
Blackbird	*Turdus merula*	5					Abundant resident and common winter visitor	Frequent in hedgerows, wooded areas and marginal habitats.
Black-headed gull	*Chroicocephalus ridibundus*	1				✓	Common summer migrant, and increasing winter visitor	Single bird recorded within site in September but birds frequently seen flying over site on most visits
Blue tit	*Cyanistes caeruleus*	21					Abundant resident	Common around trees and areas of denser vegetation
Buzzard	*Buteo buteo*	3					Widespread resident following recent range expansion	Occasionally seen in woodland in south-east of site or perched in mature trees. Birds also regularly seen flying over, particularly from over Thames to east
Canada goose	*Branta canadensis*	285					Widespread introduced resident	Large groups seen foraging in open field in east of site (adjacent to Thames) on majority of visits, particularly from October onwards
Carrion crow	*Corvus corone*	24					Abundant resident	Regularly seen perched in trees or foraging in open grassland areas
Chaffinch	*Fringilla coelebs*	74					Abundant resident and winter visitor	Typically seen in low numbers within site but larger flocks seen foraging in 'weedy' vegetation adjacent to causeway on three occasions, often as a mixed flock with goldfinches

[1] Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) granting legal protection from disturbance at or near an active nest site (see Appendix 1).
[2] Species of Principal Importance to the conservation of biodiversity in England as listed in response to Section 41 (S41) of the Natural Environment and Rural Communities Act 2006 (see Appendix 1)
[3] Bird of high conservation concern or 'red list' in Birds of Conservation Concern 4 (Eaton et al, 2015) (see Appendix 1)
[4] Bird of medium conservation concern or 'amber list' in Birds of Conservation Concern 4 (Eaton et al, 2015) (see Appendix 1)
[5] Based on Berkshire occurrence (1989-2011) from http://berksoc.org.uk/county-atlas/distribution-maps/distribution-maps-overview/

Common Name	Species Name	Peak Count	Sch1[1]	S41[2]	Red[3]	Amber[4]	Status in Berkshire[5]	Notes
Chiffchaff	*Phylloscopus collybita*	5					Common summer visitor and increasing winter visitor	Low numbers recorded in autumn, likely as passage birds moving through
Coot	*Fulica atra*	1					Common resident and winter visitor	Individual birds seen on a few occasions in brook or open flooded areas adjacent to brook
Cormorant	*Phalacrocorax carbo*	2					Common winter visitor	Few observations of birds in open flooded areas adjacent to brook, with other birds also seen flying over site
Dunnock	*Prunella modularis*	3		✓		✓	Widespread resident	Occasionally seen in hedgerows and other areas of dense vegetation
Egyptian goose	*Alopochen aegyptiaca*	4					Increasing introduced resident	Pairs or small flocks seen on a number of visits, typically around brook and flooded areas or in open grassland in the east of the site
Fieldfare	*Turdus pilaris*	16	✓		✓		Common winter visitor which has bred	Small flocks seen on some visits, but presence very variable. Numbers are likely to vary between winters in response to weather conditions, with 2019/20 being generally mild (and therefore possibly resulting in lower numbers than in harder winters)
Gadwall	*Mareca strepera*	8				✓	Increasingly widespread winter visitor and scarce breeder	Small groups or scattered pairs using brook and flooded areas adjacent to the brook were recorded in late autumn/early winter, but these were absent later in the survey period
Goldcrest	*Regulus regulus*	2					Common resident and winter visitor	Small numbers of individuals seen in some visits around trees and woodland in south of site
Goldfinch	*Carduelis carduelis*	24					Common and widespread resident	Small groups often seen in hedgerows and marginal areas, with larger flocks occasionally seen foraging around edges of flooded areas (in ruderal vegetation) with chaffinches
Great tit	*Parus major*	18					Abundant resident	Regularly recorded in trees, woodland and marginal woody vegetation

Common Name	Species Name	Peak Count	Sch1[1]	S41[2]	Red[3]	Amber[4]	Status in Berkshire[5]	Notes
Green sandpiper	*Tringa ochropus*	1	✓			✓	Uncommon passage migrant and winter visitor	Single bird present in September visits, but no further records indicating this was a passage individual using the site as a stop over point
Green woodpecker	*Picus viridis*	2					Common resident	Individual birds seen foraging on grassland edges and in and around woodland areas in north-west and south-east of site
Great spotted woodpecker	*Dendrocopus major*	3					Common resident	Individual birds seen in mature trees and in woodland, particularly in south-east of site
Grey heron	*Ardea cinerea*	4					Locally common resident and winter visitor in small numbers	Birds seen foraging in brook and associated flooded areas as well as perched in bankside trees
Greylag goose	*Anser anser*	81				✓	Increasing introduced resident	Large groups seen on some occasions foraging on the grassland in the east of the site (often in association with Canada geese) but numbers were variable, with lower group sizes or no birds on some visits
Herring gull	*Larus argentatus*	7		✓	✓		Common passage migrant and winter visitor which now breeds	Small flocks or individuals seen using flooded areas in south-east of site on three occasions, but birds also regularly seen flying over
Hobby	*Falco subbuteo*	1	✓				Uncommon summer visitor and passage migrant	Individual bird seen on both September visits only indicating a passage bird using the site as a temporary stop off
House martin	*Delichon urbicum*	7				✓	Widespread summer visitor and passage migrant	Small flock only recorded in early September visit indicating passage birds moving through

Common Name	Species Name	Peak Count	Sch1[1]	S41[2]	Red[3]	Amber[4]	Status in Berkshire[5]	Notes
Jackdaw	*Corvus monedula*	9					Widespread and abundant resident	Frequently seen around woodland in south-east of site as well as flying over
Jay	*Garrulus glandarius*	4					Common resident and winter visitor	Individuals or pairs seen using wooded areas or in trees in hedgerows
Kestrel	*Falco tinnunculus*	2				✓	Widespread resident and winter visitor	Individual or pair of birds seen hunting over site or perched in trees on some visits, particularly toward south-eastern margins suggesting a locally resident pair
Kingfisher	*Alcedo atthis*	2	✓			✓	Uncommon resident	Individuals infrequently seen using brook corridor or margins of the Thames adjacent to site
Little egret	*Egretta garzetta*	1					Uncommon visitor and rare breeding species	Individual birds seen on some occasions foraging along brook corridor or associated flooded pools
Long-tailed tit	*Aegithalos caudatus*	14					Widespread and common resident	Frequent in trees, wooded areas and hedgerows
Magpie	*Pica pica*	12					Abundant resident	Pairs and small groups regularly seen in hedgerows and venturing onto open grassland
Mallard	*Anas platyrhynchos*	226				✓	Abundant resident and winter visitor	Regularly recorded in brook corridor and associated flooded areas with very large numbers in early November, but generally in smaller groups at other times (up to 62 birds)
Mandarin	*Aix galericulata*	6					Localised and increasing introduced resident	Small numbers seen on some visits in flooded areas close to brook or in wet woodland in south-east

Common Name	Species Name	Peak Count	Sch1[1]	S41[2]	Red[3]	Amber[4]	Status in Berkshire[5]	Notes
Meadow pipit	*Anthus pratensis*	5				✓	Common migrant and winter visitor and locally common breeder	Small numbers seen in some visits using open grassland areas
Mistle thrush	*Turdus viscivorus*	24			✓		Widespread resident	Variable numbers seen, but birds typically associated with larger trees through central part of site (brook corridor)
Moorhen	*Gallinula chloropus*	2					Common and widespread resident and winter visitor	Small numbers seen in brook corridor
Mute swan	*Cygnus olor*	4				✓	Widespread resident	Pairs frequently seen in brook corridor and flooded pools
Nuthatch	*Sitta europaea*	1					Widespread resident	Infrequent sightings in woodland toward south/south-east of site
Peregrine	*Falco peregrinus*	1	✓				Scarce resident, winter visitor and passage migrant	Individual seen hunting teal in brook corridor on one occasion (early December)
Pheasant	*Phasianus colchicus*	1					Widespread, locally abundant resident	Infrequently seen using edges of site
Pied wagtail	*Motacilla alba*	4					Common resident, passage migrant and winter visitor	Frequently seen in small numbers, often in association with edges of flooded pool in south-east of site
Red kite	*Milvus milvus*	10	✓				Widespread resident following a recent re-introduction	Frequently seen foraging over site or perched in trees in variable numbers

Common Name	Species Name	Peak Count	Sch1[1]	S41[2]	Red[3]	Amber[4]	Status in Berkshire[5]	Notes
Redwing	*Turdus iliacus*	5	✓		✓		Common winter visitor	Occasional small flocks present. Numbers are likely to vary between winters in response to weather conditions, with 2019/20 being generally mild (and therefore possibly resulting in lower numbers than in harder winters)
Ring-necked parakeet	*Psittacula krameri*	15					Increasingly common but localised resident	Regularly seen in mature trees and woodlands, particularly around south/south-eastern parts of site
Robin	*Erithacus rubecula*	14					Abundant resident	Frequent in hedgerows, wooded areas and site margins
Skylark	*Alauda arvensis*	1		✓	✓		Common resident, passage migrant and winter visitor	Individuals seen in western field in October but absent in other visits suggesting overwintering resident birds or passage individuals using the site on an irregular basis
Snipe	*Gallinago gallinago*	1				✓	Widespread winter visitor in suitable habitat, formerly bred	Individuals flushed from muddy margins of flooded pools in south-east of site on two occasions
Song thrush	*Turdus philomelos*	3		✓	✓		Common resident and winter visitor	Low numbers seen in marginal areas, hedgerows and woodland
Sparrowhawk	*Accipiter nisus*	1					Widespread resident and winter visitor	Individuals seen hunting through central part of site on a few occasions
Starling	*Sturnus vulgaris*	1		✓	✓		Common resident and winter visitor	Single occurrence in east of site, with other birds seen flying over only
Stock dove	*Columba oenas*	5				✓	Common resident and winter visitor	Small numbers seen, typically around south-eastern woodland or in north-west of site

Common Name	Species Name	Peak Count	Sch1[1]	S41[2]	Red[3]	Amber[4]	Status in Berkshire[5]	Notes
Swallow	*Hirundo rustica*	8					Abundant summer visitor and passage migrant	Birds seen in early September only (birds on passage)
Teal	*Anas crecca*	81				✓	Widespread winter visitor and rare summer visitor	Regular presence of variable numbers in brook corridor and larger flooded pool in south-east adjacent to causeway
Treecreeper	*Certhia familiaris*	1					Common resident	Very infrequent observations within woodland areas
Water rail	*Rallus aquaticus*	1					Uncommon winter visitor, rare in summer	Birds heard calling from central brook corridor. Numbers present through winter hard to gauge due to secretive nature. Individual birds also associated with the waterbody in the woodland in the north of the site.
Wigeon	*Mareca penelope*	17				✓	Widespread winter visitor and rare summer visitor	Small flock present until early winter, but then no further records
Woodpigeon	*Columba palumbus*	102					Abundant resident and winter visitor	Frequent records around site in variable numbers, with larger flocks tending to be present in woodlands in south-east and north-west of site
Wren	*Troglodytes troglodytes*	9					Abundant resident and winter visitor	Frequently recorded in denser vegetation
Yellowhammer	*Emberiza citrinella*	1		✓	✓		Common resident	Single record of a bird perched on dead tree in western part of site before flying north-west

4.3. Overview of Assemblage and Distribution Patterns

4.3.1. The bird assemblage using the site over winter was dominated by common and widespread species which are likely to be either resident year-round, or species which are resident in the UK but for which wintering populations are bolstered by migrant individuals. This particularly included the small passerine species predominantly recorded using denser vegetation such as trees and scrub associated with the boundaries of the site and the woodland areas. However, the presence of wetland and waterbird species within the site was also a characteristic component of the bird assemblage. These were almost exclusively associated with the central brook area and surrounding seasonally flooded areas, particularly the larger shallow pools either side of the raised causeway area. A limited range of species were strongly associated with these areas, including regular flocks of teal (*Anas crecca*) and mallard (*Anas platyrhynchos*) along with smaller numbers of other wetland and waterbird species including wigeon (*Mareca penelope*), little egret (*Egretta garzetta*) and water rail (*Rallus aquaticus*). In addition, species such as Canada geese (*Branta canadensis*) were frequently recorded using the larger open grassland in the east of the site for grazing, along with lower numbers of greylag geese (*Anser anser*) and Egyptian geese (*Alopochen aegyptiaca*). These birds evidently access the site from the adjacent River Thames (they were seen doing so on some visits with large flocks also noted on the river at other times) but were also seen roosting and loafing within the flooded pools along the brook on site on some occasions.

4.3.2. Species with broader habitat requirements included a variety of passerines such as blue tits (*Cyanistes caeruleus*), great tits (*Parus major*), robins (*Erithacus rubecula*), wrens (*Troglodytes troglodytes*) and woodpigeons (*Columba palumbus*). Chaffinches (*Fringilla coelebs*) and goldfinches (*Carduelis carduelis*) were also frequent, with numbers varying across the winter period. Larger flocks were noted foraging in the area of ruderal vegetation adjacent to the raised causeway later in the winter. Mistle thrushes (*Turdus viscivorus*) were also frequently seen, particularly in the larger poplar trees with mistletoe along the brook corridor. A range of corvids were also frequently encountered on site in smaller numbers. These included carrion crows (*Corvus corone*) using open grassland and marginal habitat, magpies (*Pica pica*) tending to utilise woody vegetation on the edges of the open grasslands and jays (*Garrulus glandarius*) and jackdaws (*Coloeus monedula*) more strongly associated with larger trees and woodland areas. Other species that tended to be recorded predominantly in association with mature tree and woodland habitats included regular ring-necked parakeets (*Psittacula krameri*) along with smaller numbers of great spotted woodpeckers (*Dendrocopus major*), green woodpeckers (*Picus viridis*), nuthatch (*Sitta europaea*) and treecreeper (*Certhia familiaris*).

4.3.3. A range of raptor species were recorded using the site. Of these, the most frequently encountered were red kites (*Milvus milvus*) which were regular seen flying over the site or perching in trees on the margins. Buzzards (*Buteo buteo*) were also seen in lower numbers, tending to be associated with the south-eastern woodland or seen flying in from the higher woodlands off-site beyond the River Thames. Kestrels (*Falco tinnunculus*) were noted hunting over the site or perched in trees on some visits (likely a locally resident pair). These tended to be present around the hedgerow on the southern edge of the western field or flying over grassland in the west and east of the site. Individual sparrowhawks (*Accipiter nisus*) were also

seen on a few occasions flying through the site, particularly along the central wooded brook corridor or close to the woodland in the south-east.

4.4. Overall Evaluation

4.4.1. The site as a whole was found to support a diverse assemblage of bird species over winter. However, no individual species was present in numbers indicating national or regional importance. Canada geese and greylag geese were regularly present in high numbers. However, these are both introduced or naturalised feral species in this part of the UK. Other species were present in variable numbers through the winter period, with many being common and widespread species both nationally or in Berkshire.

4.4.2. Within the context of the site, the wetland areas of the site including the central brook corridor and associated flooded areas, particularly in the south-east of the site, are of value to a range of wetland species. This includes in particular regular flocks of teal (up to 81 individuals recorded), varying numbers of gadwall, mallard and wigeon and other species including water rail which is cited in Berkshire as an uncommon winter visitor, rare in summer. Although a peak count of only one water rail was recorded, this species was heard on a number of visits with total numbers possibly being greater given its secretive nature and low detectability. In addition, the flooded pools appear to provide occasional foraging/loafing areas for migrant species passing through such as green sandpiper, with the overall site also being used by other migrant species including hobby and mixed flocks of finches, albeit in low numbers or on an irregular basis.

4.4.3. Criteria for the selection of Local Wildlife Sites (LWS) in Berkshire (TVERC and BMERC, 2018) indicates that any site that frequently supports significant non-breeding numbers of certain notable species may be considered for Local Wildlife Site (LWS) status. The list of notable species includes both green sandpiper and water rail, with the threshold being two individuals in the case of green sandpiper and five in the case of water rail. Based on the survey data alone, this threshold was not met for either species. However, in the case of water rail in particular the actual number using the site may be higher (i.e. five or more) due to low detectability. Although this cannot be confirmed, the site may support numbers of water rail of County value. In the case of green sandpiper, there may be occasions where two (or more) birds are present. However, the survey suggests that use of the site by this species is infrequent. All other species thresholds for LWS selection are well above the numbers recorded on site, or the species were not recorded using the site.

4.4.4. In summary the site is deemed to be of value to over-wintering and passage birds in the local context due to the range of species supported overall and presence of a few species that are less common in Berkshire (e.g. hobby and green sandpiper) albeit generally in low numbers and on occasion only. It is also recognised that the site may have increased value (up to County value) for water rail, although this cannot be confirmed by a single study over one winter period alone. Within the site, the wetland areas and central brook corridor are likely the most ecologically sensitive and valuable (to wintering bird species) with woodlands, scrub and hedgerow areas also contributing to the overall diversity of species supported. The open grasslands are of some value, but primarily used (on a regular basis) by grazing geese species

that are introduced or naturalised, with other species (e.g. meadow pipits and skylarks) only being present in very low numbers or on a very irregular basis.

5. Outline Impacts and Recommendations

5.1. Overview

5.1.1. This section explores potential adverse impacts on passage/overwintering bird species that may arise through the change in use of the site as public open space (both during the initial setting-up phase plus subsequent operational and ongoing management phases). This is followed by recommendations to avoid, reduce or mitigate/compensate potential adverse impacts. Potential positive impacts or opportunities for enhancement are then also explored with recommendations for how these can be achieved.

5.2. Potential Adverse Impacts and Recommendations

5.2.1. The used of the site as public open space may lead to a variety of adverse impacts on wintering birds such as:

- Increased disturbance of birds via increased number of visitors (particularly those with dogs).
- Increased predation risk of birds from pet dogs visiting the site.
- Loss or change in quality/amount of suitable foraging or roosting/loafing habitat through changes in management or increased human activity.

5.2.2. The above potential impacts, plus recommendations for how they can be overcome or limited are explored below.

Disturbance

5.2.3. At present the exact number of anticipated public visitors to the site during the periods when passage or overwintering birds are present is not known. In addition, the proportion of these that will have pet dogs is also unclear. However, promotion of the site as public open space including the creation of a carpark (the primary aim of the project) can be expected to result in an increase in visitors beyond those visiting during the survey, with a likely associated increase in dog walkers. In order to maintain (or allow scope for increasing) the bird interest of the site, management of access through site layout and other measures is recommended. This could include the following:

- The continued restriction of access to the causeway area in the south-east of the site and areas adjacent to the central brook corridor as far as possible. Existing fencing already provides a means for preventing access to these areas and should be maintained if disturbance of wetland bird species using these areas is to be avoided or reduced. Without these measures it is likely that regular disturbance would occur, resulting in the possible abandonment of the site by particularly sensitive (or 'flighty') species such as teal, gadwall and wigeon and possible reduction in the overall numbers and diversity if species using these areas. This could result in a reduction in the overall biodiversity of the site which could be counter to current national and local planning policy (see Appendix 1).
- The maintenance of existing fencing and footpath routes through the remainder of the site to guide visitors around the area whilst restricting or limiting access to some areas. This will

ensure some areas have no or very low amounts of public use, providing largely undisturbed refuges for bird species (and other fauna).

- Consideration could be given to prohibiting dogs off the lead, or zoning of the site to allow dogs off the lead in some areas (e.g. parts of the grassland in the west of the site) whilst promoting dogs being on the lead in others. This could also help in managing access for different users of the site; e.g. bird watchers or parents with young children who may prefer some dog-free areas.
- Consideration could also be given to providing an accessible bird hide or similar structure in a suitable part of the site. This could for example be placed to give views over the flooded areas in the south-east of the site to promote some visual access, whilst maintaining the area as an undisturbed refuge for bird species. Any access route to a hide would need to be screened such as with new hedgerow planting or fencing; this would also ensure access beyond the route to and from it is restricted. It is also recommended that dogs are prohibited from any such hide and route.

Predation from Pet Dogs

5.2.4. The recommendations above under disturbance to direct visitors around the site and provide some physical barriers to dogs would help to reduce predation risk. If dogs are kept on the lead whilst on site this would significantly reduce the risk. However, if this is undesirable then consideration of zoning (i.e. creating dog-free or dog on the lead areas) parts of the site may be of benefit. Note that free-running dogs could limit the benefit of possible measures to enhance the site, such as diversifying grassland areas.

Habitat Loss or Change

5.2.5. The proposals are not expected to result in significant changes to the habitats on site, although some small-scale changes or habitat loss are expected (e.g. creation of a small car-park in the west of the site) or may occur as a result of other setting-out works or future management (e.g. creation of paths or cutting of vegetation for access maintenance). These are unlikely to result in significant adverse impacts on passage and overwintering birds as only small areas will be affected, with these not being of key value to bird species within the site.

5.2.6. More significant impacts could occur if management works to the central brook corridor are proposed, such as dredging or channel deepening. This would need to be carefully managed if essential, with works ideally being timed to avoid the key overwintering period as well as the bird breeding season. Therefore, works in late summer (for example) may reduce impacts, but any works should only be undertaken if essential.

5.3. Potential Positive Impacts and/or Opportunities for Enhancement

5.3.1. Management of the site as public open space presents challenges in terms of permitting and encouraging access whilst maintain or increasing the overall biodiversity interest. In relation to overwintering birds, this is mainly associated with potential disturbance which is discussed above. However, safeguarding the site as open greenspace into the future, which will result in the ongoing provision of habitat suitable for a range of wintering birds (and other species), is a potential benefit (as the future of the site would otherwise be uncertain). Future

management/maintenance presents some opportunities for positive impacts on passage/overwintering bird species through habitat enhancement. Options may include (but need not be limited to):

- Managing the flooded pools in the south-east of the site (at least in part) to create a more stable pool or scrape. This could involve limited earthwork to create a slightly deeper ponded area with graded banks creating shallow margins and areas of open mud. This would likely need careful consideration and consultation with the Environment Agency in terms of flood risk management.
- Expanding reedbed habitat along the brook in appropriate areas to increase cover for species such as water rail and other species, both overwinter and during the breeding season. This could be achieved by encouraging natural expansion via appropriate management (e.g. selective opening up of some areas of scrub or willow growth along banks) or physical planting of reeds in appropriate areas.
- Managing the pond in the north-west of the site (within woodland) to maintain a mixture of open water and marginal vegetation habitats. This could benefit a range of wetland bird species as well as preventing loss of the pond to scrub succession over time.
- Planting new sections of native hedgerow to provide additional foraging and roosting habitat for a range of species. Alternatively, allowing or encouraging the development of scrub thickets in some areas, such as on the fringes of woodland, would provide a new habitat buffer and shelter for a range of species. This can have the added benefit of enabling woodland regeneration in the longer term.
- Managing areas of the grassland to create a more diverse meadow grassland with some structural diversity and tussocky areas could increase biodiversity in the summer months whilst creating new opportunities for overwintering species such as skylarks, meadow pipits and yellowhammers (jn the latter case particularly if associated with some marginal hedgerow or scrub provision).
- Providing increased public information, such as interpretation boards, to increase the perceived value of the area and to provide some educational material; e.g. bird identification guides or information on bird migration patterns.

6. Conclusion

6.1.1. The wintering bird survey completed at the Battlemead Common site during the autumn 2019 to spring 2020 period revealed the use of the site by a mixed variety of species, with an overall assemblage of at least 60 species recorded. Whilst this assemblage was dominated by species that are common and widespread both nationally and in Berkshire, the range of habitats within the site provides conditions for a mixture of species groups with occasional use by some less common or irregularly occurring species also recorded. Overall, the site is of value to wintering bird species within the local area, with the areas of wetland associated with the central brook corridor being of particular interest in the context of the site. These areas were found to support wetland bird species that are also likely to be sensitive to disturbance. In order to maintain the wintering bird interest, measures are recommended to manage access to limit or avoid regular disturbance and maintain refuge areas for bird species.

7. References

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *Birds of Conservation Concern 4: the population status of bird in the United Kingdom, Channel Islands and Isle of Man*. British Birds 108, 708–746

Thames Valley Environmental Records Centre (TVERC) and Buckinghamshire & Milton Keynes Environmental Records Centre (BMERC) (2018). Local Wildlife Sites Selection Criteria, Version 7. Berkshire, Buckinghamshire and Oxfordshire.

7.1. Websites

http://berksoc.org.uk/county-atlas/distribution-maps/distribution-maps-overview/

8. Figures

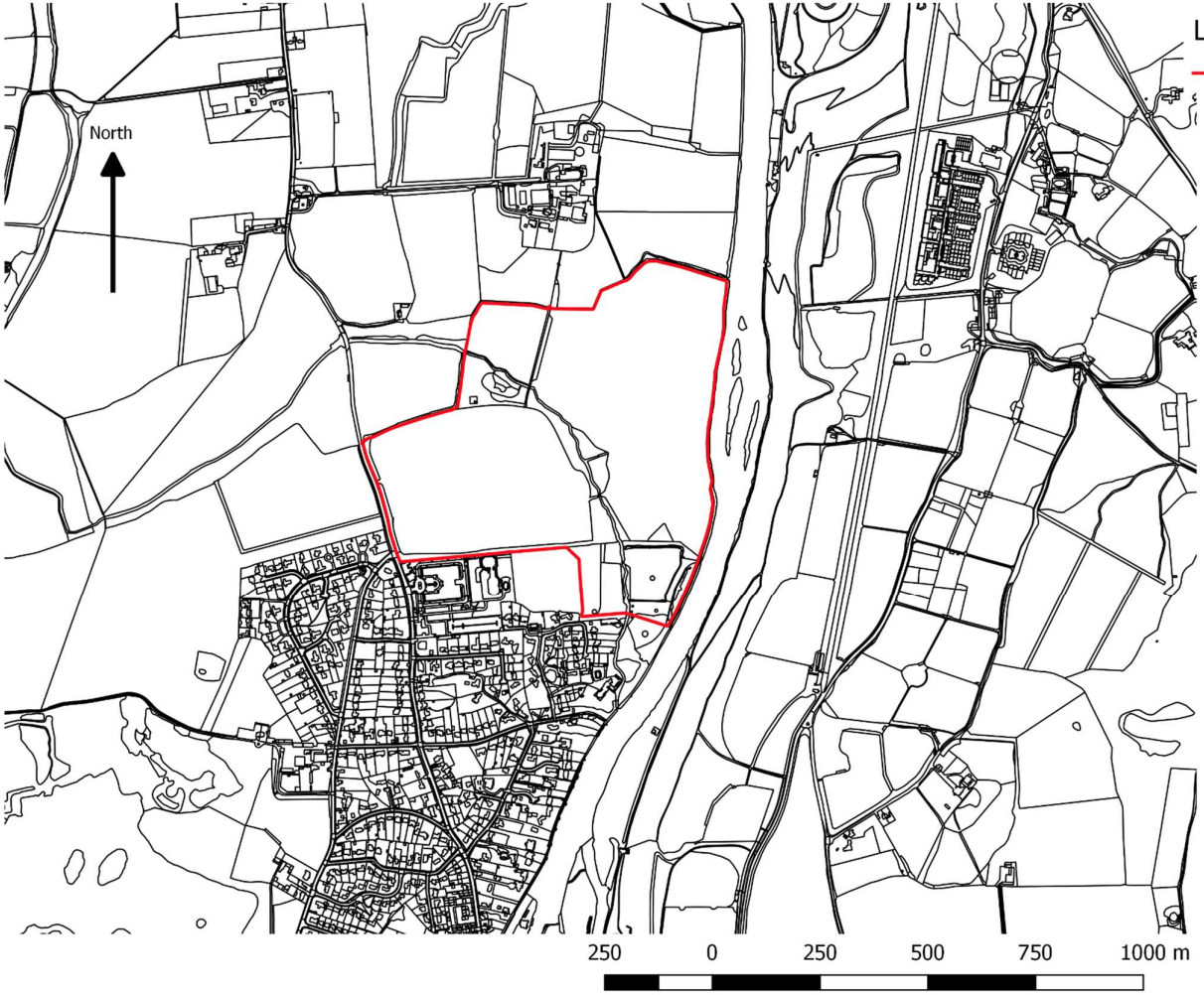

Figure 1 Site Location and Survey Boundary

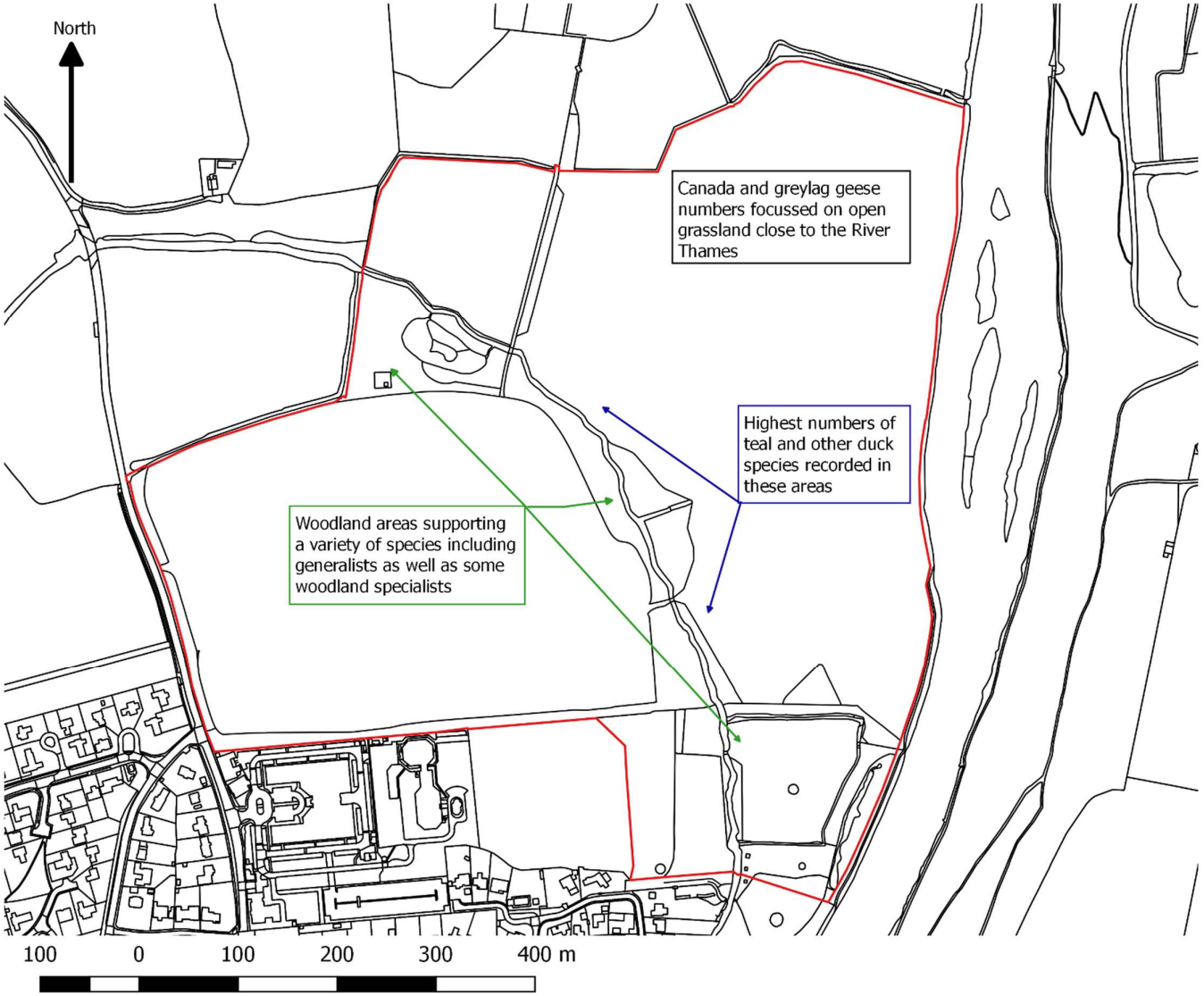

Figure 2 Key Notes on Use of the Site by Wintering Birds

9. Appendix 1 – Relevant Legislation and Planning Policy

9.1.1. This section briefly summarises the relevant national and local planning policies and legislation pertaining to habitats and species mentioned within this report. Please note that the following text does not constitute legal advice.

9.2. National Planning Policy Framework

9.2.1. The National Planning Policy Framework (NPPF) was published in February 2019. This document states that:

9.2.2. '*Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives)… an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'*.

Conserving and Enhancement of the Natural Environment

9.2.3. Section 15 relates to: Conserving and Enhancement the Natural Environment. This states:

9.2.4. '*Planning policies and decisions should contribute to and enhance the natural and local environment by:*

9.2.5. a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)

9.2.6. b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

9.2.7. c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

9.2.8. d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

9.2.9. e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

9.2.10. *f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate*.

Habitats and Biodiversity

9.2.11. To protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

9.2.12. *When determining planning applications, local planning authorities should apply the following principles*:

- if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

9.3. The Royal Borough of Windsor and Maidenhead Local Plan

9.3.1. A new Borough Local Plan was submitted for review on 30th June 2017. The following policies are of relevance to biodiversity and nature conservation.

POLICY NR 3 - Nature Conservation

9.3.2. 1. *Designated sites of international and national importance, will be maintained, protected and enhanced. Protected species will be safeguarded from harm or loss.*

9.3.3. 2. Development proposals:

- a. Will be expected to demonstrate how they maintain, protect and enhance the biodiversity of application sites including features of conservation value such as hedgerows, trees, river corridors and other water bodies and the presence of protected species

- b. Will avoid impacts on habitats and species of principal importance, such as those listed under Section 41 of the NERC Act 2006
- c. Either individually or in combination with other developments, which are likely to have a detrimental impact on sites of local importance, or compromise the implementation of the national, regional, county and local biodiversity actions plans, will not be permitted unless it can be demonstrated that the benefits clearly outweigh the need to safeguard the nature conservation value of the site
- d. Will be required to apply the mitigation hierarchy to avoid, mitigate or as a last resort compensate for any adverse biodiversity impacts, where unavoidable adverse impacts on habitats and biodiversity arise. Compensatory measures involving biodiversity offsetting will be considered as a means to prevent biodiversity loss where avoidance and mitigation cannot be achieved

9.3.4. *3. Development proposals will be expected to identify areas where there is opportunity for biodiversity to be improved and, where appropriate, enable access to areas of wildlife importance. Development proposals shall also avoid the loss of biodiversity and the fragmentation of existing habitats, and enhance green corridors and networks*

9.4. National Legislation

Nesting Birds

9.4.1. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs.

Schedule 1 Bird Species

9.4.2. Bird species listed on Schedule 1 of the WCA (e.g. barn owl and black redstart) receive additional protection from disturbance at or near an occupied nest site. Schedule 1 of the Act makes it an offence to intentionally or recklessly disturb this species while it is building a nest or is in, on or near a nest containing eggs or young. It also makes it an offence to intentionally or recklessly disturb dependent young of this species.

Natural Environment and Rural Communities Act 2006

9.4.3. The NERC Act 2006 reinforces the duty upon all public authorities, including planning authorities, to have regard for the conservation of biodiversity when discharging their duties. The Act refines the definition of biodiversity conservation, stating that it includes restoring or enhancing a population or habitat. Section 41 of the NERC Act requires the Secretary of State to list habitats and species of principal importance (HPIs and SPIs) for the conservation of biodiversity in England. The habitats and species listed in accordance with Section 41 largely replicate those previously listed on the UK Biodiversity Action Plan (BAP) which occur in England (however there are exceptions). A variety of bird species are listed as SPIs, including the dunnock and song thrush (among others).

9.4.4. Section 40 of the NERC Act states that "every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity". This is sometimes referred to as the 'biodiversity duty'.

9.5. Other Definitions of Conservation Status

Red and Amber Lists

9.5.1. The UK's leading bird conservation organisations reviewed the latest information on the status of birds in the UK and elsewhere in their range to update the status of birds which occur regularly in the UK. This is presented as the Birds of Conservation Concern 4 (Eaton et al, 2015), comprising a 'red list' of species of high conservation concern, an 'amber' list of species of moderate conservation concern, with other species that do not qualify under red or amber list criteria on the green list. To qualify on the red list species may be listed as globally threatened by IUCN, have suffered a historical decline without substantial recent recovery, or a decline of more than 50% in breeding or non-breeding populations, or a 50% contraction in breeding range over 25 years (or the longer term). Amber list species can be those listed as Species of European Conservation Concern, those which have suffered a historical decline but shown significant recent recovery, have shown a decline of between 25 and 50% in breeding or non-breeding populations, or a contraction in breeding range of between 25 and 50% over 25 years (or the longer term) or be rare or localised breeders in the UK, or be species for which 20% of the breeding or non-breeding population is found in the UK.

9.5.2. Red or amber listing does not confer additional protection under legislation or planning policy; however, it provides a basis for targeting conservation effort and is a widely used resource for interpreting bird populations.

Battlemead Common, Maidenhead, Berkshire

Update Breeding Bird Survey

For Royal Borough of Windsor and Maidenhead

July 2021

Project Number	0286.07
Client Reference	Royal Borough of Windsor and Maidenhead
Project/Site Name	Battlemead Common, Maidenhead
Report Title	Update Breeding Bird Survey

Version Number	Date	Author	Reviewer
001	05/07/2021	Ed Austin	Stephen Foot

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Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a qualified legal professional should be sought.

1. Non-technical Summary

1.1.1. The Royal Borough of Windsor and Maidenhead (RBWM) have proceeded with a planned change of use of Battlemead Common (hereafter referred to as "the site") from agricultural use to public open space providing an amenity resource and access around and through the site linking to the Thames Path to the east. As part of these proposals, RBWM are maintaining and enhancing the ecological value of the site as well as exploring further options for access. This in part has been informed by a series of baseline ecological surveys completed in 2018/19 including a 2019 breeding bird survey. The site is located off Lower Cookham Road and lies to the north of Maidenhead in Berkshire.

1.1.2. Austin Foot Ecology was commissioned by RBWM in 2021 to undertake an updated breeding bird survey in order to gather information on the current breeding bird assemblage using the site and to compare the overall assemblage with that recorded in 2019. This information could also be used to inform potential impacts and recommendations associated with ongoing management and options for access including the seasonal (summer only) opening of the existing causeway across White Brook toward the south-eastern part of the site and the installation of a new boardwalk through the south-eastern woodland.

1.1.3. The 2021 survey recorded a total of 46 species of bird as confirmed, probably or possibly breeding on site or in the immediate vicinity. This was slightly above the total of 44 recorded in 2019, although the species list differed slightly. The overall assemblage was still dominated by common and widespread species (e.g. thrushes, tits, robins and wrens, etc.). However, the assemblage included thirteen species of varying conservation concern, including one specially protected (Schedule 1) species; the kingfisher. Barn owl was recorded as a potential breeding species in 2019 but was not recorded in 2021. Overall, the wetland and woodland areas plus associated corridors of trees, hedgerows and scrub (particularly through the central part of the site) were found to still be of most value to breeding bird species (as in 2019). A notable change since the 2019 survey was the presence of skylark as a potential breeding species in 2021, with low numbers recorded both in the western and eastern open fields (either side of the White Brook flowing through the central part of the site).

1.1.4. Potential impacts on breeding birds associated with ongoing management or access options such as opening up the causeway or a new boardwalk could include:

- Increased disturbance (people and dogs) or predation risk (dogs).
- Loss or change in quality/amount of suitable nesting habitat in the south-eastern plantation woodland if the option to create a boardwalk through this area is pursued.
- Loss or change in quality/amount of suitable nesting habitat through changes in management.
- Risk of killing/injury of birds (most likely young birds) or damage/destruction of active nests and eggs through habitat clearance/management.

1.1.5. Recommendations to limit or avoid the above and during future management include (but need not be limited to):

- The provision of visitor information to draw attention to the fact that ground nesting species may be present.
- The creation of clear pathways via seasonal mowing to guide visitors to certain areas of the grasslands whilst leaving other areas less accessible.
- Paths and access should ideally be prevented from within at least 50m of all barn owl box locations.
- Careful planning of the route of any boardwalks to ensure areas adjacent to the White Brook and on the edge of the wetland further north remain largely undisturbed.
- Fencing and screening new access areas (e.g. boardwalk or causeway) to prevent ad hoc access outside these areas by people and dogs and limit potential disturbance.
- Undertaking any required cutting or clearance of suitable nesting habitat (e.g. trees, shrubs or other dense vegetation) within the period September to February inclusive
- Managing grassland areas to benefit skylarks by creating a diverse structure with shorter and taller areas of grass as well as increasing botanical diversity.

1.1.6. Further details of the above are contained within the main body of this report.

2. Introduction

2.1. Site and Project Description

2.1.1. Battlemead Common (hereafter referred to as "the site") is located to the east of Lower Cookham Road in the north of Maidenhead in Berkshire. The central grid reference is SU 9044 8388. The site is bordered to the east by the River Thames, to the west by Lower Cookham Road with pasture beyond, to the north by White Place Farm and to the south by commercial and residential development. The site covers an area of approximately 45ha comprising semi-improved grassland, woodland, wetland habitat and tall ruderal vegetation. The White Brook also passes through the centre of the site. The site boundary is shown in Figure 1.

2.1.2. The Royal Borough of Windsor and Maidenhead (RBWM) are still in the process of determining the extent to which Battlemead Common will be opened to the public and therefore up to date survey information was required on which to base this decision. The Royal Borough of Windsor and Maidenhead (RBWM) are pursuing options to create a circular walk around the site. The first of these options involves opening the causeway and allowing access across this area between April and September inclusive (in order to avoid impacts to overwintering birds. Dog-proof fencing would be installed eitherside of the causeway and across the field to prevent dogs from gain access to the wetland areas and impacting nesting birds. The 2nd option involves the installation of a pathway/boardwalk (including the reinstatement of a bridge across the White Brook) through the plantation woodland in the south of the site. The boardwalk is to be fenced (with dog-proof fencing) either side with fencing also proposed around the perimeter of the Site.

2.2. Ecological Context

2.2.1. A breeding bird survey was undertaken between late April 2019 and mid-June 2019 (Austin Foot Ecology, 2019). This survey identified 44 species of bird as confirmed, probably or possibly breeding on site or the immediate vicinity. The assemblage was dominated by common and widespread species (e.g. thrushes, tits, robins and wrens, etc.). However, twelve species of varying conservation concern were also recorded, including two specially protected (Schedule 1) species; the barn owl and kingfisher (albeit nesting on site was not confirmed for either). Overall, the wetland and woodland areas plus associated corridors of trees, hedgerows and scrub (particularly through the central part of the site) were found to be of most value to breeding bird species in 2019.

2.3. Legislation and Policy Background

2.3.1. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, bird species listed on Schedule 1 of the WCA (e.g. barn owl) receive additional protection from disturbance at or near an occupied nest site.

2.3.2. The NERC Act 2006 reinforces the duty upon all public authorities, including planning authorities, to have regard for the conservation of biodiversity when discharging their duties.

The species listed in accordance with Section 41 as priorities for conservation includes variety of bird species such as the dunnock (*Prunella modularis*) and song thrush (*Turdus philomelos*) among others.

2.3.3. The National Planning Policy Framework (NPPF) promotes minimising impacts on and providing net gains for biodiversity. The NPPF also provides guidance for local planning authorities (LPAs) by indicating that, if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or compensated for, then planning permission should be refused. Development whose primary objective is to conserve or enhance biodiversity should be supported, while opportunities to incorporate biodiversity improvements in and around developments should be encouraged.

2.3.4. The Royal Borough of Windsor and Maidenhead Local Plan establishes that (at a local level) planning applications will be expected to (among other things) demonstrate how they:

- Maintain, protect and enhance biodiversity including protected species
- Avoid impacts on habitats and species of principal importance, such as those listed under Section 41 of the NERC Act 2006
- Apply the mitigation hierarchy to avoid, mitigate or as a last resort compensate for any adverse biodiversity impacts.
- Identify areas where there is opportunity for biodiversity to be improved and, where appropriate, enable access to areas of wildlife importance.
- Avoid the loss of biodiversity

2.4. Aims of Study

2.4.1. Given the time that has elapsed since the initial breeding bird was undertaken (two years), Austin Foot Ecology was commissioned to undertake an update breeding bird survey within the site in spring/summer 2021. The main aims of this report are to:

- Describe the methods used during the breeding bird survey;
- Detail and evaluate the results of the survey;
- Set out the legislative protection afforded to birds associated with the site;
- Present a preliminary assessment of any potential ecological opportunities or constraints (relating to breeding birds) associated with use of the site for public access including the plantation woodland to the south;
- Determine whether the initial recommendations provided previously remain valid and whether additional measures could be incorporated to mitigate/enhance the site for breeding birds in light of survey results.

3. Method

3.1. Field Survey

3.1.1. A breeding bird survey was completed within the site between mid-April 2021 and mid-June 2021. As before, the survey was based on the Common Bird Census (CBC) method (Bibby *et al*, 2000), but reduced from ten to five early morning visits[1]. In addition, to gather information on crepuscular and nocturnal species, two evening (pre-dusk to post-dusk) visits were also completed. Survey visits were spaced throughout the survey period with all visits completed during appropriate weather conditions (i.e. periods of very heavy rain, dense fog or strong winds were avoided). Each early morning visit was completed by a single surveyor, with evening visits completed by two surveyors for reasons of health and safety (working during periods of low-light level). Each survey visit took approximately 2 hours to complete, with the dusk surveys starting one hour before sunset and finishing one hour after sunset.

3.1.2. The survey dates and weather conditions are provided in Table 1 below.

Table 1: Survey Dates and Weather Conditions

Date and Survey Timing	Weather Conditions
09/04/21 06:25-08:30	Weather conditions were dry and partially cloudy (3/8 cloud cover) with calm air (Beaufort Scale F1) and cool temperatures ranging between 5°C-7°C.
23/04/21 05:50-08:00	Weather conditions were dry with clear skies (1/8 cloud cover) and calm air (Beaufort Scale F1). Air temperature ranged between 3°C and 5°C.
10/05/21 05:10-07:02	Weather conditions were dry and overcast (7/8 cloud cover) with calm air (Beaufort Scale F1). Air temperatures were around 10°C.
18/05/21 (dusk survey) 19:52-21:52	Weather conditions were dry and largely overcast (6/8 cloud cover) with a moderate breeze (Beaufort Scale F4). Air temperatures were around 15°C.
27/05/21 05:00 – 07:00	Conditions were dry with clear skies (1/8 cloud cover) and calm air (Beaufort Scale F1). Air temperatures ranged between 8°C and 11°C.

[1] It should be noted that the Common Bird Census ran from 1962 to 2000 and was the first of the British Trust for Ornithology's (BTO) schemes for monitoring population trends among widespread breeding birds. It has now been superseded for this purpose by Breeding Bird Survey (BBS). The weaknesses of the CBC as a monitoring method of UK bird populations were largely related to the time-consuming nature of both fieldwork (requiring ten visits) and subsequent analysis. However, a reduced version (i.e. reduced number of visits) of the CBC (still using the territory mapping approach) is widely used to gather baseline data for sites by ecological consultants, as it provides detailed information on bird species, distribution and likely breeding status.

Date and Survey Timing	Weather Conditions
08/06/21 (dusk survey) 20:17-22:20	Weather conditions were dry with minimal cloud (2/8 cloud cover) with a light breeze (Beaufort Scale F1). Air temperatures were around 21°C.
15/06/21 04:45-07:10	Weather conditions were dry with overcast skies (7/8-8/8 cloud cover) and a light breeze (Beaufort Scale F2). Air temperatures were cool ranging between 15°C and 17°C.

3.1.3. During each visit the entire site was walked slowly, approaching all suitable habitat within 50m and scanning and listening for birds. In accordance with good practice guidance (Bibby *et al*, 2000) the starting point and direction of the route walked were varied on each survey visit; this serves to minimise bias, as birds may be active at different times of day in different areas. The locations of birds seen and heard were mapped using standard BTO two letter codes and activity symbols. Where breeding activity was observed this was recorded in accordance with the following categories (based on standard BTO criteria):

- Non-breeder – Birds observed flying over, considered to still be on migration or a summering non-breeder.
- Possible breeding – Birds observed singing or present in suitable habitat in breeding season.
- Probable breeding – A pair observed in suitable habitat, territorial behaviour observed in the same place on at least two separate occasions, or by many individuals simultaneously on one day, or birds observed visiting a probable nest site, showing courtship or display behaviour in suitable breeding habitat or nest building.
- Confirmed breeding – Nest containing eggs or young seen or heard, adults observed carrying faecal sac or food, feigning injury as a distraction display or entering or leaving a nest site in circumstances indicating an occupied nest, a used nest or eggshells found or recently fledged or downy young recorded (showing evidence of dependency on adults).

3.1.4. Field observations from all survey visits were combined to enable identification of clear clusters of records and to provide an indication of likely territory numbers. During the nocturnal surveys thermal imaging cameras were used to help locate and identify birds in low-light levels.

3.2. Survey Limitations

3.2.1. All survey visits were completed during an appropriate time of year and suitable weather conditions. Access was available within the entire site boundary with areas not passable on foot (e.g. flooded areas) being possible to view from various vantage points. This meant the entire site could be visually and audibly surveyed. There were therefore no significant limitations to the survey methods set-out in Section 3.1 of this report.

3.3. Personnel

3.3.1. Ed Austin MCIEEM has been in continuous employment as a professional ecologist since 2004 and began his career in environmental consultancy in 2002. He has a particular focus on bird survey and assessment, having completed numerous projects across the UK. His experience includes a variety of breeding and wintering bird surveys based on standard methods such as the Common Bird Census (CBC), Breeding Bird Survey (BBS) and Wetland Bird Survey (WeBS) as well as species-specific methods. Ed has also designed bespoke bird survey methods for specific project and assessment aims. He holds a Bird Identification Qualification (IDQ) issued by the Natural History Museum of London.

3.3.2. Stephen Foot MCIEEM has worked as a professional ecologist since 2005 and has holds Natural England licences to survey for great crested newts, hazel dormice, bats, barn owls, smooth snakes and sand lizards. Stephen has completed a range of breeding bird surveys comprising both diurnal and nocturnal surveys across the UK within a variety of habitat types.

3.4. Method and Report Qualification

3.4.1. All survey work and reporting was undertaken by experienced and qualified ecologists (see above), in accordance with the Code of Professional Conduct of the Chartered Institute of Ecology and Environmental Management (CIEEM).

3.4.2. All ecological surveys have an expected validity period owing to the tendency of the natural environment to change over time. This validity period varies from receptor to receptor and is also dependent on the degree of change in a site's management and overall landscape ecology.

3.4.3. This report does not purport to provide detailed, specialist legal advice. Where legislation is referenced, the reader should consult the original legal text, and/or the advice of a qualified environmental lawyer.

4. Results and Interpretation

4.1.1. This section sets out the results of the field surveys. The implications of the results are then explored with reference to current legislation and planning policy.

4.2. Overview

4.2.1. A total of 46 species of birds were recorded as confirmed or potentially breeding within the site or the immediate vicinity (such that territories may include at least part of the site) in 2021.

4.2.2. Birds recorded as confirmed, probable or possible breeding species within the site or nearby area (such that their territories likely overlap the site boundary) are listed in Table 2 together with an indication of the estimated number of pairs/territories in each breeding status category. For ease of reference, the estimated totals recorded in 2019 (for each individual species) are also shown. Bird species seen using or flying over the site for which no evidence of breeding on site (or in the immediate vicinity) in 2021 are listed in Table 3. In both cases, the conservations status of all species is also shown.

Table 2: Breeding Bird Species Recorded – Site and Immediate Surroundings[2]

Common Name	Species Name	Sch1[3]	S41[4]	Red[5]	Amber[6]	Status in Berkshire[7]	Confirmed	Probable	Possible	Grand Total	*Total in 2019*	*Change*	Notes
Blackbird	*Turdus merula*					Abundant resident and common winter visitor		3	10	13	*11*	*+2*	Widespread in hedgerows and woodland
Blackcap	*Sylvia atricapilla*					Common summer migrant, and increasing winter visitor		6	5	11	*9*	*+2*	Occasional in hedgerows and woodland
Barn owl	*Tyto alba*	✓				*Uncommon and localised resident*				*0*	*1*	*-1*	*Not recorded in 2021 (NB – 2019 record was just off-site)*
Blue tit	*Cyanistes caeruleus*					Abundant resident	*6*	16	7	29	*19*	*+10*	Widespread in hedgerows and woodland. May have benefitted from additional nest boxes as nest sites in at least some were recorded.
Buzzard	*Buteo buteo*					*Widespread resident following recent range expansion*				*0*	*1*	*-1*	*Not recorded as breeding on site in 2021 but birds regularly seen confirming still present locally.*
Carrion crow	*Corvus corone*					Abundant resident		1		1	*4*	*-3*	Probable nesting but commonly seen on site

[2] Species recorded in 2019 but not in 2021 are shaded in grey, with species recorded as potentially breeding in 2021 are shaded in red

[3] Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) granting legal protection from disturbance at or near an active nest site (see Appendix 1).

[4] Species of Principal Importance to the conservation of biodiversity in England as listed in response to Section 41 (S41) of the Natural Environment and Rural Communities Act 2006 (see Appendix 1)

[5] Bird of high conservation concern or 'red list' in Birds of Conservation Concern 4 (Eaton et al, 2015) (see Appendix 1)

[6] Bird of medium conservation concern or 'amber list' in Birds of Conservation Concern 4 (Eaton et al, 2015) (see Appendix 1)

[7] Based on Berkshire occurrence (1989-2011) from http://berksoc.org.uk/county-atlas/distribution-maps/distribution-maps-overview/

Common Name	Species Name	Sch1[3]	S41[4]	Red[5]	Amber[6]	Status in Berkshire[7]	Confirmed	Probable	Possible	Grand Total	*Total in 2019*	*Change*	Notes
Chiffchaff	*Phylloscopus collybita*					Common summer visitor and increasing winter visitor		1	2	3	*1*	*+2*	Present in central woodlands
Collared dove	*Streptopelia decaocto*					Widespread and common resident		1	2	3	*1*	*+2*	Scattered records of calling birds in western and southern parts of site
Canada goose	*Branta canadensis*					Widespread introduced resident	5			5	*4*	*+1*	Confirmed breeding in central wetland area as well as on River Thames (with birds visiting site)
Chaffinch	*Fringilla coelebs*					Abundant resident and winter visitor			3	3	*3*	*No change*	Scattered records in hedgerows and marginal habitat
Coot	*Fulica atra*					Common resident and winter visitor	1	1		2	*2*	*No change*	Confirmed and probable nesting pairs in central watercourse
Coal tit	*Periparus ater*					*Common resident*				*0*	*1*	*-1*	*Not recorded in 2021*
Dunnock	*Prunella modularis*		✓		✓	Widespread resident			2	2	*6*	*-4*	Scattered in southern hedgerow and central woodland
Egyptian goose	*Alopochen aegyptiaca*					Increasing introduced resident	1			1	*2*	*-1*	Confirmed and probable nesting pairs in central watercourse
Garden warbler	*Sylvia borin*					Common summer visitor and passage migrant			1	1	*0*	*+1*	Single record in south-western corner of site
Green woodpecker	*Picus viridis*					Common resident	1		3	4	*2*	*+2*	Group with young birds in southern hedgerow plus other records to west and in central woodland
Gadwall	*Mareca strepera*				✓	*Increasingly widespread winter visitor and scarce breeder*				*0*	*1*	*-1*	*Not recorded in 2021*

Common Name	Species Name	Sch1[3]	S41[4]	Red[5]	Amber[6]	Status in Berkshire[7]	Confirmed	Probable	Possible	Grand Total	*Total in 2019*	*Change*	Notes
Goldcrest	*Regulus regulus*					*Common resident and winter visitor*				*0*	*1*		*Not recorded in 2021*
Greylag goose	*Anser anser*				✓	Increasing introduced resident	1			1	*2*	*-1*	Confirmed (family group) in central wetland, with foraging birds also using grassland areas
Grey wagtail	*Motacilla cinerea*			✓		Uncommon resident and winter visitor			1	1	*0*	*+1*	Single record on White Brook toward south of site
Goldfinch	*Carduelis carduelis*					Common and widespread resident			3	3	*7*	*-4*	Occasional in hedgerows and woodland edge
Great spotted woodpecker	*Dendrocopus major*					Common resident		3	3	6	*3*	*+3*	Present in central and southern woodlands as well as hedgerows with trees in north and west
Great tit	*Parus major*					Abundant resident	1	14	5	20	*21*	*-1*	Widespread in hedgerows and woodland
Greenfinch	*Carduelis chloris*					Common, widespread resident and winter visitor			1	1	*0*	*+1*	Recorded on woodland edge in north of site
Jay	*Garrulus glandarius*					Common resident and winter visitor			2	2	*2*	*No change*	Using woodland and tree cover in south and west of site
Jackdaw	*Coloeus monedula*					Widespread and abundant resident		3	1	4	*3*	*+1*	Using southern woodland and trees on northern hedgerow
Kingfisher	*Alcedo atthis*	✓			✓	Uncommon resident	1			1	*1*	*No change*	Pair of birds seen around White Brook in south-east of site with juvenile seen, but nest site not found. Foraging birds also seen using wider area of brook and flying along Thames
Linnet	*Linaria cannabina*		✓	✓		*Common Resident and migrant*				*0*	*1*	*-1*	*Not recorded in 2021*

Common Name	Species Name	Sch1[3]	S41[4]	Red[5]	Amber[6]	Status in Berkshire[7]	Confirmed	Probable	Possible	Grand Total	*Total in 2019*	*Change*	Notes
Little owl	*Athene noctua*					Widespread but declining resident			1	1	*1*	*No change*	Single bird heard calling just off-site to west on one visit
Long-tailed tit	*Aegithalos caudatus*					Widespread and common resident		4		4	*6*	*-2*	Occasional in hedgerows and woodland
Mallard	*Anas platyrhynchos*				✓	Abundant resident and winter visitor	3	4	1	8	*9*	*-1*	Multiple pairs frequent around wetland area and along watercourse with young seen (at least three families)
Magpie	*Pica pica*					Abundant resident		2	1	3	*5*	*-2*	Occasional in hedgerows and woodland
Mistle thrush	*Turdus viscivorus*			✓		Widespread resident			3	3	*0*	*+3*	Scattered in northern and southern woodlands plus western hedgerow
Moorhen	*Gallinula chloropus*					Common and widespread resident and winter visitor		2	2	4	*5*	*-1*	Scattered in wetland and along White Brook
Mandarin	*Aix galericulata*					Localised and increasing introduced resident			2	2	*5*	*-3*	Pairs and individual birds seen in wetland and along White Brook
Mute swan	*Cygnus olor*				✓	Widespread resident	1			1	*1*	*No change*	Nesting pair on White Brook close to causeway
Nuthatch	*Sitta europaea*					Widespread resident		2	2	4	*5*	*-1*	Occasional in woodlands
Pheasant	*Phasianus colchicus*					Widespread, locally abundant resident		1	5	6	*5*	*+1*	Scattered around field and woodland/hedgerow margins
Reed bunting	*Emberiza schoeniclus*		✓		✓	Common resident and passage migrant		1		1	*0*	*+1*	Singing male recorded around White Brook close to causeway

Common Name	Species Name	Sch1[3]	S41[4]	Red[5]	Amber[6]	Status in Berkshire[7]	Confirmed	Probable	Possible	Grand Total	*Total in 2019*	*Change*	Notes
Reed warbler	*Acrocephalus scirpaceus*					*Localised summer visitor and passage migrant*			1	*1*	*1*	*No change*	Single record of bird singing beside causeway on one visit. Not recorded again so breeding in 2021 possible but very unlikely.
Robin	*Erithacus rubecula*					Abundant resident		9	2	11	*13*	*-2*	Widespread in hedgerows and woodland
Ring-necked parakeet	*Psittacula krameri*					Increasingly common but localised resident		2	4	6	*6*	*No change*	Frequently observed with potential breeding in trees/woodland in south, west and central parts of site
Skylark	*Alauda arvensis*		✓	✓		Common resident, passage migrant and winter visitor		4		4	*0*	*+4*	Singing birds in western and eastern fields as well as just beyond boundary to north (with birds possibly using on-site fields as part of territory)
Stock dove	*Columba oenas*				✓	Common resident and winter visitor		1	2	3	*10*	*-7*	Scattered in hedgerows and woodland
Starling	*Sturnus vulgaris*		✓	✓		*Common resident and winter visitor*				*0*	*1*	*-1*	*Not recorded as breeding on site in 2021*
Song thrush	*Turdus philomelos*		✓	✓		Common resident and winter visitor		4	4	8	*8*	*No change*	Widespread in hedgerows and woodland
Sparrowhawk	*Accipiter nisus*					Widespread resident and winter visitor			1	1	*0*	*-1*	Bird seen in southern woodland
Treecreeper	*Certhia familiaris*					Common resident		1	1	2	*2*	*No change*	Observed in northern and southern woodland
Tawny owl	*Strix aluco*				✓	Widespread resident		1		1	*2*	*-1*	Adult birds seen in southern woodland
Water rail	*Rallus aquaticus*					Uncommon winter visitor, rare in summer			1	1	*0*	*+1*	Bird calling in pond in northern woodland

Common Name	Species Name	Sch1[3]	S41[4]	Red[5]	Amber[6]	Status in Berkshire[7]	Confirmed	Probable	Possible	Grand Total	*Total in 2019*	*Change*	Notes
Woodpigeon	*Columba palumbus*					Abundant resident and winter visitor		3	5	8	*9*	*-1*	Abundant across site with probable or possible nesting in multiple locations in hedgerows/trees and woodland
Wren	*Troglodytes troglodytes*					Abundant resident and winter visitor		22	6	28	*27*	*+1*	Widespread and numerous in hedgerows and woodland
Yellowhammer	*Emberiza citrinella*		✓	✓		Common resident			1	1	*0*	*+1*	Single bird seen on north-eastern hedgerow

Table 3: Bird Species Observed for which No Evidence of Nesting or Potential Nesting on Site was Recorded

Common Name	Species Name	Sch1[8]	S41[9]	Red[10]	Amber[11]	Status in Berkshire[12]	Notes
Buzzard	*Buteo buteo*					Widespread resident following recent range expansion	Not recorded as breeding on site in 2021 but birds regularly seen confirming still present locally.
Common tern	*Sterna hirundo*				✓	Common passage migrant and regular summer visitor	Flying over east of site only
Cormorant	*Phalacrocorax carbo*					Common winter visitor, which first bred in 1996	Flying over on occasion
Green sandpiper	*Uncommon passage migrant and winter visitor*	✓			✓	Uncommon passage migrant and winter visitor	Single record on central wetland (passage bird)
Grey heron	*Ardea cinerea*					Locally common resident and winter visitor in small numbers	Flying over and occasional foraging on White Brook/wetland areas

[8] Species listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) granting legal protection from disturbance at or near an active nest site (see Appendix 1).
[9] Species of Principal Importance to the conservation of biodiversity in England as listed in response to Section 41 (S41) of the Natural Environment and Rural Communities Act 2006 (see Appendix 1)
[10] Bird of high conservation concern or 'red list' in Birds of Conservation Concern 4 (Eaton et al, 2015) (see Appendix 1)
[11] Bird of medium conservation concern or 'amber list' in Birds of Conservation Concern 4 (Eaton et al, 2015) (see Appendix 1)
[12] Based on Berkshire occurrence (1989-2011) from http://berksoc.org.uk/county-atlas/distribution-maps/distribution-maps-overview/

Common Name	Species Name	Sch1[8]	S41[9]	Red[10]	Amber[11]	Status in Berkshire[12]	Notes
Little egret	*Egretta garzetta*					Uncommon visitor and rare breeding species	Occasional foraging in wetland area
Red kite	*Milvus milvus*	✓				Widespread resident following a recent re-introduction	Regularly seen flying over – likely nesting nearby, but no evidence on or near site in 2021. Activity seemed to be focussed in north/north-east of site and horse paddocks beyond plus over woodland in Cliveden estate to east (as in 2019)
Snipe	*Gallinago gallinago*				✓	Widespread winter visitor in suitable habitat, formerly bred	Recorded during early part of season (peak count 15 birds) indicating passage birds/late winter visitors
Swift	*Apus apus*				✓	Common summer visitor	Occasionally seen flying over site
Teal	*Anas crecca*				✓	Widespread winter visitor and rare summer visitor	Male and female birds seen in wetland area in early part of season (peak count of 26 birds) but not noted later suggesting these were late wintering/passage birds

4.2.3. As in 2019, the overall assemblage of birds recorded in 2021 was dominated by common and widespread species (e.g. thrushes, tits, robins and wrens, etc.). However, the assemblage included thirteen species of varying conservation concern, including one specially protected (Schedule 1) species; the kingfisher. The assemblage was also still found to be dominated by species with generalist habitat requirements (i.e. species using a mixture of woodland, tree, scrub and other widespread habitats). However, the overall assemblage was diversified by the presence of species more strongly associated with the woodland areas on site (e.g. woodpeckers, nuthatch, treecreeper and tawny owls) as well as species using the wetland areas in the central/southern parts of the site, such as ducks, geese and swans.

4.2.4. Many species were recorded in very similar numbers in 2021 compared to the 2019 survey results. However, there were some species that were absent (not recorded) in 2021 (that had been recorded in 2019) and others that were only recorded as breeding species in 2021. These are discussed in the following paragraphs. Of the 38 species recorded in both 2019 and 2021, 22 had higher estimated numbers of pairs/territories or no change in 2021 compared to the 2019 results with the estimated number of pairs/territories of the remaining 16 species being lower in 2021 than in 2019. Natural fluctuation in numbers of pairs would be expected, with the weather conditions in spring 2021 (dry April followed by a cold and wet May) having resulted in widespread documented failure of early clutches in many species (especially those reliant on invertebrate prey such as tits) within the UK. Differences in detectability and localised choice of nesting sites would also be factors influencing numbers recorded. However, overall there were no clear patterns in the results of the survey to indicate that any specific species had been significantly positively or negatively affected by any changes in use of the site with the exception of skylark which is discussed below.

4.2.5. Species recorded in 2021 (as confirmed or potential breeding species) included garden warbler, grey wagtail, greenfinch, reed bunting, skylark, sparrowhawk, water rail and yellowhammer. The most notable of these was the records of up to four pairs of skylarks (based on observed singing males). This included two potential pairs in the eastern field with one in the western field and another close-by just off-site to the north (although this bird may also use the site given proximity). Skylarks were recorded locally in 2019 but only seen flying over the site, so current conditions appear to be attractive to this species (although breeding success, or not, could not be confirmed). Single potential pairs of grey wagtail, reed bunting and yellowhammer (all species of conservation concern) also added to the list, although in the case of grey wagtail and yellowhammer in particular these may just have been visiting the site given single records. A calling water rail in the pond within woodland in the north of the site was also an addition of note given the status as a rare summer resident in Berkshire. It is possible that this species is present along the White Brook but may have been undetected due to its cryptic behaviour. However, the calling bird does suggest breeding within the site.

4.2.6. No barn owls were recorded using the site in 2021 for breeding or foraging/hunting despite a likely nest site having been recorded in 2019 (just off-site to the north-east). It is possible this species still occurs locally and may use the site on occasion as part of a wider hunting range, although no evidence of this was recorded in 2021. Tawny owls were still present within the site with birds regularly encountered in the plantationp woodland in the south-east area. Nesting was not confirmed in 2021 although the presence of regular territorial owls suggests this is still

likely to be a breeding species within the site. In 2019, young tawny owls were recorded around the mobile phone mast in the small woodland toward the north of the site. No tawny owl activity was recorded here in 2021 despite nest boxes for this species having been installed here. Similarly, little owls were regularly recorded along the north-western boundary in 2019 but no evidence of this species was recorded here in 2021, with only a single record of a calling little owl just off-site to the west in 2021.The reasons why little owls are no longer present along the northern boundary are unclear but may be due to changes in management off-site (although this was not obvious) or changes to availability of nesting sites locally.

4.2.7. Kingfishers were confirmed as breeding on site in 2021 with a juvenile bird seen on visit 4. Adult kingfishers were regularly seen with activity focussed on the edge of the wet woodland and along the White Brook toward the south of the site. Individuals were also seen flying to and from the River Thames to the east as well as along the Thames. The exact location of the nest site was not established but may have been in the roots of a fallen tree on the edge of the wet woodland area.

4.2.8. Overall, the wetland and woodland areas plus associated corridors of trees, hedgerows and scrub (particularly through the central part of the site) were still found to be of particular value to breeding birds in 2021. However, a change from 2019 was the presence of low numbers of skylarks using the open grassland areas in 2021 with probable breeding (or at least attempted breeding) based on repeated observation and presence of singing males.

5. Outline Impacts and Recommendations

5.1. Overview

5.1.1. This section explores potential adverse impacts on breeding bird species that may arise through the ongoing change in use of the site as public open space including proposed changes such as on-site car-parking in the west of the site and the possible installation of a new boardwalk through the wet woodland area in the south-east. This is followed by recommendations to avoid, reduce or mitigate/compensate any potential adverse impacts. Recommendations for ongoing management or enhancement are also discussed.

5.2. Potential Adverse Impacts and Recommendations

5.2.1. The continuing use of the site as public open space may lead to a variety of adverse impacts on breeding birds such as:

- Increased disturbance or predation risk of nesting birds via increased number of visitors (particularly those with dogs).
- Loss or change in quality/amount of suitable nesting habitat in willow woodland if option to create a boardwalk through this area is pursued.
- Loss or change in quality/amount of suitable nesting habitat through changes in management.
- Risk of killing/injury of birds (most likely young birds) or damage/destruction of active nests and eggs through habitat clearance/management works (e.g. to facilitate access or ongoing maintenance of features such as trees or hedgerows).

5.2.2. The above potential impacts, plus recommendations for how they can be overcome or limited are explored below.

Disturbance and predation risk

5.2.3. It is clear that since parts of the site were opened to the public in 2019, the numbers of public recreational visitors to the site has increased with many users (based on incidental observation during the surveys) being dog walkers. The 2021 survey results do not show any clear evidence of negative impacts on breeding bird species associated with this use. In fact, the presence of species such as skylark suggests conditions for this species have improved. However, this may be largely due to a cessation of grazing and management of the fields as open grassland. In order to limit any ongoing risk of significant disturbance or predation of nesting birds (particularly ground nesting species such as skylark), mitigation or management measures are recommended. This could include the following:

- The provision of visitor information to draw attention to the fact that ground nesting species may be present. This could include a seasonal 'dogs on lead' instruction within areas used by species such as skylark.

- The creation of clear pathways via seasonal mowing to guide visitors to certain areas of the grasslands whilst leaving other areas less accessible. In practice the existing focus of visitor activity is around the margins of the grassland (western field) with access to the eastern field being restricted (by fencing) to the northern edge and Thames path. This already helps to guide visitors away from areas used by skylarks.

5.2.4. Despite barn owls not being recorded as likely breeding in 2021, it is still possible that this species could utilise the nest boxes present across the site in future years. Therefore, the legislation protecting this species from disturbance will need to be taken into account. Paths and access should ideally be prevented from within at least 50m of all barn owl box locations. This should be possible as field margins are already fenced, although mown paths may need to be cut with this in mind.

5.2.5. At present, the area with a focus of kingfisher activity (wet woodland edge and White Brook in the south-east of the site) is largely inaccessible to public visitors. This may change if the option to install a boardwalk through this woodland is taken. The route of any boardwalks should therefore be carefully planned to ensure areas adjacent to the White Brook and on the edge of the wetland further north remain largely undisturbed. Any potential nesting sites that could be used by kingfishers (e.g. fallen tree roots) should be avoided. In addition, visitors and their dogs should be restricted to the boardwalk itself by fencing either side to avoid the creation of ad hoc access paths through the woodland where drier ground conditions exist. Although unlikely to be required as mitigation (assuming potential nesting features are avoided) a longer-term option could be to create new potential nest sites such as earth banks, possibly with bespoke nesting tubes installed.

5.2.6. It is understood that RBWM are also exploring the option of opening the existing causeway area across the White Brook (just north of the wet woodland) for use by public visitors in summer only. Whilst the causeway itself is not regularly used by breeding birds, the wetland areas and sections of the White Brook either side are used so this could lead to some localised disturbance without mitigation. In order to reduce this risk, and to prevent issues with dogs accessing the brook and wetland areas, the route across the causeway should be fenced either side. In addition, some screening vegetation (e.g. new native hedgerow planting) would help to reduce potential disturbance caused by the presence of dogs. Encouraging the growth of reeds and other wetland vegetation in the areas either side of the causeway would also provide screening as well as additional nesting habitat. The causeway should also only be available for use between April and September inclusive to avoid disturbance of overwintering birds.

Habitat Loss or Change

5.2.7. The ongoing use of the site by members of the public and associated management is not expected to result in significant changes to the habitats on site, although some small-scale changes may occur (e.g. creation of a small carpark on the western edge or cutting of vegetation for access maintenance). These are unlikely to result in significant adverse impacts as features such as car-parking will only affect small areas of limited value to birds, with footpaths anticipated to continue being mown grassland and following similar routes.

5.2.8. If the option to install a new boardwalk in the wet woodland in the south-east of the site is pursued, this could result in some localised changes to the woodland such as felling of some trees. This would need to be carefully planned to avoid changing the character of the woodland and potentially reducing its suitability as nesting habitat for species such as tawny owls which favour denser woodland. However, at present the woodland consists of rows of dense planted willows with an understorey dominated by common nettle. Selective felling of the woodland to create a boardwalk could therefore provide an opportunity to open up areas of the woodland to promote a more diverse ground flora (with targeted management to reduce nettle cover) and create increased woodland edge or 'glade' conditions. Areas of dense woodland should be preserved, but the opening up of some parts could benefit bird species by diversifying the woodland and creating new foraging and nesting opportunities. If appropriate, some denser willow (e.g. in drier areas) could be replaced with other native tree and shrub species such as oak, cherry, alder, elder, hawthorn and blackthorn.

Killing/Injury of Birds or Damage/Destruction of Active Nests and Eggs

5.2.9. In order to reduce the risk of killing/injury of birds or damage/destruction of active nests and eggs during ongoing maintenance, any required cutting or clearance of suitable nesting habitat (e.g. trees, shrubs or other dense vegetation) should be undertaken outside the breeding season; i.e. it should be completed within the period September to February inclusive. Where suitable nesting habitat (e.g. trees and shrubs or other dense vegetation) needs to be removed outside this period for any reason, the areas affected should first be checked by an ecologist for evidence of active nests, with any identified being left intact (within a suitable buffer of vegetation) until the young have fledged or the nest is naturally no longer in use.

5.3. Potential Positive Impacts and/or Opportunities for Enhancement

5.3.1. Ongoing management of the site as public open space presents some opportunities for positive impacts on breeding bird species through habitat enhancement. Options are discussed below.

5.3.2. The presence of low numbers of skylark in 2021 suggests that the site is beginning to provide suitable conditions for this species. However, opportunities for skylark and other ground nesting species could be improved via appropriate management. At present the grassland areas become tall through the summer. Management by mowing should aim to create swards of around 20cm to 50cm in height during the breeding season with a greater diversity of herb species and preferably areas of short or even bare ground. Cutting should still be avoided in the period April to July to avoid the risk of destroying nests or eggs or killing/injuring young. However, scarifying some areas (on rotation) over winter with mowing in early spring and late summer onwards could help to create a more diverse grassland structure. This could also be achieved by mowing strips or blocks within the grassland in spring to create areas of shorter grass. It is preferable to encourage natural regeneration of grassland habitats from the seedbank through management as a meadow. However, the addition of species such as yellow rattle via seeding may be beneficial as this can help to reduce the dominance of grasses. Arisings from mowing should also be removed as this will help to reduce nutrient levels over time, favouring a more diverse mixture of grasses and herbs. As discussed above under disturbance, the provision of public information/signs highlighting the presence of species such as skylarks

and the reasons for management are recommended. This would particularly be the case if strips or blocks are cut which may otherwise by seen as accessible areas.

5.3.3. Other options for enhancement that could benefit bird species may include (but need not be limited to):

- The provision of additional nest boxes on trees around the site. This could include new little owl boxes and boxes for generalist species such as tits. Boxes for species not currently known to breed on site would be particularly beneficial; these could include boxes for species such as kestrel (*Falco tinnunculus*), willow tit (*Poecile montanus*), marsh tit (*Poecile palustris*) and starling (*Sturnus vulgaris*). A range of box designs are commercially available or could be built/installed as part of community engagement projects.

- The wetland area could be managed (at least in part) to create a more stable pool or scrape in the southern/central part of the site. This could involve limited earthwork to create a slightly deeper ponded area with graded banks creating shallow margins and areas of open mud following winter inundation. Encouraging the natural colonisation of marginal vegetation around the edges (e.g. reed and other native species) would provide additional nesting cover for wildfowl and species such as reed warbler and sedge warbler (*Acrocephalus schoenobaenus*) as well as providing screening along the causeway if this area is opened.

- The management of the pond in the north-west of the site (within woodland) to maintain a mixture of open water and marginal vegetation habitats would benefit a range of wetland bird species as well as preventing loss of the pond to scrub succession over time.

- Planting of new sections of native hedgerow such as where fencing has been installed or along either side of the causeway would provide additional nesting areas for a range of species as well as screening.

6. Conclusion

6.1.1. The breeding bird survey undertaken at the Battlemead Common site in 2021 revealed the presence of a variety of breeding bird species with a similar assemblage to that recorded in 2019. The assemblage was still dominated by common and widespread species, but species associated with woodland and wetland habitats, as well as some species of conservation concern, were also present. The overall range of species in 2021 differed slightly from 2019 with species such as barn owl and gadwall not recorded in 2021 but others such as reed bunting, skylark and water rail being added. The presence of skylark as a probable breeding species (albeit with breeding success not known) was one of the more notable observations as this species could benefit from targeted management.

7. References

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Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) *Birds of Conservation Concern 4: the population status of bird in the United Kingdom, Channel Islands and Isle of Man*. British Birds 108, 708–746

7.1. Websites

http://berksoc.org.uk/county-atlas/distribution-maps/distribution-maps-overview/

8. Figures

Table 4: Species Code Key

Common Name	Species Name	Species Code
Blackbird	*Turdus merula*	B
Blackcap	*Sylvia atricapilla*	BC
Blue tit	*Cyanistes caeruleus*	BT
Carrion crow	*Corvus corone*	C
Chiffchaff	*Phylloscopus collybita*	CC
Collared dove	*Streptopelia decaocto*	CD
Canada goose	*Branta canadensis*	CG
Chaffinch	*Fringilla coelebs*	CH
Coot	*Fulica atra*	CO
Dunnock	*Prunella modularis*	D
Egyptian goose	*Alopochen aegyptiaca*	EG
Garden warbler	*Sylvia borin*	GW
Green woodpecker	*Picus viridis*	G
Greylag goose	*Anser anser*	GJ
Grey wagtail	*Motacilla cinerea*	GL
Goldfinch	*Carduelis carduelis*	GO
Great spotted woodpecker	*Dendrocopus major*	GS
Great tit	*Parus major*	GT
Greenfinch	*Carduelis chloris*	GR
Jay	*Garrulus glandarius*	J
Jackdaw	*Coloeus monedula*	JD
Kingfisher	*Alcedo atthis*	KF
Little owl	*Athene noctua*	LO
Long-tailed tit	*Aegithalos caudatus*	LT
Mallard	*Anas platyrhynchos*	MA
Magpie	*Pica pica*	MG
Moorhen	*Gallinula chloropus*	MH
Mandarin	*Aix galericulata*	MN
Mute swan	*Cygnus olor*	MS
Nuthatch	*Sitta europaea*	NH
Pheasant	*Phasianus colchicus*	PH
Reed bunting	*Emberiza schoeniclus*	RB
Robin	*Erithacus rubecula*	R
Ring-necked parakeet	*Psittacula krameri*	RI
Skylark	*Alauda arvensis*	S
Stock dove	*Columba oenas*	SD
Song thrush	*Turdus philomelos*	ST
Sparrowhawk	*Accipiter nisus*	SH
Treecreeper	*Certhia familiaris*	TC
Tawny owl	*Strix aluco*	TO
Woodpigeon	*Columba palumbus*	WP
Wren	*Troglodytes troglodytes*	WR
Yellowhammer	*Emberiza citrinella*	Y

Figure 1a: Breeding bird survey results - south-east of site

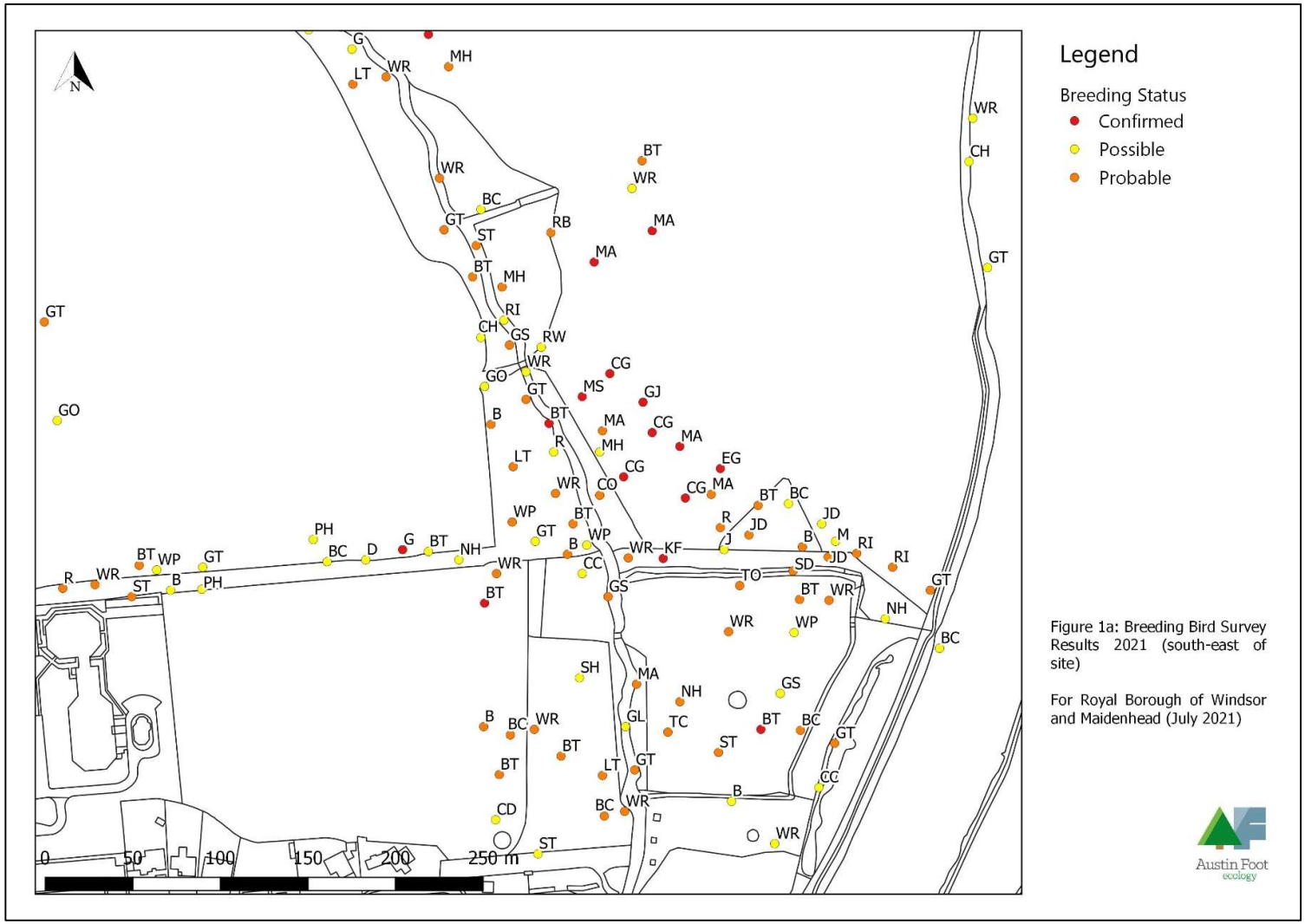


Figure 1b: Breeding bird survey results - north-east of site

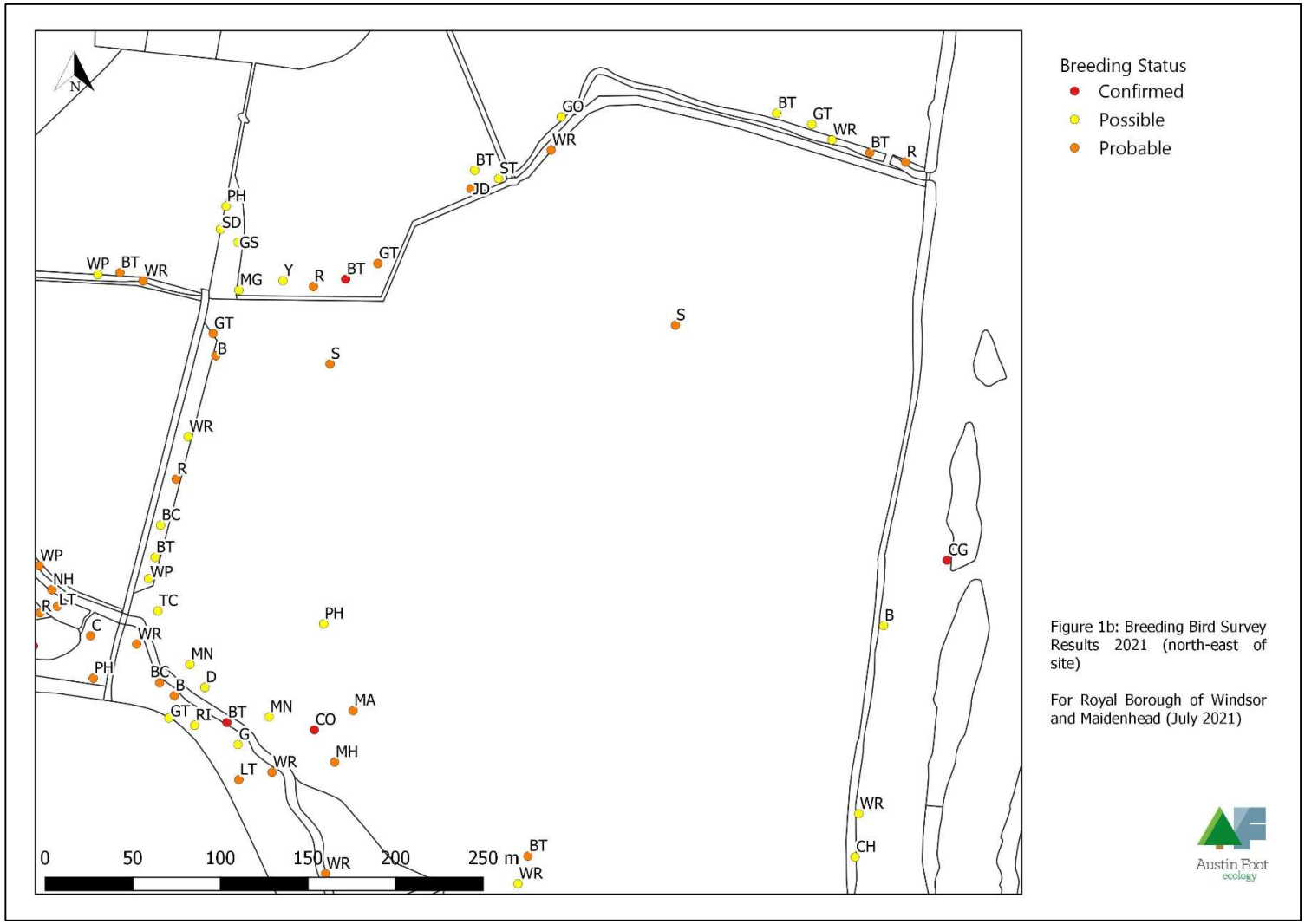
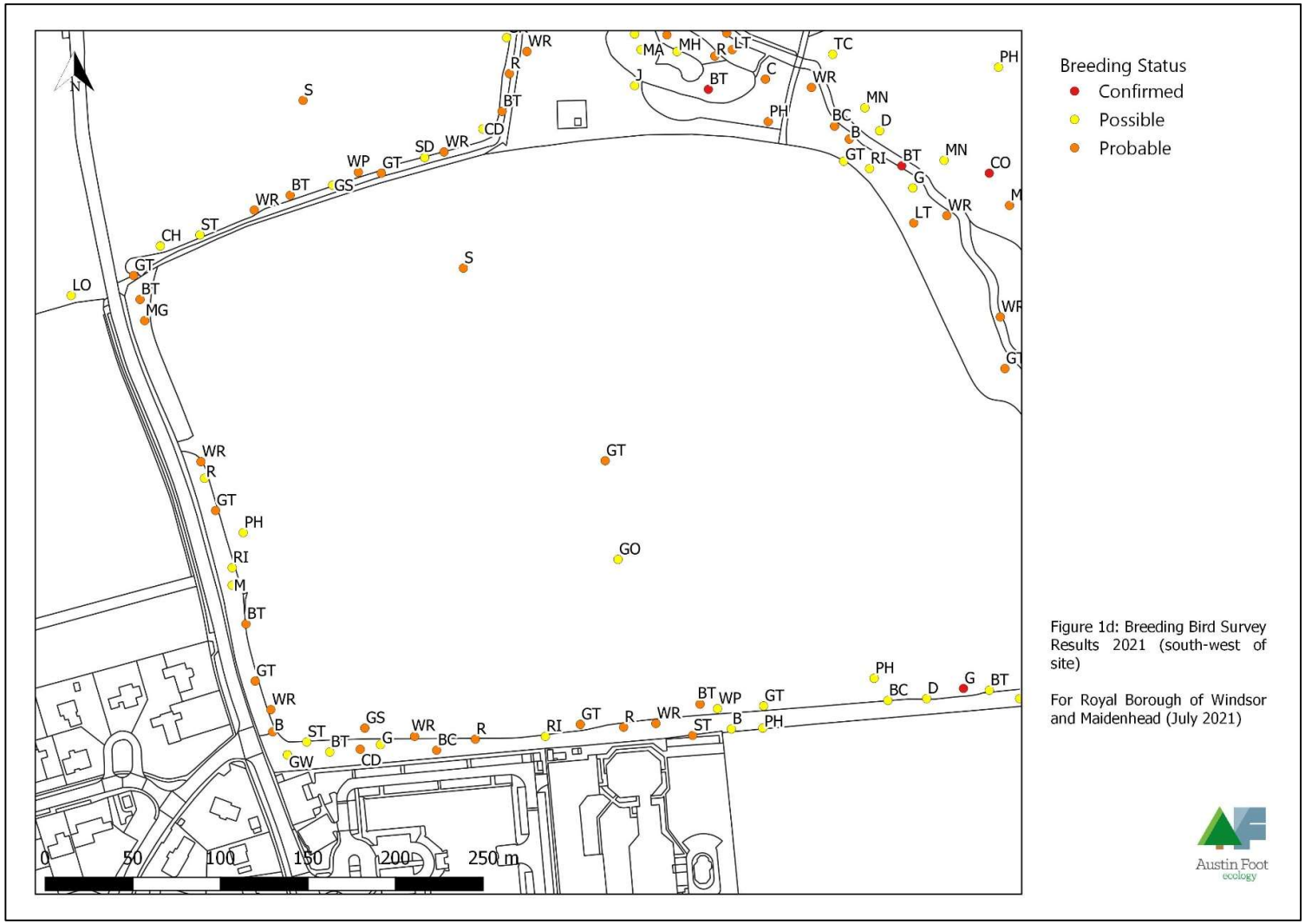


Figure 1c: Breeding bird survey results – north-west of site

Figure 1d: Breeding bird survey results - south-west of site



9. Appendix 1 – Relevant Legislation and Planning Policy

9.1.1. This section briefly summarises the relevant national and local planning policies and legislation pertaining to habitats and species mentioned within this report. Please note that the following text does not constitute legal advice.

9.2. National Planning Policy Framework

9.2.1. The National Planning Policy Framework (NPPF) was published in February 2019. This document states that:

9.2.2. '*Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives)… an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy'*.

Conserving and Enhancement of the Natural Environment

9.2.3. Section 15 relates to: Conserving and Enhancement the Natural Environment. This states:

9.2.4. '*Planning policies and decisions should contribute to and enhance the natural and local environment by:*

9.2.5. a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)

9.2.6. b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;

9.2.7. c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;

9.2.8. d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;

9.2.9. e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and

9.2.10. *f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate*.

Habitats and Biodiversity

9.2.11. To protect and enhance biodiversity and geodiversity, plans should:

- Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

9.2.12. *When determining planning applications, local planning authorities should apply the following principles*:

- if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons58 and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

9.3. The Royal Borough of Windsor and Maidenhead Local Plan

9.3.1. A new Borough Local Plan was submitted for review on 30th June 2017. The following policies are of relevance to biodiversity and nature conservation.

POLICY NR 3 - Nature Conservation

9.3.2. 1. *Designated sites of international and national importance, will be maintained, protected and enhanced. Protected species will be safeguarded from harm or loss.*

9.3.3. 2. Development proposals:

- a. Will be expected to demonstrate how they maintain, protect and enhance the biodiversity of application sites including features of conservation value such as hedgerows, trees, river corridors and other water bodies and the presence of protected species
- b. Will avoid impacts on habitats and species of principal importance, such as those listed under Section 41 of the NERC Act 2006
- c. Either individually or in combination with other developments, which are likely to have a detrimental impact on sites of local importance, or compromise the implementation of the national, regional, county and local biodiversity actions plans, will not be permitted unless it can be demonstrated that the benefits clearly outweigh the need to safeguard the nature conservation value of the site
- d. Will be required to apply the mitigation hierarchy to avoid, mitigate or as a last resort compensate for any adverse biodiversity impacts, where unavoidable adverse impacts on habitats and biodiversity arise. Compensatory measures involving biodiversity offsetting will be considered as a means to prevent biodiversity loss where avoidance and mitigation cannot be achieved

9.3.4. *3. Development proposals will be expected to identify areas where there is opportunity for biodiversity to be improved and, where appropriate, enable access to areas of wildlife importance. Development proposals shall also avoid the loss of biodiversity and the fragmentation of existing habitats, and enhance green corridors and networks*

9.4. National Legislation

Nesting Birds

9.4.1. All nesting birds are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs.

Schedule 1 Bird Species

9.4.2. Bird species listed on Schedule 1 of the WCA (e.g. barn owl and black redstart) receive additional protection from disturbance at or near an occupied nest site. Schedule 1 of the Act makes it an offence to intentionally or recklessly disturb this species while it is building a nest or is in, on or near a nest containing eggs or young. It also makes it an offence to intentionally or recklessly disturb dependent young of this species.

Natural Environment and Rural Communities Act 2006

9.4.3. The NERC Act 2006 reinforces the duty upon all public authorities, including planning authorities, to have regard for the conservation of biodiversity when discharging their duties. The Act refines the definition of biodiversity conservation, stating that it includes restoring or enhancing a population or habitat. Section 41 of the NERC Act requires the Secretary of State to list habitats and species of principal importance (HPIs and SPIs) for the conservation of biodiversity in England. The habitats and species listed in accordance with Section 41 largely replicate those previously listed on the UK Biodiversity Action Plan (BAP) which occur in England

(however there are exceptions). A variety of bird species are listed as SPIs, including the dunnock and song thrush (among others).

9.4.4. Section 40 of the NERC Act states that "every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity". This is sometimes referred to as the 'biodiversity duty'.

9.5. Other Definitions of Conservation Status

Red and Amber Lists

9.5.1. The UK's leading bird conservation organisations reviewed the latest information on the status of birds in the UK and elsewhere in their range to update the status of birds which occur regularly in the UK. This is presented as the Birds of Conservation Concern 4 (Eaton et al, 2015), comprising a 'red list' of species of high conservation concern, an 'amber' list of species of moderate conservation concern, with other species that do not qualify under red or amber list criteria on the green list. To qualify on the red list species may be listed as globally threatened by IUCN, have suffered a historical decline without substantial recent recovery, or a decline of more than 50% in breeding or non-breeding populations, or a 50% contraction in breeding range over 25 years (or the longer term). Amber list species can be those listed as Species of European Conservation Concern, those which have suffered a historical decline but shown significant recent recovery, have shown a decline of between 25 and 50% in breeding or non-breeding populations, or a contraction in breeding range of between 25 and 50% over 25 years (or the longer term) or be rare or localised breeders in the UK, or be species for which 20% of the breeding or non-breeding population is found in the UK.

9.5.2. Red or amber listing does not confer additional protection under legislation or planning policy; however, it provides a basis for targeting conservation effort and is a widely used resource for interpreting bird populations.

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Battlemead Common, Maidenhead, Berkshire – Willow Woodland

Otter and Water Vole Survey

For Royal Borough of Windsor and Maidenhead

September 2021

Project Number	0286.08
Client Reference	Royal Borough of Windsor and Maidenhead
Project/Site Name	Battlemead Common, Maidenhead
Report Title	Otter and Water Vole Survey

Version Number	Date	Author	Reviewer
001	23rd September 2021	Stephen Foot	Ed Austin

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Any recommendation, opinion or finding stated in this report is based on circumstances and facts as they existed at the time that Austin Foot Ecology undertook the work.

Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a qualified legal professional should be sought.

1. Non-technical Summary

1.1.1. The Royal Borough of Windsor and Maidenhead (RBWM) are exploring the possibility of creating a boardwalk and footpath in the south-east of Battlemead Common (hereafter referred to as "the Site") to create a circular walking route. The Site was identified during an ecological walkover survey of the wider Battlemead Common area as having the potential to support both otters and water voles. Austin Foot Ecology was commissioned by RBWM to undertake targeted surveys for these species to determine any ecological constraints and opportunities associated with the proposals and the Site.

1.1.2. Signs of otters (otter spraint) were identified on roots/rocks adjacent to the River Thames in the east with numerous potential "laying-up" Sites (otter resting places) identified within the woodland within the Site (in tree roots, log piles, etc.). Trail cameras installed on trees adjacent to SW1 in the east of the Site and along the White Brook recorded otters using SW1 on two occasions between June and September 2021.

1.1.3. The White Brook in the west of the Site supported dense marginal vegetation offering potentially suitable foraging and sheltering habitat for water voles. However, no signs of water voles were identified along the White Brook. Images of North American mink were captured on the trail cameras installed on SW1. This species is a significant water vole predator whose presence has contributed to declines of this species through the UK. The presence of mink is likely the primary reason for water voles being found to be absent at the Site. However, fragmentation of habitats, lack of commuting local routes and habitat loss elsewhere are also likely to be important factors influencing the distribution of water voles locally and their colonisation of the Site.

1.1.4. Opening up of the woodland including the construction of a boardwalk has the potential to deter otters from using the Site in future with the possible destruction off of potential resting places also occurring as a result of proposals. In light of this, it is recommended that opening this area to the public and dogs be avoided with management of habitats in this area also being undertaken sensitively. The creation of new large log and brash piles would enhance this area for otters providing additional potential laying up Sites/resting places.

1.1.5. Given that water voles were found to be absent, no impacts upon water voles are predicted to occur as a result of proposals. The creation of new riparian habitat (reed planting etc.) would enhance the water course/wetland areas for this species. However, in order to make the Site suitable for this species it would be necessary to control the presence of north American mink with ongoing control likely to be required in order to keep the numbers of mink in check, particularly given the close proximity of the River Thames and ease of colonisation of this species from nearby areas. This would be a costly and labour-intensive measure if pursued and may not be viable as a result.

2. Introduction

2.1. Project Description

2.1.1. The Site that is the subject of this report predominantly comprises parcels of woodland in the south-eastern corner of Battlemead Common. The central grid reference is SU 90592, 83577. The Site is bordered to the east by a public footpath and the River Thames, to the west by an Environment Agency flood defence bund with Maidenhead Court and White Brook Business Park beyond, to the north by wetland habitat and grassland within Battlemead Common and to the south by woodland and residential development. The Site covers an area of approximately 3.15ha comprising semi-natural broadleaved woodland, plantation woodland, a stretch of the White Brook, wetland habitat (including a waterbody) and a small area of grassland and tall ruderal vegetation in the north-west. The Site boundary is shown in Figure 1.

2.1.2. The Royal Borough of Windsor and Maidenhead (RBWM) are exploring options to install a pathway/boardwalk (including the reinstatement of a bridge across the White Brook) through the plantation woodland to allow for a circular route to be created around the wider Battlemead Common Site. The boardwalk is to be fenced (with dog-proof fencing) either side with fencing also proposed around the perimeter of the Site. This option is being pursued as an alternative to avoid the need for crossing the causeway over the brook to the north (given sensitivities to over-wintering birds). The proposed route of the boardwalk and footpath is shown in Figure 3.

2.2. Ecological Context

2.2.1. A number of ecological surveys have been undertaken on the wider Battlemead Common Site and those that are of relevance to this study are summarised below.

2.2.2. An Ecological Appraisal consisting of an ecological desk study, extended Phase 1 habitat survey, River Corridor Survey (RCS) and Habitat Suitability Index (HSI) assessment of waterbodies within the wider Battlemead Common area was undertaken in May 2019 (Austin Foot Ecology, 2019a). The desk study highlighted the presence of a number of otter (*Lutra lutra*) records. The closest of these were records of otter spraint from the banks of the River Thames on the eastern boundary of the Site. Evidence of use of the Brook corridor by North American mink (*Neovision vision*) was also noted during the Phase 1 habitat survey. The ecological appraisal concluded that Battlemead Common had the potential to be used on occasional basis by otters with the willow woodland offering some potential sheltering opportunities. The presence of water voles (*Arvicola amphibius*) was thought to be likely absent given the signs of north American mink noted (a significant predator of water voles (Austin Foot Ecology, 2019).

2.3. Summary of Relevant Legislation

2.3.1. The otter is fully protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended). Further details are provided in Appendix 3; however, in summary otters themselves are protected from killing, injury and disturbance. It is also illegal to damage, destroy or obstruct access to a breeding Site or resting place used by this species. This protection can be set-aside (derogation) through the issuing of licences. The licences in England are currently determined by Natural England (NE)

for development works. Note that licences will only be granted where certain requirements are met; further details are provided in Appendix 4.

2.3.2. In addition, otters are listed as species of principal importance to the conservation of biodiversity in England. This list was drawn up in response to the requirements of section 41 of the Natural Environment and Rural Communities (NERC) Act 2006; it is often referred to as the 'S41 list'. The S41 list is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under the related section 40 of the NERC Act, to have regard to the conservation of biodiversity in England, when carrying out their normal functions. The presence of a S41 species on Site is therefore a material consideration in the planning process.

2.3.3. The water vole and its habitats are protected by the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to intentionally or recklessly:

- Kill, injure or take water voles;
- Possess or control live or dead water voles;
- Damage, destroy or obstruct access to any shelter or place which water voles uses for shelter or protection; or
- Disturb water voles while they are using such a place.

2.3.4. Although the law provides strict protection to water voles and their burrows, it also allows this protection to be set aside (derogation) through the issuing of licences. The licences in England are currently determined by Natural England (NE). In addition, water voles are also listed as species of principal importance to the conservation of biodiversity in England (see above). Further details are provided in Appendix 3.

2.4. Aims of Study

2.4.1. Austin Foot Ecology was commissioned to undertake otter and water vole surveys on the Site. The main aims of this survey and subsequent report are to:

- Detail the methods used during the otter and water vole surveys
- Present the results of the otter and water vole surveys;
- Set out the legislative protection afforded to both otters and water voles; and
- Present a preliminary assessment of any potential ecological impacts of the proposals based on the survey findings and current proposals;
- Provide recommendations for any further surveys if considered necessary; and
- Provide recommendations on potential mitigation and compensation to ensure that the proposals will remain acceptable in legislative terms.

3. Method

3.1. Survey Area

3.1.1. The Survey Area (Site) extended from the bank of the River Thames in the east to the EA flood defence bund in the west. The northern boundary followed the woodland edge with the southern boundary running along a tributary of the White Brook (dry at the time of survey) (see Figure 1). A 200m stretch of the bank of the adjacent River Thames, Waterbody SW1 in the east of the woodland and a stretch of the White Brook to the west (approx. 200m) was included in the assessment.

3.2. Otter survey

3.2.1. The otter survey conformed to standard methodology for otter survey (Chanin, 2003). Signs that otter may be present were searched for including characteristic spraints (droppings), holts, resting places, otter paw prints and pathways through vegetation along or down the bank (slides). Particular attention was paid to crossing points and bridges during the course of the otter survey as these can be focus of activity. The survey visits were undertaken on 8th June and 6th September 2021 (see below).

3.2.2. In addition, a digital trail-cameras were used in an attempt to obtain photographs of otters using the Site and to gain a greater understanding of any use of the Site by this species. A total of four cameras were used and were installed in four locations. The locations are listed below:

- Camera 1: Installed on a tree monitoring a log floating in SW1 in the east of the Site;
- Camera 2: Installed on a tree monitoring a fallen tree in SW1 in the east of the Site;
- Camera 3: Monitoring the White Brook adjacent to the remnants of a footbridge;
- Camera 4: Installed on a tree monitoring a flooded area of land in semi-natural broadleaved woodland adjacent to the White Brook.

3.2.3. These locations are shown on Figure 2. The cameras were installed on 8th June 2021 and were collected on 6th September 2021.

3.3. Water vole survey

3.3.1. A survey for water voles was undertaken within the Survey Area as defined in Section 3.1. The survey involved the vegetation on the bank edge of watercourses/waterbodies being thoroughly searched for field signs indicating the presence of water voles. Field signs were also searched for up to 1m out into the water and at least 1m up the bank (Dean *et al*, 2016). Signs indicating water vole presence searched for included feeding remains, characteristic grass lawns, burrows, runs, footprints, latrines and water vole droppings (Strachan, Moorhouse & Gelling, 2011). As per current best practice guidance two survey visits were undertaken (see dates and weather conditions in Table 1) with one during the early part of the season and the other in the later part of the season.

Table 1: Survey Dates and Weather Conditions

Survey No.	Date	Weather Conditions
1	08/06/21	Dry with partially cloudy skies (cloud cover 4/8) with a light breeze (Beaufort scale F2) and air temperatures ranging between 14°C and 16°C during the survey.
2	06/09/21	Dry and partially cloudy skies (cloud cover 4/8-6/8) with a light breeze (Beaufort Scale F1-F2). Air temperatures ranged between 23°C and 25°C during the survey.

Population Size Estimate for Water Voles

3.3.2. The water vole mitigation guidelines state that "*the numbers of latrines recorded during the survey visits will give an indication of relative population size*" (Dean *et,al*, 2016). This information can also be helpful in determining the most value areas of a Site for this species. Table 2 below shows relative population sizes based on the numbers of latrines.

Table 2: Water Vole Population Size (Dean et al, 2016)

Relative Population Density	Approximate number of latrines per 100m of bankside	
	First half of survey season (mid-April to end of June)	Second half of survey season (July to September)
High	10 or more	20 or more
Medium	3-9	6-19
Low	< 2 (or none, but with other confirmatory field signs)	< 5 (or none, but with other confirmatory field signs)

3.4. Survey Personnel

3.4.1. The otter and water vole survey were undertaken by Stephen Foot MCIEEM and Edward Austin MCIEEM.

3.4.2. Stephen has worked as a professional ecologist since 2005 and during this time has undertaken numerous surveys for both otter and water voles. He has a good knowledge of both otter and water vole ecology, behaviour and signs indicating presence in-line with the requirements of the Competencies for Species Survey (CSS) prepared by CIEEM (CIEEM, 2013). He is a volunteer water vole surveyor for the Berks, Bucks and Oxon Wildlife Trust (BBOWT) and has been involved in water vole translocation programmes and in licensable activities in relation to the closure of an otter holt under licence from Natural England.

3.4.3. Ed has been a full-time professional ecologist since 2004. During this time Ed has also undertaken a number of otter and water vole surveys using standard methods and has a good knowledge of both otter and water vole ecology, behaviour and signs indicating presence. He has also completed and assisted with translocations of water voles using habitat management and trapping methods.

3.5. Survey Limitations

3.5.1. During the field survey, dense overhanging bankside vegetation prevented access to the water's edge along the White Brook in some locations. However, it was possible to access the majority of areas (particularly those suitable for water voles) and good views were possible from other locations on the banks. Whilst this meant that the exact location of certain features could not be accurately mapped, the margin of error is within a few metres.

3.5.2. Despite the limited access in a few areas, there are not considered to be any limitations to the water vole and otter assessment as the majority of the banks could be thoroughly searched. In addition, the use of static photography enabled consideration of Site use by otter over a longer period of time than a standard two-visit survey would otherwise have allowed.

4. Results and Interpretation

4.1.1. This section sets out the results of the otter and water vole surveys. Findings gathered during the surveys are included in Appendix 1 and shown on Figure 2. The implications of the results are then explored with reference to current legislation.

4.2. Otter survey results

4.2.1. Signs of otter spraint were noted on tree roots/rocks on the banks of the River Thames immediately to the east of the Site and on fallen trees/logs over SW1 in the east of the Site.

4.2.2. In addition, footage of otters was recorded on the trail cameras on two occasions. The first of these was on 26th June 2021 at camera location 1 with the 2nd image captured on 21st August 2021 at camera location 2 (see Appendix 2).

4.2.3. The River Thames to the east and its surrounding woodland and the woodland on Site does support numerous places where otters could potentially layup/shelter with both the Thames and White Brook also supporting a population of fish upon which otters could potentially forage. Given the above findings it is likely that otters use the Brook and woodland as a foraging resource (predating upon fish and waterfowl) on occasion and could use the brook when moving through the local landscape. The otter has suffered serious declines throughout most of its European range, and by the mid-1970s the UK otter population had decreased to such an extent that otters were only found to be present in in Scotland, parts of Wales and the West Country, with a few remnant populations in other parts of England (Crawford, 2010). The Environment Agency has been surveying 2,940 Sites across England revealing the presence of otters in just 5.8% of the Sites in 1977-79, rising to 36.3% in 2000-02 and 58.8% in 2009-10 (Environment Agency, 2010).

4.2.4. Eurasian otters are known to occupy large territories with the mean length of river and stream used found to be 38.8km+/- 23.4km for males 18.7km+/-3.5km for females in a study of Scottish rivers (Durbin, 1998 and Kruuk, 2006). In a study undertaken in lowland water courses in East Anglia it was found that radio-tracked otters inland spent 53% of the day in or alongside woodland (Jefferies *et al*, 1986). The relatively dense bankside vegetation and woodland on Site provide potential refuge and sheltering places for otters.

4.3. Water vole survey results

4.3.1. No evidence of water vole activity was recorded anywhere in the survey area. The White Brook within the Site is suitable for this species providing good quality habitat for water voles with soil/earth banks in which burrows can be excavated and areas of dense fringing marginal vegetation offering potential sheltering and foraging opportunities for this species. However, given a lack of evidence of water vole activity, the brook and waterbodies on Site are therefore not considered to support active populations of water voles at the time of this survey.

4.3.2. American mink (*Neovision vision*) paw prints were noted in silt on the adjacent to the White Brook in a previous survey (Austin Foot Ecology, 2019) with this species captured on camera on numerous occasions on waterbody SW1 to the south of the brook (see Appendix 2). Mink are

known to be a voracious predator of the water vole and have been a major contributory factor to the decline of this species throughout the UK. The presence of an active population of mink on the watercourses within and adjacent to the Site drastically reduces the likelihood of water voles to be present despite the brook providing suitable habitat.

4.4. Site Evaluation

4.4.1. The Site was found to be used on an occasional basis by otters with this species recorded moving through the area. The woodland may also be used as sheltering resource and given a current lack of disturbance could also support a holt in some years. The brook and SW1 may also provide a foraging resource for this species along with the adjacent River Thames. The Site is therefore considered to be of local value to otters.

4.4.2. Water voles were found to be absent from the Site during the targeted survey effort conducted in 2021. In light of these survey findings the Site is assessed as being of negligible value to water voles.

4.4.3. The Site does have the potential to be used in the future by water voles if populations within the county increase. Targeted habitat management and creation has the potential to further improve the importance of the Site and the value of the populations of these two species using the Site in the future (see Section 5).

4.5. Incidental Species

4.5.1. A number of species were recorded on the trail cameras during their deployment at the four locations. These are included in Table 3 below.

Table 3: Species recorded on Trail Cameras

Common Name	Scientific Name
Mammals	
Badger	*Meles meles*
Bat (likely brown long-eared bat)	*Plecotus auritus*
Brown rat	*Rattus norvegicus*
Fox	*Vulpes vulpes*
Grey squirrel	*Sciurus carolinensis*
Muntjac deer	*Muntiacus reevesi*
Roe deer	*Capreolus capreolus*
Water shrew	*Neomys fodiens*
Wood mouse	*Apodemus sylvaticus*
Birds	
Grey heron	*Ardea cinerea*
Jackdaw	*Coloeus monedula*

Common Name	Scientific Name
Mallard	*Anas platyrhynchos*
Mandarin duck	*Aix galericulata*
Mute swan	*Cygnus olor*
Kingfisher	*Alcedo atthis*
Wood pigeon	*Columba palumbus*

5. Outline Impacts and Recommendations

5.1.1. This section details potential impacts upon otters and water voles in relation to the proposals for the Site and provides recommendations as to how these can be avoided/overcome.

5.2. Otters

Potential Impacts

5.2.1. Given that use of the woodland, waterbody SW1 within the woodland and likely the brook are used by otters on at least an occasional basis, the opening up of this area to members of the public including the creation of a boardwalk could adversely affect this species. Impacts could include:

- Disturbance of otters using potential refuge areas (fallen trees, tree root boles, etc.) resulting in this species avoiding the area;
- Damage/destruction of these potential refuge areas to allow for construction of the boardwalk;
- Insensitive management of habitats present could also result in disturbance of otters using the Site; and
- Possible pollution events impacting the White Brook

Avoidance and Mitigation Measures

5.2.2. The avoidance of opening up of this area to the public, i.e. not creating the boardwalk in this area, would allow the Site to remain undisturbed and to continue to function as a potential refuge area for otters. This would also avoid the need to clear any potential refuge features (fallen trees, etc.) which may be being used by this species as resting places.

5.2.3. Future management of this area of woodland should be undertaken sensitively given that the birth of cubs appears to be aseasonal in the UK (cubs can be born in any month of the year) (Harris & Yalden, 2008). Therefore, works must avoid damaging/destroying any of the existing potential refuge areas that are present, with areas to be cleared to be first checked by an ecologist.

5.2.4. The reinstatement of the footbridge across the White Brook and the possible use of machinery to construct the boardwalk would need to be carefully considered. In order to avoid direct impacts upon the White Brook, the waterbody in the east and wetland habitat within the woodland (and species including otters), the general environmental protection measures as listed below must be implemented during the construction of the boardwalk/bridge. Such measures include best environmental practice guidance outlined in the Environment Agency's Pollution Prevention Advice and Guidance (Environment Agency, 2007) (now archived) and those outlined by the Construction Industry Research and Information Association guidance (CIRIA, 2015). The following minimum standards must be adhered to prevent ecological impacts beyond the Site boundary:

- Measures must be taken to prevent dust and other emissions from construction affecting land beyond the Site.

- Chemicals and fuels must be stored in secure containers. Spill kits must be available.
- Noise and vibration must be controlled and kept to the minimum necessary.

5.2.5. As stated in the EMP the creation of additional large log/brash piles within the woodland would provide additional potential sheltering habitat for otters (Austin Foot Ecology, 2021).

5.3. Water Voles

Potential Impacts

5.3.1. As stated in the results of this report, at present surveys findings show that this species is absent from the Site. Therefore, creating a new bridge across the brook would not adversely impact this species.

5.3.2. In order to encourage this species onto Site the creation of new wetland habitat and the proliferation of marginal plants i.e. common reed, etc., would create optimal foraging habitat for this species. However, given the presence of North American mink it is unlikely that water voles will be able to repopulate the riparian habitat on Site without assistance. The control of mink is likely to be needed to remove this predator from the Site followed by the release of water voles onto Site from a captured/captive bred population. However, given the proximity of the Site to the River Thames and that removal of individual mink would likely result in other mink readily colonising the Site and therefore on-going control would be required. In light of this, the ongoing control of mink may be too labour intensive as ongoing control would be necessary. An increase in the local otter population may also deter mink from using the Site in the future as otters are known to predate this species.

6. Conclusion

6.1.1. The otter and water vole surveys completed in 2021 in the Willow woodland and White Brook in the south-east of Battlemead Common found evidence of use of the Site by otters with water voles found to be absent.

6.1.2. In light of these findings, it is recommended that opening up of the woodland to the public along with the construction of a boardwalk and new bridge be avoided with an alternative sought in order to prevent adverse impacts upon otters (a European protected species). Providing management of the woodland is undertaking sensitively there are unlikely to be any adverse impacts upon otters as a result of future management of the Site.

6.1.3. In order for water voles to re-colonise the Site, enhancement of riparian habitat is necessary along with control of North American mink. Given the close proximity of the Thames and scope for mink to colonise the Site it is unlikely that control would of mink would be practicable in this instance.

7. References

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8. Figures

Figure 1 Site and Survey Boundary

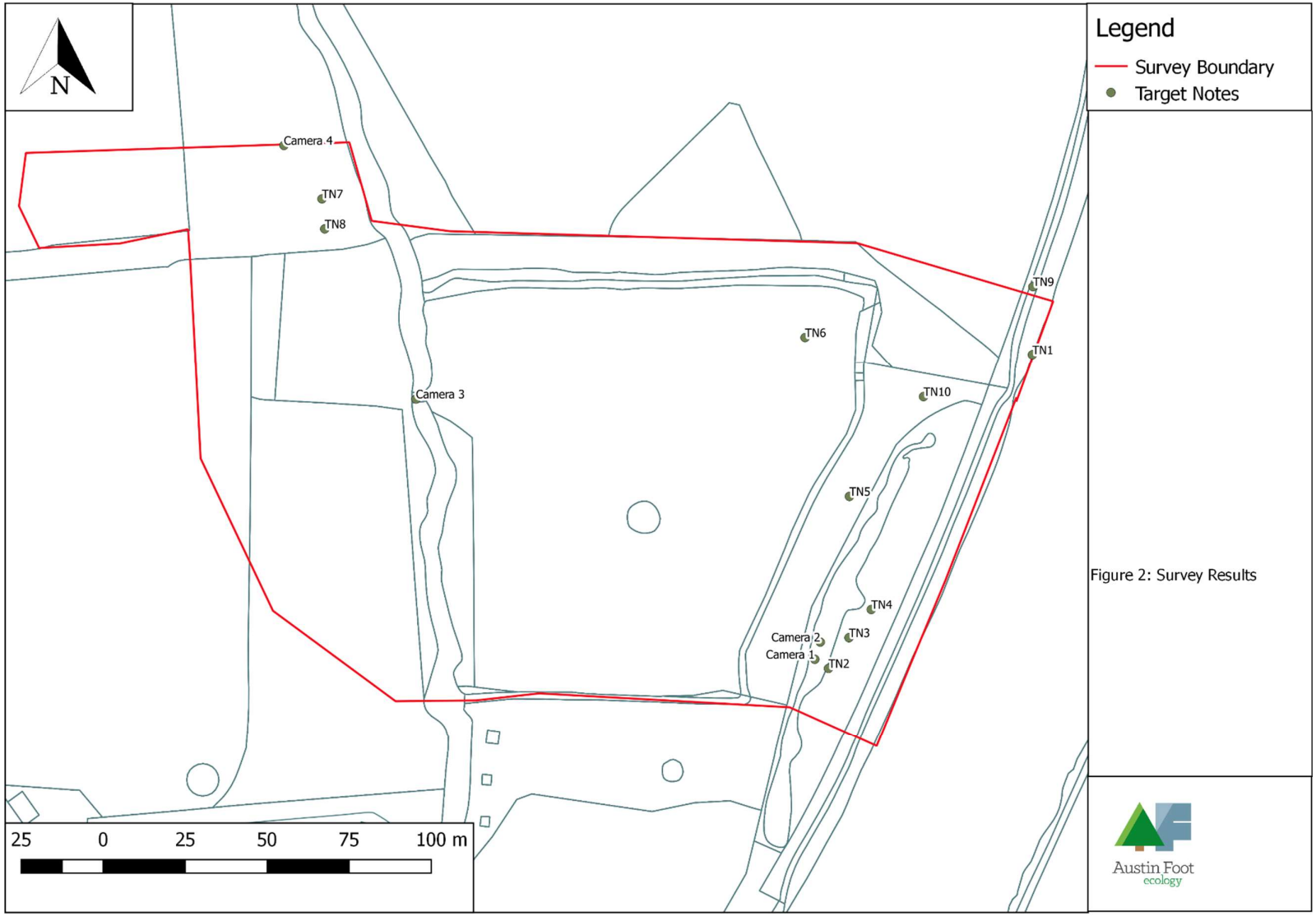

Figure 2: Survey Results

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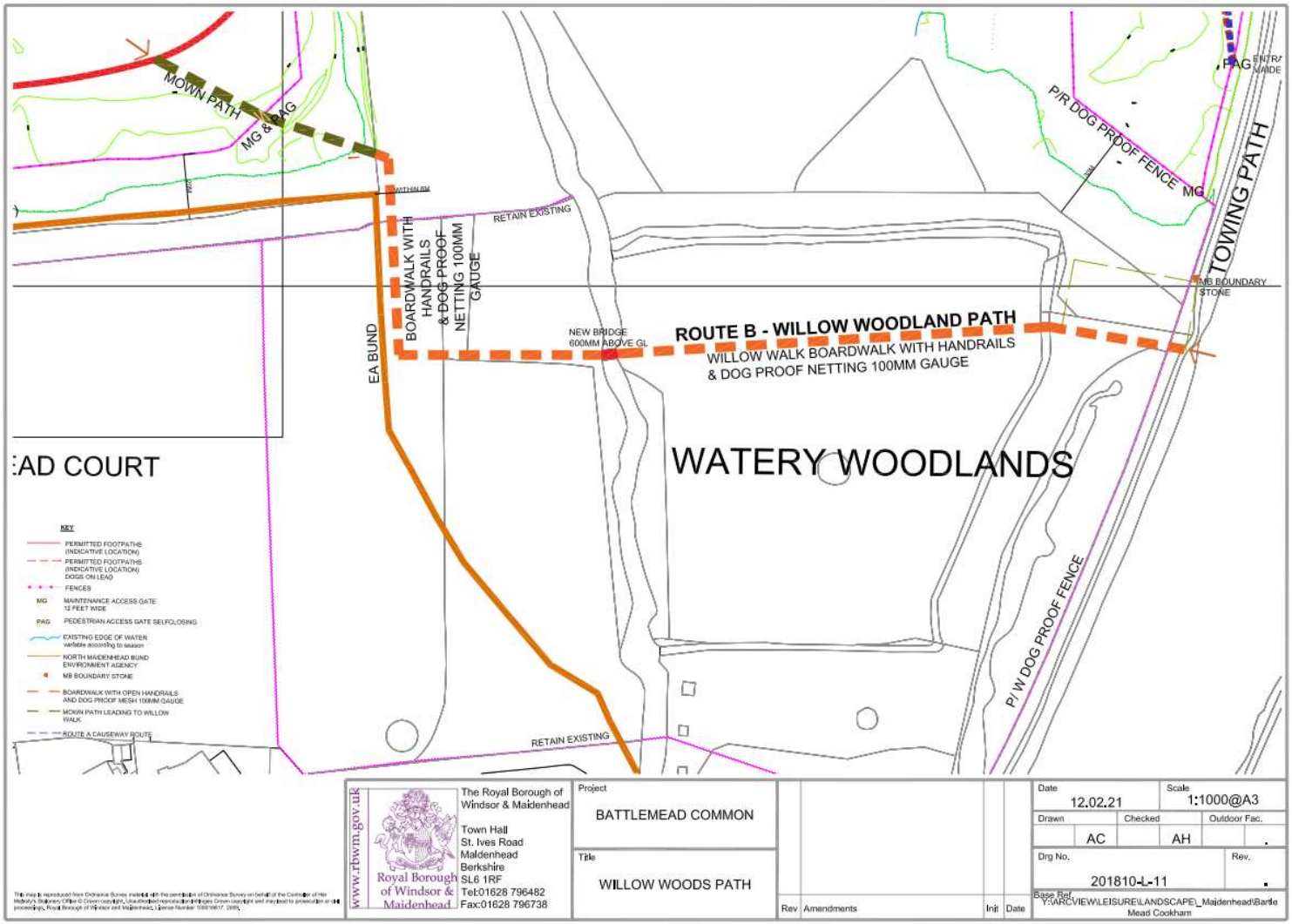
Figure 3: Proposed Footpath/Boardwalk Route



9. Appendix 1 – Otter and Water vole Target Notes

Target Note	Description
TN1	Possible otter spraint on rock on banks of the Thames
TN2	Potential otter laying up Site beneath root bole of fallen tree by SW1
TN3	Possible otter spraint on log
TN4	Potential otter laying up Site
TN5	Well-used mammal path
TN6	Fallen tree offering potential sheltering opportunities to otters
TN7	Fallen tree on edge of White Brook with roots offering potential sheltering opportunities to otters
TN8	Brown rat tracks on bank of White Brook
TN9	Jelly from otter anal scent gland on rock adjacent to the Thames
TN10	Possible resting place in hollow tree trunk

10. Appendix 2 – Photographs

Photograph 1: Otter at camera location 1 with badger crossing the log over the waterbody

Photograph 2: Otter crossing the log shortly after Photograph 1 above.

Photograph 3: Otter diving off log at camera location 2 in August 2021.

Photograph 4: Mink crossing the floating log at camera location 1 in July 2021

Photograph 5: Mink crossing the fallen tree at camera location 2 in June 2021

Photograph 6: Mink crossing the fallen tree at camera location 2 in September.

Photograph 7: Possible otter spraint on rock adjacent to the River Thames TN1

Photograph 8: Possible laying up Site beneath roots of fallen tree at Camera Location 1 (TN2)

Photograph 9: Possible resting place for otters in hollow trunk (TN10)

Photograph 10: Brown rat prints (TN8)

11. Appendix 3 – Relevant Legislation

11.1.1. This section briefly summarises the relevant legislation pertaining to the species mentioned within this report. Please note that the following text does not constitute legal advice.

11.2. Relevant Legislation

Otters

11.2.1. The original (1994) "Habitat Regulations" transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law. The Conservation of Habitats and Species Regulations 2017 (as amended) consolidates the various amendments that have been made to the Regulations.

11.2.2. "European protected species" (EPS) are those which are present on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) and includes all UK bat species. These species are subject to the provisions of Regulation 41 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

- Intentionally or deliberately capture, injure or kill any wild animal included amongst these species
- Possess or control any live or dead specimens or any part of, or anything derived from these species
- deliberately disturb wild animals of any such species
- deliberately take or destroy the eggs of such an animal, or
- intentionally, deliberately or recklessly damage or destroy a breeding Site or resting place of such an animal, or obstruct access to such a place

11.2.3. For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—

- to impair their ability to survive, to breed or reproduce, or to rear or nurture their young,
- or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- to affect significantly the local distribution or abundance of the species to which they belong.

11.2.4. Although the law provides strict protection to these species, it also allows this protection to be set aside (derogation) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works. In accordance with the requirements of the Regulations (2010), a licence can only be issued where the following requirements are satisfied:

- The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'
- 'There is no satisfactory alternative'
- The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range".

Water voles

11.2.5. The water vole and its habitats are protected by the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to intentionally or recklessly:

- Kill, injure or take water voles;
- Possess or control live or dead water voles;
- Damage, destroy or obstruct access to any shelter or place which water voles uses for shelter or protection; or
- Disturb water voles while they are using such a place.

11.2.6. Although the law provides strict protection to water voles and their burrows, it also allows this protection to be set aside (derogation) through the issuing of licences. The licences in England are currently determined by Natural England (NE).

Battlemead, Maidenhead, Berkshire

Ecological Management Plan

For Royal Borough of Windsor and Maidenhead

July 2020

Project Number	0286.05
Client Reference	Royal Borough of Windsor and Maidenhead
Project/Site Name	Battlemead Common, Maidenhead, Berkshire
Report Title	Ecological Management Plan

Version Number	Date	Author	Reviewer
002	06/07/20	Stephen Foot	Ed Austin

Disclaimer

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Any recommendation, opinion or finding stated in this report is based on circumstances and facts as they existed at the time that Austin Foot Ecology undertook the work.

Nothing in this report constitutes legal opinion. If legal opinion is required, the advice of a qualified legal professional should be sought.

1. Introduction

1.1. Site and Project Description

1.1.1. Battlemead Common (hereafter referred to as "the site") is located to the east of Lower Cookham Road in the north of Maidenhead in Berkshire. The central grid reference is SU 9044 8388. The site is bordered to the east by the River Thames, to the west by Lower Cookham Road with pasture beyond, to the north by White Place Farm and to the south by commercial and residential development. The site covers an area of approximately 45ha comprising semi-improved grassland, woodland, wetland habitat and tall ruderal vegetation. The White Brook also passes through the centre of the site. The site boundary is shown in Figure 1.

1.1.2. The Royal Borough of Windsor and Maidenhead (RBWM) are applying for planning permission the creation of a carpark. Public access across the site is planned to provide access to the Thames Path to the east whilst maintaining and enhancing the existing biodiversity value of the site. A carpark for approximately 25 cars is to be constructed on the western boundary providing vehicular access from the adjacent Lower Cookham Road.

1.2. Baseline Conditions

1.2.1. An Ecological Appraisal comprising an ecological desk study, an extended Phase 1 habitat survey, River Corridor Survey (RCS) and a Habitat Suitability Index (HSI) assessment for great crested newts was undertaken at the site by Austin Foot Ecology in May 2019 (Austin Foot Ecology, 2019a). These surveys revealed the site to predominantly comprise semi-improved grassland with areas of broadleaved woodland, plantation broadleaved woodland (also classified as wet woodland), scattered mature trees, standing open water, running water (the White Brook), inundation vegetation, tall ruderal vegetation, a length of recently planted species-rich hedgerow and a length of established species-poor native hedgerow.. The woodland (including wet woodland habitat), the grassland to the west and north (floodplain grazing marsh), the native hedgerows, the running water and possibly the standing water were classified as Habitats of Principal Importance in England on a list drawn up in response to the requirements of Section 41 of the Natural Environment and Rural Communities Act, 2006. In addition, the combination of these semi-natural habitats (i.e. mosaic of semi-natural habitats present) also increased their value in the local context.

1.2.2. Incidental observations of fauna recorded during the site visit included a number of common and widespread invertebrate, bird and mammal species with 9 badger setts also found to be present. The desk study and field survey combined concluded that the site was likely to support the following protected and notable species:

- **Invertebrates** – A community of common and widespread invertebrates was considered likely to be present given the habitats/botanical species present. This included some species of conservation importance including butterflies and moth species, aquatic macroinvertebrates (including dragonflies and damselflies), stag beetles and other dead wood living invertebrates. Brown banded carder bees (*Bombus humilis*) could also be present.

- **Amphibians** – Great crested newts were considered to have the potential to be present within two waterbodies and in terrestrial habitats on site with common toads also likely to be present. An eDNA assessment to determine the presence/absence of this species was undertaken in June 2020 on both waterbodies and the inundated flooded area by the causeway (SW1). All results were negative for great crested newt eDNA and this species is therefore currently absent from the site (Austin Foot Ecology, 2020).
- **Reptiles** – The site was considered to have the potential to support common species of reptile; in particular grass snakes given the habitats present.
- **Birds** – A breeding bird survey was undertaken between Spring and Summer 2019 by Austin Foot Ecology. This survey revealed the presence of a total of 44 species of bird as confirmed, probably or possibly breeding on site or the immediate vicinity in 2019. The overall species assemblage was dominated by common and widespread species (e.g. thrushes, tits, robins and wrens, etc.). However, the assemblage included twelve species of varying conservation concern, including two specially protected (Schedule 1) species; the barn owl and kingfisher (albeit nesting on site was not confirmed for either) (Austin Foot Ecology, 2019b). A wintering bird survey was also undertaken between October 2019 and March 2020. The survey recorded an overall assemblage of at least 60 bird species using the site. The assemblage was dominated by species that are common and widespread in Berkshire. The range of habitats as well as the overall species range indicated that the site is of value to wintering birds in the local area in particular the central brook corridor and the wetland areas in the south-east of the site.
- **Bats** – The site supported a number of trees capable of supporting roosting bats with the habitats on site (woodland and wetland) considered to provide high quality foraging and commuting habitat. Given the variety of habitats present the site has the potential to support a diverse assemblage of bats.
- **Badgers** – Nine setts were identified within/adjacent to the site including a large main sett in the south.
- **Otters** – A number of records of otters were provided locally (some from the adjacent River Thames). The White Brook passing through the site may be used by otters on occasion with woodland habitats in the south also having the potential to provide holts/laying up sites for this species (though no direct evidence was noted).
- **Hedgehogs** – This species had the potential to use the site as a foraging and sheltering resource.
- **Other mammals** – Evidence of foxes, rabbits, mink and deer was noted.

1.2.3. An initial draft of this document was submitted to the Friends of Battlemead Group that included the Cookham Society, Maidenhead Waterways, Wild Maidenhead, Wild Cookham, Maidenhead Civic Society, Cookham Parish Council, East Berkshire Ramblers and Councillor Greg Jones for comment. Following a review of these comments and points of view, a site visit was undertaken in June 2020 including Austin Foot Ecology and RBWM to determine how best to balance the aspirations for use of the site by the various groups whilst still maintaining and enhancing the site's ecological value. This final document, therefore, reflects the outcome of this meeting and the proposed site layout and management proposed by RBWM based on this consultation.

1.2.4. Please note that only high-level recommendations regarding the future management of trees within the site have been included in this document. Advice from an arboriculturalist must be sought in relation to the future management of trees. Similarly, advice pertaining to the maintenance of the White Brook and water levels within the site has also not been included within this document. Advice from a hydrologist/the Environment Agency should be sought with regard to management relating to the brook.

1.3. Plan Aim

1.3.1. This Management Plan has been prepared to provide details of the ecological mitigation and management measures that will be delivered as part of RBWMs ownership of the site. This has been based on the ecological surveys undertaken at the site and the comments provided by interest groups (Friends of Battlemead).

2. Legislative Considerations

2.1.1. The site supports habitats known to and/or capable of supporting the following species/species groups; reptiles, amphibians, roosting, foraging and commuting bats, nesting birds, badgers, otters, hedgehogs and other mammals (foxes, rabbits and deer). The legislation protecting these species is summarised below.

2.2. Reptiles

2.2.1. The common, widespread species of reptile (slow worms are known to be present on site) receive legislative protection under the Wildlife and Countryside Act 1981 (as amended) and by the Countryside and Rights of Way Act 2000, making it an offence to:

- Intentionally or recklessly kill or injure any reptile;
- Sell, offer for sale, possess or transport for the purchase of sale or publish advertisements to buy or sell any reptile.

2.2.2. Reptiles across the UK have undergone significant declines in recent years and all species of reptile within the UK are now classified as SPI's.

2.3. Nesting birds

2.3.1. All wild birds in the UK are protected under the Wildlife and Countryside Act 1981 (as amended). This legislation protects the birds and their young from killing and injury and prohibits damage or destruction of their active nests and eggs.

2.3.2. Bird species listed on Schedule 1 of the WCA (e.g. barn owl and red kite) receive additional protection from disturbance at or near an occupied nest site. Schedule 1 of the Act makes it an offence to intentionally or recklessly disturb this species while it is building a nest or is in, on or near a nest containing eggs or young. It also makes it an offence to intentionally or recklessly disturb dependent young of these species.

2.4. Bats

2.4.1. All bats and their roosts are afforded protection under the Conservation of Species and Habitats Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended). In broad terms these pieces of legislation jointly mean that the bats themselves are protected against killing, injury, taking (capture) and disturbance. In addition, their roosts are protected against damage, destruction and obstruction.

2.5. Otters

2.5.1. Otters and their breeding/resting places are afforded protection under the Conservation of Species and Habitats Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended). In broad terms these pieces of legislation jointly mean that the otters themselves are protected against killing, injury, taking (capture) and disturbance. In addition, their holts and resting places (laying up sites) are protected against damage, destruction and obstruction.

2.6. Badgers

2.6.1. Badgers are protected under the Protection of Badgers Act 1992. This makes it an offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it.

2.7. Wild Mammals (Protection Act, 1996 (as amended))

2.7.1. Under the Wild Mammals (Protection) Act 1996 it is an offence to cause unnecessary suffering to wild mammals, including crushing and asphyxiating. This Act is primarily concerned with animal welfare and aims to prevent cruelty. As a result, offences include those actions with the intent to inflict unnecessary suffering. A wild mammal includes any mammal which is not domestic or captive. Red foxes, wild deer and other mammals such as rabbits are therefore covered by the Act.

2.8. The Natural Environment and Rural Communities Act, 2006 (as amended)

2.8.1. Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 placed a duty on the Secretary of State to publish, review and revise lists of habitats and living organisms in England that are of principal importance for the purpose of conserving biodiversity. The NERC Act also required the Secretary of State to take, and promote the taking of, steps to further the conservation of the habitats and listed organisms. Decision-makers such as public bodies, including local and regional authorities, have a duty under the related Section 40 of the NERC Act, to have regard to the conservation of biodiversity in England, when carrying out their normal functions and therefore should be mindful of potentially significant effects of development on these species when considering planning applications. The semi-natural woodland, running water, grazing marsh (grassland), hedgerows and possibly ponds are HPIs with common toads, great crested newts, reptiles, some bird species, hedgehogs, otters and some invertebrate species classified as being SPIs.

3. Aims and Management Objectives

3.1.1. The overall aim of this management plan is to maximise the biodiversity and amenity value of the site within the constraints imposed by the legislative considerations outlined in Section 2. This aim will be achieved through the implementation of the following overarching management objectives and subsequent management aims.

3.2. Objective 1: Enhance and maintain the diversity and quality of habitats within the site

3.2.1. As detailed within Section 1 of this management plan, the Battlemead Common site currently supports a variety of habitat types. Through the implementation of specific management there is the potential to enhance the diversity and in some cases the extent of habitats within the site.

3.2.2. The quality of existing habitats will be enhanced through the implementation of positive habitat management (with regard to the legislative/seasonal constraints imposed by the presence of known and potentially present legally protected species). In some cases, additional measures including the planting of native species has also been included as an additional enhancement. These measures will be undertaken by RBWM through support of local interest groups e.g. Friends of Battlemead. The management/additional enhancement proposed within this management plan will be targeted at the following existing habitats:

- Semi-Natural Broadleaved Woodland
- Plantation Broadleaved Woodland
- Scattered broadleaved trees
- Standing Water and Wetland Habitats
- Semi-improved neutral grasslands
- Scrub and ruderal vegetation (including the removal of invasive species)
- Native Hedgerows

3.3. Objective 2: Enhance Populations of Protected Species and Species of Conservation Importance

3.3.1. The site supports or is considered to support (now or in the future) a variety of species that are either protected by legislation or are considered to be of conservation importance in a local or national context. Managing the site to ensure such populations are maintained or enhanced through appropriate habitat management and the provision of new habitat will add to local and national biodiversity objectives. The following species or species groups will be the primary focus of positive management measures:

- Invertebrates
- Amphibians and Reptiles
- Nesting and Foraging birds
- Roosting, Foraging and Commuting Bats
- Badgers
- Otters
- Other mammals

3.3.2. Populations of these species will be maintained and enhanced primarily through habitat management, enhancement and creation as set out in Objective 1. In addition, specific measures will be incorporated into the site including the provision and maintenance of bat and specialist bird boxes and the creation of hibernacula (log and brash piles) for invertebrates, reptiles, amphibians and possibly otters.

4. Management Prescriptions

Management prescriptions that aim to fulfil the objectives set out in Section 3 are detailed below.

4.1. Objective 1: Enhance and maintain the diversity and quality of habitats within the site

4.1.1. Aims to achieve the above objective are provided along with subsequent management prescriptions below. Figure 2a and 2b shows the locations of these management prescriptions.

Semi-Natural Broadleaved Woodland

Aim

4.1.2. To protect woodland from possible impacts resulting from carpark construction and increased pedestrian access (e.g. compaction of roots and breaking of branches, etc.) and to ensure appropriate structural diversity within the woodland maximising species composition within the canopy, shrub layer and ground layer and maintain the health of trees.

Prescriptions

4.1.3. The woodland blocks within the site have been assigned alphanumeric codes to differentiate them (see Figure 2). Woodland parcel BW1 has the potential to be impacted during the construction of the small carpark proposed in the west of the site. Advice from an arboriculturalist will be sought with regard to the excavation of this carpark. As a guide, works will adhere to British Standard: 5837:2012 "Trees in Relation to Design, Demolition and Construction" which prescribes the need for the following protection measures:

- Erection of stout fencing around each tree or hedgerow in advance of site clearance, enclosing the Root Protection Area;
- Prohibition of construction activities, material storage, use of vehicles, fires, etc. within the fenced area to prevent damage to tree roots and compaction of the soil; and
- Maintenance of an adequate water supply to the trees and hedgerows both during and after construction.

4.1.4. The remaining woodland parcels have been separated from the public by post and wire fencing. This will ensure that impacts to roosts/vegetation as a result of pedestrian access will not occur.

4.1.5. The woodland parcels should require minimal maintenance as they are already well established; however, all parcels of woodland would benefit from a regime of thinning in order to promote diversity of the ground flora and to maintain a healthy woodland structure. Thinning will be undertaken in the second year and then 10 and 20 years after. This will create structural diversity and promote the growth of retained trees and shrubs by reducing competition between individual specimens. Advice from an arboriculturalist will be sought with regard to the best way to approach this. This will be undertaken during the winter period.

4.1.6. Inspections of trees within woodland parcels (close to fencing and therefore members of the public) will be undertaken annually to check for dead damaged branches for reasons of health and safety Pruning of trees/branches where necessary will be undertaken by appropriately trained personnel once the status of roosting bats/nesting birds has been ascertained by a suitably qualified ecologist.

Plantation Broadleaved Woodland

Aim

4.1.7. As with the semi-natural woodland above the aim is to ensure appropriate structural diversity within the woodland maximising species composition within the canopy, shrub layer and ground layer and maintain the health of trees.

Prescriptions

4.1.8. Thinning and coppicing/pollarding of the willow plantation in the south of the site will open up areas of the woodland to help to promote growth of ground flora (i.e. 'glade' creation). In the long term this approach will help with natural regeneration of trees and promote age and structural diversity within the woodland. Where possible trees that are dead, diseased or suppressed will be a priority. However, some standing deadwood will also be left in-situ in some instances as this will provide additional opportunities for deadwood living invertebrates, fungi and possibly roosting bats and nesting birds. Advice from an arboriculturalist will be sought with regard to the removal of trees where necessary, particularly if it is necessary to remove the more mature poplars or willows within the woodland. The pollarding/coppicing will help to prolong the long-term retention of these trees and will introduce a more diverse woodland structure. In order to ensure that the disturbance resulting from these works are kept to a minimum, five trees within this woodland will be pollarded per two-year cycle (see Figure 2a and 2b). This will be undertaken in years 1, 3 and 5 and reviewed at the end of the management plan period.

4.1.9. Arisings from this felling/coppicing/pollarding will be stacked in discrete areas with log and brash piles used to provide potential sheltering/laying up opportunities for otters as well as providing a foraging and sheltering resource for small fauna; saproxylic (deadwood feeding) invertebrates like stag beetles (*Lucanus cervus*) for example. A minimum of two will be created in each of the pollarding years.

4.1.10. The dominance of common nettle within this woodland parcel is likely the result of the high nutrient levels within the soil and therefore a 6-10m swathe will be mown/strimmed where nettle growth is most dense (particularly to the east of the White Brook), creating a clear area between the eastern boundary of the Site and the banks of the brook. This will be undertaken 3-4 times per year (during autumn and winter) with the arisings removed from the site to ensure that their breakdown does not contribute further to nutrient enrichment. Harrowing/raking of the ground in these areas post-cutting will be undertaken to help to improve botanical diversity. Initially newly created glades (following tree thinning/coppicing) will also be mown 3-4 times per year in order to remove the initial flush of nettle growth likely to arise. The diversification of the ground flora will likely lead to an increase in invertebrate diversity with the diversity of other fauna also likely to increase as a result e.g. birds and bats. No public access to PBW1 will

be allowed due to the predicted impacts on the fauna that use this area and the levels of tree clearance that would be required for health and reasons, changing the character of this habitat and reducing its biodiversity value.

Scattered Broadleaved Trees

Aim

4.1.11. To protect and maintain standard trees particularly in the west of the site and to provide additional tree planting to maximise biodiversity value.

Prescriptions

4.1.12. The vegetation around the mature standard trees within the western field will left to ensure a 10m buffer of longer grass/ scrub is present reducing access by the public to the base of these trees and provide additional habitat for nesting birds.

4.1.13. Five trees will also be planted within the western field in the first year, with another five to be planted in year three to ensure that ongoing tree cover is present in the future and to further enhance the quality and value of the parkland habitat in this area. After this time period, the numbers and frequency of planting will be assessed and updated within the next version of the management plan. The trees planted within the first five years will comprise entirely pedunculate oak (*Quercus robur*) as so to be in keeping with the surrounding trees. This will be assessed at the end of the five year management plan. All newly planted trees will be protected by tree shelters and mulch mats. Mulch mats will reduce competition from vigorous grasses and tall-herbs and reduce the need for weed control by spraying with herbicide or mowing. In addition, mulch mats may also be used for shelter by invertebrates, small mammals, amphibians and reptiles. New trees will also be surrounded by temporary fencing in order to prevent grazing by deer known to frequently use the site but will be removed once the trees become more mature.

4.1.14. This new tree planting will be positively managed for a three-year period following establishment, dead and dying trees / shrubs will be removed and defective guards and supports replaced as required. After 5 years, the majority of planted trees will no longer require support or protection and all tree shelters will be removed.

4.1.15. Inspections of standard trees, particularly the mature specimens within the open grassland in the west will be undertaken annually to check for dead damaged branches for reasons of health and safety given that this area is to be opened to the public. Pruning of trees/branches may therefore be necessary and should be undertaken by appropriately trained personnel once the status of roosting bats/nesting birds has been ascertained.

Standing Water and Wetland Habitats

Aim

4.1.16. To ensure that standing water remains on site year-round with waterbodies to be managed to prevent annual drying and future succession to scrub. Riparian habitat will also be enhanced

Prescriptions

4.1.17. The waterbody SW3 located within woodland BW4 appears highly silted and covered in dense stands of common reed. In order to improve the value of this waterbody the pond will be desilted with stands of reed also removed in order to create areas of deeper open water. Removing silt from the waterbody will also help to ensure that it holds water year-round and would halt succession of the waterbody to scrub habitat. Creating open water habitat would help to increase the botanical diversity of this waterbody as well as providing an improved habitat resource to a range of faunal species including amphibians during the breeding season. Without future intervention, it is likely that the waterbody will continue to become overrun by emergent vegetation and eventually succeed to scrub or other terrestrial vegetation. Therefore, regular removal of emergent vegetation will be undertaken, in order to maintain a cover of no more than 20% of the surface area of the waterbody. Control of submerged vegetation will be required and coverage of submerged plants will not exceed greater than 50% of the pond area.

4.1.18. Given an absence of great crested newts pond management can be undertaken without the need of a licence. In order to avoid impacts to other amphibian species that may be present works will be undertaken from late autumn through winter (typically 31st October-31st January). The management of the emergent and submerged vegetation will occur in years 1, 3 and 5.

4.1.19. The reedbed habitat around the areas of standing water (SW1) will be expanded by additional reed planting in order to provide an increase in cover for species such as water rail and other species, both overwintering and during the breeding season. This will be undertaken by planting of reeds to join up and expand the cover around the causeway for these species. The reeds will be planted in the first year and will be positively managed in the first two years, to ensure that any dead specimens are replaced as required. As the grazing has now ceased on this area of grassland and mowing will not occur around the wetland areas, it is likely that the reedbeds currently on site will also naturally expand their range and increase the shelter for wildfowl and other birds.

Semi-Improved Neutral Grassland

Aim

4.1.20. To enhance the floristic diversity of the grassland on site in order to maintain and/or increase its biodiversity and amenity (aesthetic/recreational) value. This is particularly recommended in the large western most field (SNG1) as well as SNG2 and SNG4. The conversion of the semi-improved grassland on site through positive management to species-rich grassland will provide additional habitats for a variety of plant and animal species.

Prescriptions

SNG1

4.1.21. Within SNG1, the majority of the grassland sward will be allowed to grow, flower and set seed each year between the beginning of March and mid-September. The grassland should then be cut and the arisings (cuttings) removed. The sward should then be cut once again in late autumn (late October) to a height of 50mm followed by a light harrowing to pull out any accumulated

leaf litter and to create bare soil gaps. Cutting in these periods will reduce the risk of possible killing and injury to reptiles and amphibians. The exception is a broad 10m buffer either side of the existing and newly planted tree lines, which will be left to grow and scrub up forming a mosaic of denser habitat around the trees. This will lessen the impact on the veteran trees and provide some extra cover for wildlife habitat. Scrub species will also be planted within this buffer in order to establish this habitat more quickly and will be planted in the first year, with scrub management in years 2 and 4 if required. In addition, a path around the margin of the field, forming a circular route will be cut on a regular basis in order for the public to be able to walk a route around the field all year round. The path will follow the fence line that has already been installed.

SNG2

4.1.22. SNG2 will be allowed to grow, flower and set seed each year between the beginning of March and mid-September. The grassland should then be cut and the arisings (cuttings) removed. The sward should then be cut once again in late autumn (late October) to a height of 50mm followed by a light harrowing to pull out any accumulated leaf litter and to create bare soil gaps. Cutting in these periods will reduce the risk of possible killing and injury to reptiles and amphibians.

SNG3

4.1.23. The eastern most field (adjacent to the River Thames, SNG3) was previously grazed by cattle which kept the sward short and was also grazed by geese and other waterfowl during the winter months. Since cattle grazing has been halted, this area of grassland will become tall and dense which is likely to reduce its value to foraging waterfowl later in the year. As such, part of this grassland will be cut short (50-100mm) in late summer (preferably August) in order to ensure that it remains of value to wintering waterfowl and to ensure consistency with previous management practices. This will be undertaken on a rotational basis, with a third of the field being cut each year in order to provide a more diverse grassland across the field and provide areas of shorter and longer grass for different species, whilst still providing shorter areas of grassland for wintering wildfowl. Within the cut areas of grassland, yellow rattle will be seeded in order to try and establish a more diverse grassland. This will be done on a three year rotation and will be monitored and reviewed at the end of the five year initial management period.

4.1.24. The majority of this field will remain closed to the public in order to protect its value to wildlife, in particular nesting and wintering birds. A section of this grassland close to the Thames path will remain open year-round (see Figure 3) to provide the public with a circular walk within the site whilst ensuring protection of the ecologically sensitive areas of wetland habitat. This area open to the public will undergo the same management regime as prescribed above but will have a mown footpath close to the fenceline for use by the public.

SNG4

4.1.25. The north field will be cut annually during the first five years in order to create a more diverse grassland and mosaic of scrub and grassland habitats. The exception would be the margins of the field which will be cut on a regular basis in order to form cut paths around the edge of the field. The management of this field will be reviewed at the end of this five-year management plan and updated accordingly.

Tall Ruderal Vegetation

Aim

4.1.26. To manage peripheral ruderal and scrub habitat to ensure it remains in favourable condition to provide habitat for nesting birds, reptiles and other small fauna.

Prescriptions

4.1.27. Tall ruderal vegetation on the margins have been protected from interference/access by the public by post and wire fencing. This habitat should require limited management; however, these will be cut on a two to three-year rotation (as required). As far as practicable, not all sections of the tall ruderal habitat will be trimmed at the same time. 25% of the tall ruderal vegetation extent will be cut in any one year to ensure dense growth is always present. No ground disturbance will be undertaken, only pruning/cutting back or vegetation with brush cutters or similar. This will be undertaken in late August/September when birds have finished nesting and reptiles are still active.

Native Hedgerows

Aim

4.1.28. Appropriate management of the species-poor hedgerow in the north of the site and the newly planted species-rich hedgerows on the eastern site boundary and along the new fence-line in the eastern field (SNG3) would maximise their biodiversity value providing screening of the wetland area from the Thames path and areas open to the public, providing an important corridor for wildlife as well has nesting and sheltering habitat for birds and small fauna.

Prescriptions

4.1.29. The species-poor hedgerow in the north will be pruned/cut cutback using mechanical or manual means during early spring (before March) and/or late autumn (October or November) every two years starting in year 1. Arisings will be shredded and used to mulch where appropriate. Hedgerows will be pruned to an 'A' shape to encourage a dense wide base.

4.1.30. The hedgerow margins will be managed to encourage graduated profiles of shrubs, tall ruderal vegetation and grasses. Large patches of coarse grassland species and common nettle will be restricted. Annual cutting and clearance will be undertaken during late October.

4.1.31. With regard to the newly planted species-rich hedgerows, management practises for the first five years will include the periodic removal of choking scrub, with annual trimming after an initial hard cut back in the first one or two seasons. Thereafter, the hedgerow will be thinned and cropped as required. Ten years after hedgerow establishment, native tree and shrub species will be coppiced and the re-growth will be laid to encourage a denser base. Litter, rubbish and debris will be regularly cleared. Any trimming will be done outside of the bird breeding season (i.e. works to be undertaken from September to February inclusive).

4.2. Fertiliser, Herbicide and Pesticide Use

4.2.1. The habitat management practices detailed above will ensure that the biodiversity of the site is maintained and enhanced. Other areas of management not previously discussed within this management plan concern the use of fertilisers, herbicides and insecticides. The use of herbicides, pesticides and fertilisers will not be used and, where use is necessary, be kept to an absolute minimum and only where current guidance prescribes its use.

4.3. Fencing and Seasonal Use of the Causeway and Eastern Field (SNG3)

4.3.1. Fencing has been installed around the perimeter of the large western field SNG1, along the eastern edge of the northern field SNG4 and along the northern edge of the large eastern field SNG3 to allow access to the Thames path. Following consultation with interest groups and RBWM in order to balance the differing needs for use of the site, seasonal use of part of the eastern field (SNG3) was agreed with additional fencing included as necessary (see Figure 3). The causeway will therefore be opened during spring and summer (March-October) to allow access to a portion of the eastern field. Dog-proof fencing will be installed to prevent access to the wetland areas either side of the causeway in order prevent any potential impacts and disturbance to nesting birds, with new reed growth along either side of the causeway likely to further ameliorate any potential impacts (as well as providing additional cover and potential nesting habitat in itself).

4.3.2. The fencing adjacent to the causeway will then extend north to the northern boundary of the site and south to a length of existing fencing in order to provide an area of open-space within the eastern field year-round. The distance of the fencing from the wetland areas has been selected in order to minimise possible impacts to breeding and overwintering birds whilst allowing members of the public to use this area as part of a circular walk incorporating the adjacent Thames path. The causeway will be closed between October and March in order to prevent the disturbance of overwintering waterfowl in these sensitive areas of the site. The route of the fencing has also been selected to allow for areas of undisturbed grassland to remain to allow for some foraging and loafing by geese and other waterfowl. Opening a portion of this field may have the effect of reducing the numbers of non-native Canada geese in this area leading to a reduction in nutrient enrichment arising from bird droppings and helping to enhance the floristic diversity of the grassland. A new hedgerow will also be planted along this fenceline to provide additional ecologically valuable habitat.

4.4. Dogs

4.4.1. Use of the site for dog walking will be carefully managed, and consideration will be given to the use of Dog Control Orders if necessary. Dogs will be allowed off the lead year-round in the western field (SNG1) only. Elsewhere on the site, where public access is available, dogs will be required to be kept on the lead at all times, in order to reduce the potential impact on wildlife species, such as disturbance to nesting or wintering birds. During those periods when the Causeway path is open, dogs will be required to be kept on leads whilst using this path. Dog-proof fencing will continue to be maintained in place to prevent access by dogs to those areas of the site which are closed to public access

4.4.2. Dog waste bins will be provided at the car park in the western field, in order to reduce the amount of dog waste within the site which will cause nutrification of the soil and decrease its species diversity. These bins will be emptied and serviced as necessary by the Council's contractors.

4.5. Invasive species

4.5.1. No invasive plant species were recorded on site during the preliminary ecological appraisal. However, as part of the on-going management, the site will be inspected regularly and if any invasive species, such as rhododendron, Japanese knotweed or Himalayan Balsam are recorded, these will be removed following appropriate guidelines and advice from a suitably qualified ecologist.

4.6. Biodiversity Impact Assessment Calculator

4.6.1. In order to determine whether a net gain in biodiversity value of the site can be achieved, the impact assessment calculator is used. This metric is used to assess the existing ecological value of the habitats present on site and compares this to the value of habitats post-development taking into account those habitats lost, created and enhanced. In this instance the metric has been used to determine the existing value of the site and shows the losses/gains in value that will occur as a result of proposals. With regard to the grassland habitats this takes into account the benefits of appropriate management to maximise biodiversity value whilst considering use of the parts of the site by members of the public. Therefore, the western field (SNG1) and part of SNG3 have had their potential future target conditions reduced from good to moderate levels.

4.6.2. The calculation shows that the site in its current state has an existing biodiversity score of 406.7 biodiversity units. Following the creation of the small area of carpark and appropriate management of the habitats present the future predicted biodiversity score as a result of the change of use (and management measures) would increase to 627.6 meaning a net gain of 220.9 biodiversity units. See screenshots from the calculation in Appendix 1

Table 1: Change in Biodiversity Units

Phase 1 habitat	Loss / Gain
Woodland and Scrub	30.10
Grassland and Marsh	163.67
Tall Herb and Fern	0.00
Heathland	0.00
Mire	0.00
Swamp, Marginal and Inundation	12.92
Open Water	10.47
Rock Exposure and Waste	0.00
Hedgerows	1.11
Miscellaneous	2.67

Total biodiversity units	220.9

4.7. Objective 2: Enhance and Maintain Populations of Protected Species and Species of Conservation Importance.

4.7.1. In addition to the positive management described above which will bring benefit to fauna present on site, the following additional enhancements will be implemented to further increase the biodiversity value of the site for these species/species groups.

Nesting birds

Aim

4.7.2. To improve nesting opportunities on site for birds, primarily for the benefit of Species of Principal Importance (SPI's).

Prescriptions – Installation of Bird Boxes

4.7.3. The provision of additional nest boxes on trees around the site will be carried out. The two barn owl boxes which were already on site have been relocated away from the pathways, to the boundaries of the site and two mandarin boxes have been placed between the west and north fields and one south of the causeway to the east field. Two further owl boxes and one kestrel boxes will also be installed onto suitable trees on site in the first year. These will be monitored for breeding and additional boxes added, if deemed appropriate, following the first five years of the management plan.

4.7.4. In addition, five boxes for generalist species such as tits and for species not currently known to breed on site such as willow tit (*Poecile montanus*), marsh tit (*Poecile palustris*) and starling (*Sturnus vulgaris*) will be installed. A range of box designs are commercially available or could be built/installed as part of community engagement projects.

4.7.5. Suitable bird box designs include:

- Smaller wood or woodcrete boxes with a small entrance hole of 32mm suitable for blue tits and possibly marsh or willow tits;
- Larger wood or woodcrete boxes with a larger hole entrance (around 45mm in diameter) suitable for starlings; and
- Wood or woodcrete open-fronted boxes suitable for robins, blackbirds and wagtails.

4.7.6. Bird boxes will be installed in positions where they are out of reach of people from the ground (so as to limit interference) and high enough to deter cats and other predators. The boxes will be placed between 3 and 4.5 metres from the ground on trees. It is useful to place different boxes in a range of locations at slightly different heights and facing in slightly different directions to give a choice of nest site options. The direction will avoid facing boxes into the prevailing weather. The sector from north through east to south-east usually provides suitable conditions for bird boxes.

Prescriptions - Ongoing Management of Bird Boxes

4.7.7. All bird boxes will be cleaned out once a year during the period 1st September to 31st February and put back in place ready for the following nesting season. Some boxes may be used during

severe weather in autumn and winter as roosting sites for smaller birds such as wrens so should ideally be left undisturbed during these conditions.

4.7.8. Any old nests will be removed entirely and the box will be cleaned with boiling water to kill-off any remaining parasites. Any damaged boxes will be repaired or replaced as necessary. The boxes will then be replaced in their original positions.

Prescriptions – Specific Nesting provision for Tawny Owls

4.7.9. These boxes are available commercially and the upright boxes would be best used in this instance as shown on the Barn Owl Trust Website https://www.barnowltrust.org.uk/barn-owl-nestbox/tawny-owl-nestbox/). One box will be included at the site (in woodland BW4) and will be installed in September/October in the first year to allow possible uptake in late winter/early spring. The nest box will be sited on one of the most mature trees within the woodland parcel, within the woodland itself rather than on the woodland edge. The box will be installed 3-4m above ground level with the box entrance facing away from the prevailing weather (i.e. avoiding west or south-westerly aspects). The box will be affixed by the Bisham Owl Nest Box Group (a local group specialising in the installation of owl boxes) or specialist volunteers. The nest box will be cleaned out periodically when debris has built up (outside of the bird nesting period).

Prescriptions - Specific Nesting provision for Kestrels

4.7.10. One kestrel nest box will be installed on to a suitable mature tree on the northern edge of PBW1 (see Figures 2a and 2b). The design of a typical nest box is shown on the Garden nature website (http://www.gardenature.co.uk/kestrel-box).

4.7.11. The nest box will be installed by October-November in year one to give the best chance of success the following year, although it may take several years before a new box is used. The box is best sited on the woodland edge trees facing the grassland in a northerly direction and will be installed at a height of 3-5m. It is important to drill several drainage holes to the bottom of the box and to place a 2-3 cm layer of woodchips or similar material (but not straw) in the box as kestrels do not construct a nest and will not nest on the bare wood (RSPB, 2013).

4.7.12. The nest box will be cleaned out periodically when debris has built up (outside of the bird nesting period).

Prescriptions - Specific Nesting provision for Little Owls

4.7.13. One little owl nest box will be installed on the southern periphery of the site (see Figures 2a and 2b). The design of a typical nest box is shown on the Barn Owl Trust website (https://www.barnowltrust.org.uk/barn-owl-nestbox/little-owl-nest-box/).

4.7.14. The nest boxes will be installed by October-November in the first year to give the best chance of success the following year, although it may take several years before a new box is used. The box will be erected horizontally a minimum of 3 metres above the ground on a tree branch so that owlets can walk in and out prior to fledging. The entrance hole to the box should be 70mm in diameter with drainage holes also to be included in the base as per the above species.

Roosting bats

Aim

4.7.15. To provide suitable, additional roosting opportunities within the site for bats.

Prescriptions – Installation of Bat Boxes

4.7.16. Six bat boxes will be installed within appropriate locations around the site. A good range of bat boxes are offered by Schwegler (www.schwegler-natur.de/index.php) or a suitable equivalent. These boxes are made from woodcrete and so are highly durable. The following box types offered would be good for the bat species likely to be present on site and will be provided:

- 3 x 2F (double-fronted option) – good for pipistrelle species and Daubenton's bats Myotis daubentonii; and
- 2 x 1FF and 2FN – also good for pipistrelle bats and good for noctule bats Nyctalus noctula. These boxes can be attached to suitable mature trees; and
- 1 x 1FW – Hibernation box suitable for a range of species and year-round use.

4.7.17. As with bird boxes, bat boxes will be installed in positions where they are out of reach of people from the ground (so as to limit interference) and high enough to deter cats and other predators. It is best not to place them too high as this makes maintenance more difficult and can leave the boxes exposed to weather, particularly strong winds. In practice, they will be placed between 3 and 4.5 metres from the ground on trees. It is useful to place different boxes in a range of locations at slightly different heights and facing in slightly different directions to give a choice of roost site options. The boxes will be positioned facing in a southerly direction (i.e. south-west through south to south-east) where they will receive a good degree of sunlight.

4.7.18. The bat boxes will be sited within woodland BW2, BW4 and PBW1 (see Figure 2).

Prescriptions - Ongoing Management of Bat Boxes

4.7.19. Bat boxes should not require any maintenance other than replacement or repair if damaged. Roosting bats are protected from disturbance under UK and EU legislation, so if any boxes need to be removed this must be done by a licensed bat worker if there is a possibility of bats being present.

4.7.20. Bat boxes will be inspected for roosting bats by licenced bat workers every two years during the active period (May to September inclusive). Records of any bats/signs of bats found during these checks will be passed on to the local biological records centre; i.e. the Thames Valley Environmental Records Centre (TVERC) and the Local Planning Authority. If nesting birds are present within the bat boxes their nests will be removed in the following autumn (October/November).

Invertebrates, Amphibians, Reptiles, Otters and Small Mammals

Aim

4.7.21. To provide additional sheltering and foraging opportunities within the site for invertebrates, amphibians, reptiles, small mammals and possibly otters.

Prescriptions - The Creation of Hibernacula (log and brash piles)

4.7.22. The arisings from the tree felling and pruning will be used to construct log/brash piles/hibernacula in the scrub, tall ruderal vegetation and woodland on the periphery of the site (see Figure 2). These hibernacula will provide sheltering and foraging habitat for reptiles and amphibians as well as providing refuge for invertebrates with larger hibernacula possibly being used by otters as a resting site. Smaller log piles will measure 2m in length by 1m in height by 1m in width with a larger log/brash piles constructed of larger logs being 4m in length by 2m in width by 1.5m in height. In order to maximise benefit for stag beetles, a proportion of the logs will be partially buried in soil in shady areas (PTES, 2016).

Prescriptions - The Maintenance of Hibernacula (log and brash piles)

4.7.23. These structures should not require any specific management. However, should they become unstable or damaged (e.g. knocked down) they will be re-built taking care to avoid harming any sheltering animals. Over time the hibernacula will eventually breakdown so it may be necessary to add new wood on occasion. The larger hibernacula will be periodically monitored using a motion-activated trail camera to determine possible use by otters.

4.8. Ecological Management Plan Review

4.8.1. The objectives and prescriptions detailed within this management plan should be followed for the first five years following adoption of the plan. Following this period, the management plan will be subjected to a full review by a suitably qualified ecologist where the effectiveness of the management practices prescribed within this plan will be assessed and reviewed where necessary.

4.9. Key Responsibilities

4.9.1. The management of site will be the responsibility of RBWM in conjunction with the Friends of Battlemead who will ensure that management of the site is undertaken in line with the details within this Management Plan. The RBWM ecologist or other suitably qualified ecologist will be contacted if any advice is required concerning the management or implementation of this management plan.

5. Management Plan Summary

5.1.1. The tables below summarise the mitigation and management measures detailed in the preceding sections of this plan document.

Habitat/Feature	Outline Prescription	Seasonal Requirements	Year(s) in which work will be undertaken					
			1	2	3	4	5	Annually
1. Enhance and maintain the diversity and quality of habitats within the site								
Semi-natural Broadleaved Woodland	Protection of woodland BW1 during carpark construction	N/A	✓					
	Woodland thinning	Between September and February inclusive	✓					(✓)***
	Tree pruning/felling	Between September and February inclusive						(✓)**
Plantation broadleaved woodland	Woodland thinning/coppicing with a minimum five trees pollarded per two-year cycle	Between September and February inclusive	✓					(✓)***
	Tree pruning/felling	Between September and February inclusive						(✓)**
	Cut of ground flora (common nettles)	Between September and February inclusive	✓Ⓞ	✓Ⓞ				✓*
Scattered broadleaved trees	Planting of new trees	N/A	✓	✓	✓			(✓)**
	Tree pruning	Between September and February inclusive						(✓)**
Standing water and wetland habitat	Management of emergent and submerged vegetation within the pond	31st October-31st January	✓		✓		✓	(✓)****
	Planting of reeds on the boundaries of the areas of standing water	April	✓	✓				

Habitat/Feature	Outline Prescription	Seasonal Requirements	Year(s) in which work will be undertaken					
			1	2	3	4	5	Annually
Semi-improved Neutral Grassland (SNG1 and SNG4)	The majority of the grass will be cut September with the hay will then be cut and the arisings removed. The sward should then be cut in late autumn to a height of 50 mm followed by a light harrowing	One cut in September with a second cut in mid-October		✓		✓		✓
	The buffer around the existing and proposed tree lines in SNG1 will be left to scrub with the additional planting of scrub	Scrub planting in year 1 between November and February. Scrub maintenance in years 2 and 4	✓	✓		✓		
Semi-improved Neutral Grassland (SNG2)	The garassland will be cut September with the hay will then be cut and the arisings removed. The sward should then be cut in late autumn to a height of 50 mm followed by a light harrowing	One cut in September with a second cut in mid-October		✓		✓		✓
Semi-improved Neutral Grassland (SNG3)	Each third of the field will be cut once every three years in order to diversify the grassland while allowing some areas to be maintained for grazing waterfowl over the winter months each year.	One cut in late summer (late August)						✓

Habitat/Feature	Outline Prescription	Seasonal Requirements	Year(s) in which work will be undertaken					
			1	2	3	4	5	Annually
	A 10m border around the grassland edge in the north, south and adjacent to the planted hedgerow on the eastern boundary will not be cut and will be allowed to succeed to scrub in order to provide additional screening for nesting and over wintering wildfowl	No seasonal requirements						
Tall Ruderal Vegetation	Scrub and ruderal vegetation within the grassland and on the site peripheries will be cut on 2-3 year rotation with scrub /ruderal vegetation cut back by 25% of their extent every other year.	Between late August and September inclusive	✓		✓		✓	
Species-poor Hedgerow (Ongoing Management)	Pruning every two years	September – March inclusive	✓		✓		✓	
Species-rich Hedgerow	Removal of choking scrub	September – March inclusive	✓	✓				
	Annual trimming and cutting back	September – March inclusive						✓
2. Enhance and Maintain Populations of Protected Species and Species of Conservation Importance.								
Nesting Birds	Installation of 5 bird boxes 3.5 m-4 m above ground level on suitable mature trees.	No seasonal requirements	✓					
	On-going management of bird boxes to include removal of old nesting material following the nesting season.	Hole fronted – October Open fronted - February						**(✓)**

Habitat/Feature	Outline Prescription	Seasonal Requirements	Year(s) in which work will be undertaken					
			1	2	3	4	5	Annually
	Installation of one kestrel box, one tawny owl box and one little owl box 3-5 m above ground level in woodland parcels/standard trees.	October-November	✓					
	On-going Management of Kestrel and Owl Boxes – periodical cleaning to remove debris.	October						(✓)
Roosting Bats	Installation of six bat boxes 3.5 m-4 m above ground level on suitable mature trees.	March	✓					
	Monitoring of bat boxes**	May-September inclusive		✓		✓		✓*
Invertebrates, Amphibians, Reptiles, Otters and Small Mammals	The creation of hibernacula (log/brash piles) 4x 2m x 1.5m height and 2 m in length by 1 m in height x 1 m in width.	No seasonal requirements	✓	(✓)				
	The maintenance of hibernacula (log/brash piles) replacement of logs as required.	No seasonal requirements						(✓)
	Monitoring of large hibernacula with trail camera	August-September	✓⊙		✓⊙		✓⊙	

Key

(✓) = Carry out if necessary

* = To be carried out every two years, ** = must first be checked by a licenced bat worker, *** = Carried out every 10 years and must first be checked by a licenced bat worker **** = if timing not possible a licence may be required from Natural England to allow management to proceed, ⓪ = 3-4 times per year in first two years and ⊙ = to be undertaken by an experienced ecologist

6. Conclusion

6.1.1. This Management Plan has been provided in support of a planning application for a car park at the western part of the site, off Lower Cookham Road, to facilitate use of parts of the site for public access. Providing the measures detailed in this document are adhered to the ecological value of the site as a whole will be maintained and enhanced in line with national and local planning policy.

7. References

Austin Foot Ecology (2019a) *Battlemead Common, Maidenhead - Ecological Appraisal*

Austin Foot Ecology (2019b) *Battlemead Common, Maidenhead – Breeding Bird Survey*

Austin Foot Ecology (2020) *Battlemead Common, Maidenhead – Great Crested Newt eDNA Survey*

Harris, S. & Yalden, D. 2008. *Mammals of the British Isles: Handbook, 4th edition*. The Mammal Society. 328-331

Mitchell- Jones, A.J (2004) *Bat Mitigation Guidelines*. English Nature.

People's Trust for Endangered Species (2016) *Stepping Stones for Stags Factsheet*

7.1. Websites

Wildlife friendly curbs: https://www.aco.co.uk/products/wildlife-kerb

Tawny owl and little owl boxes: www.barnowltrust.org.uk

Bat boxes: Schwegler website: www.schwegler-natur.de

Kestrel box: http://www.gardenature.co.uk/kestrel-box

RSPB: www.rspb.org.uk

8. Figures

Figure 1: Site Location and Survey Boundary

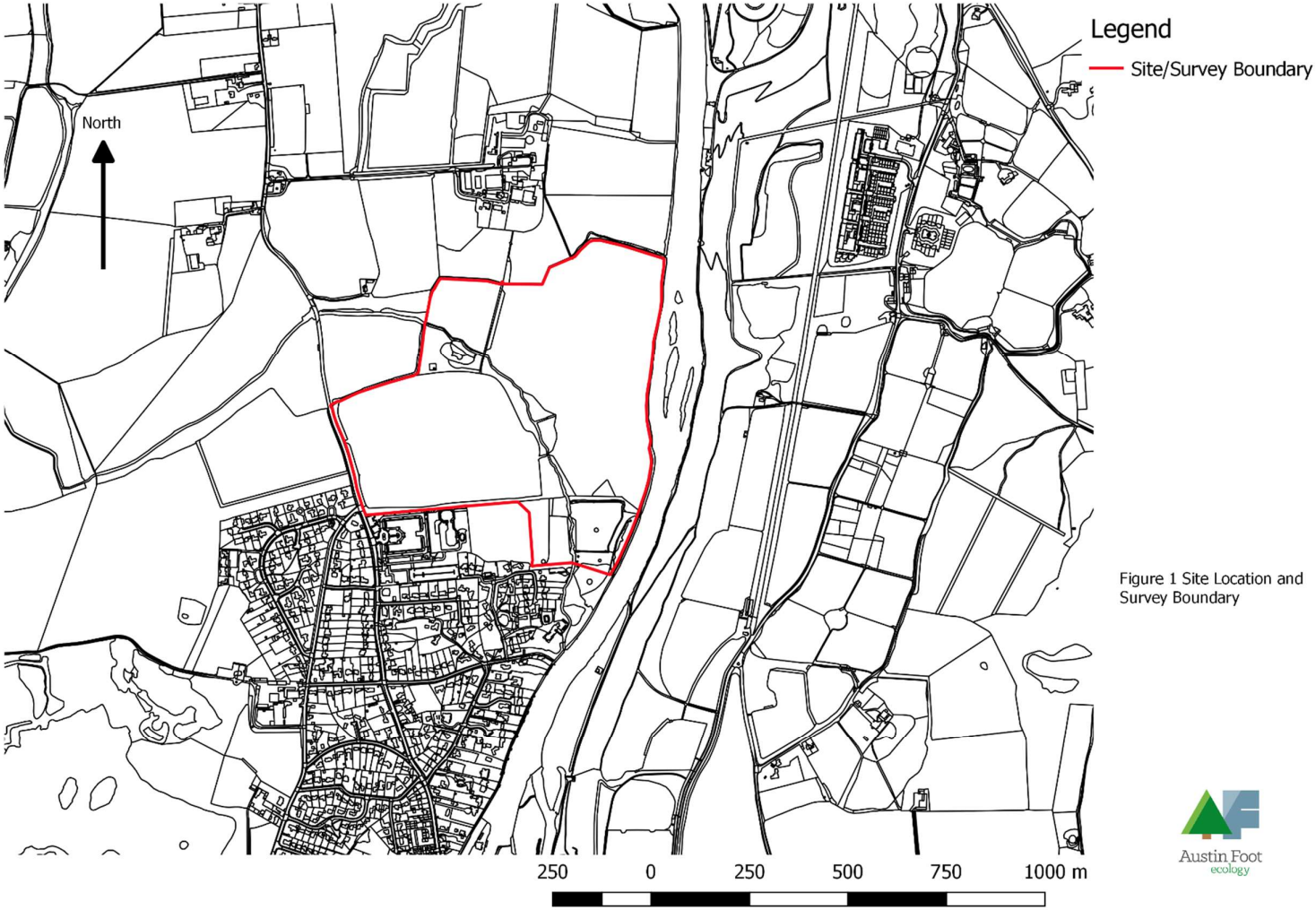


Figure 1 Site Location and Survey Boundary

130

Figure 2a: Management Prescriptions and Enhancements (1 of 2)

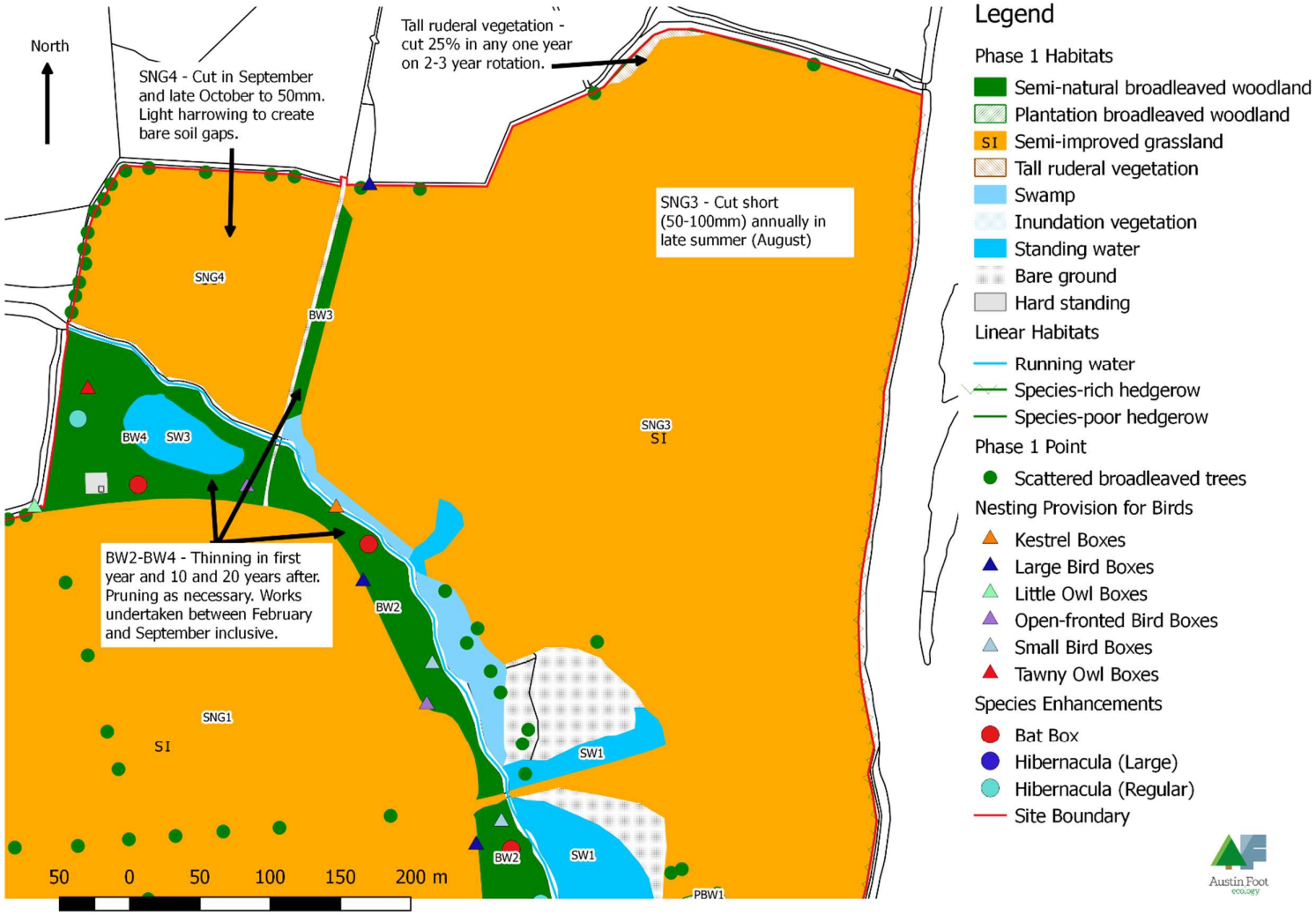


Figure 2b: Management Prescriptions and Enhancements (2 of 2)

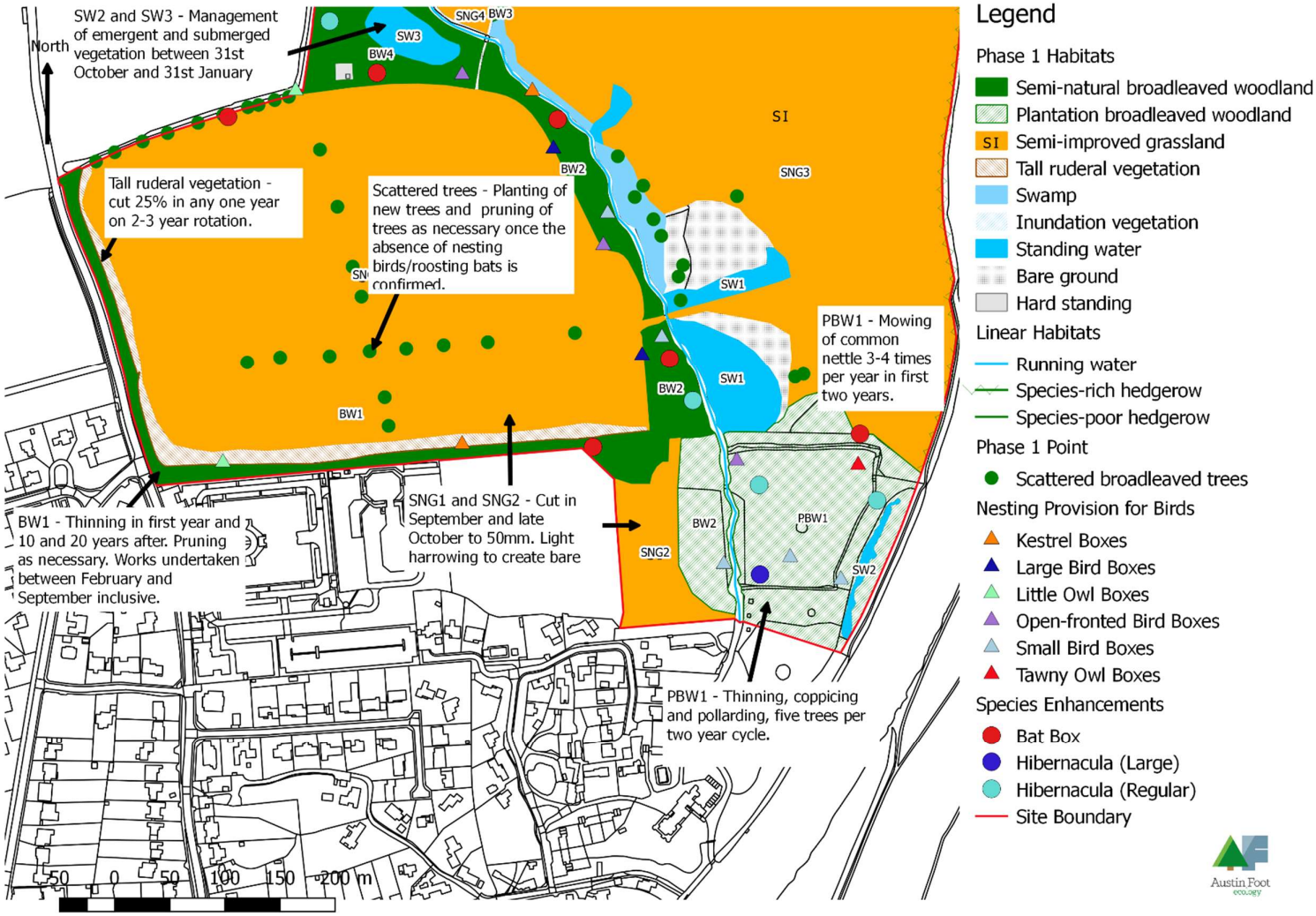
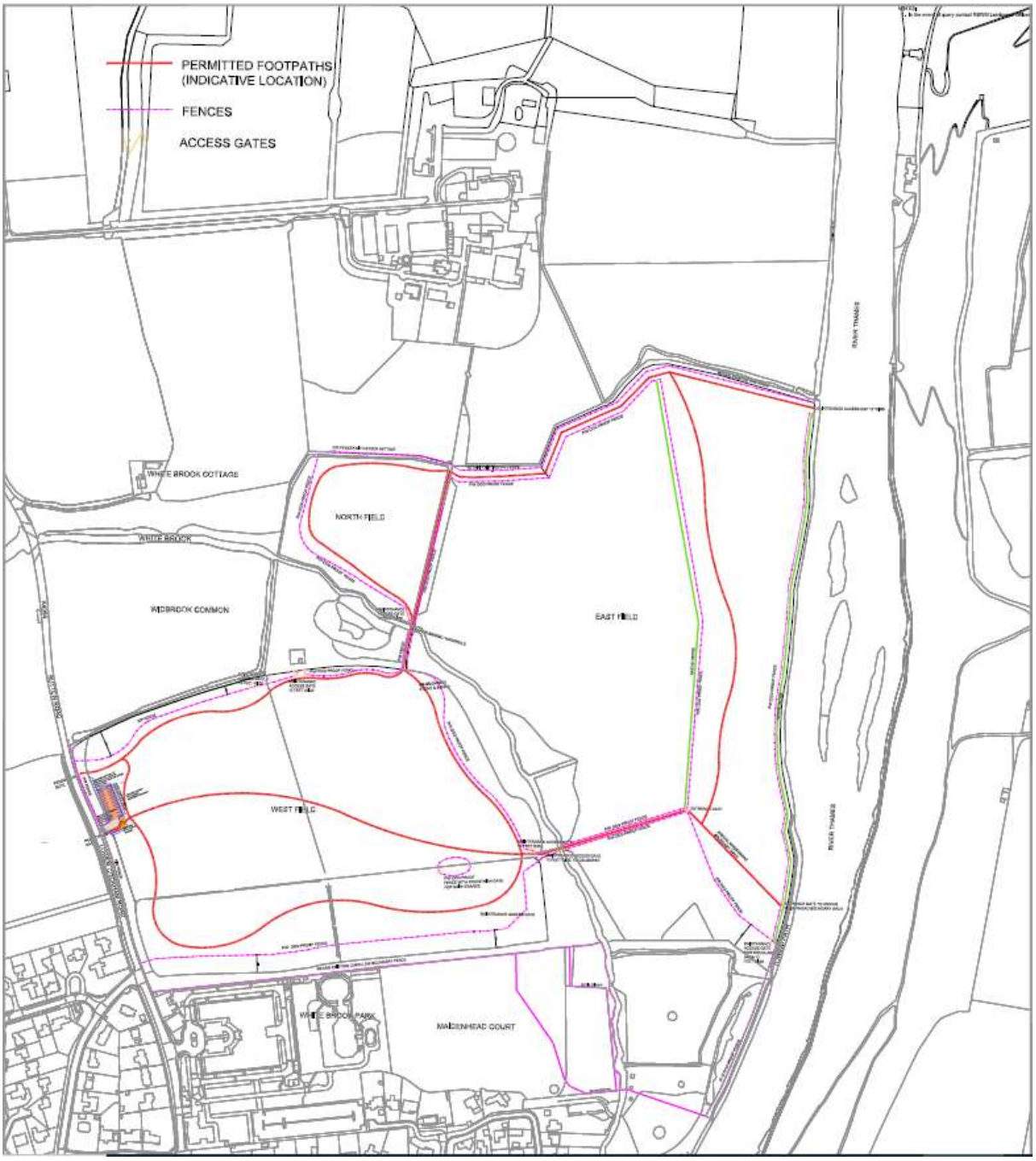


Figure 3: Fencing Plan



9. Appendix 1 – Biodiversity Impact Assessment Calculator Data

Existing Habitat Values

Berks & Oxon Biodiversity Impact Assessment

Address		Battlemead Common						
Existing								
Woodland and Scrub		Size	Quality	Comments	Calculations			
Phase 1 Habitat Description	*Phase 1 Habitat code*	*Habitat Area (ha)*	*Condition*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Condition*	Score
Broadleaved woodland - semi-natural	A1.1.1	3.114	Good		6	3	3	56
Broadleaved woodland - plantation	A1.1.2	2.762	Moderate		4	3	2	22
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
								78.148
Grassland and Marsh		Size	Quality	Comments	Calculations			Total
Phase 1 Habitat Description	*Phase 1 Habitat code*	*Habitat Area (ha)*	*Condition*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Condition*	
Neutral grassland - semi-improved	B2.2	34.539	Moderate		4	34.539	2	276
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
								276.312
Tall Herb and Fern		Size	Quality	Comments	Calculations			Total
Phase 1 Habitat Description	*Phase 1 Habitat code*	*Habitat Area (ha)*	*Condition*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Condition*	
Other tall herb and fern - ruderal	C3.1	0.634	Good		4	0.634	3	8

Swamp, Marginal and Inundation		Size	Quality	Comments	Calculations			Total
Phase 1 Habitat Description	*Phase 1 Habitat code*	*Habitat Area (ha)*	*Condition*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Condition*	
Marginal and inundation - inundation vegetation	F2.2	1.723	Good		5	1.723	3	26
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
								25.845

Open Water		Size	Quality	Comments	Calculations			Total
Phase 1 Habitat Description	*Phase 1 Habitat code*	*Habitat Area (ha)*	*Condition*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Condition*	
Standing water - mesotrophic	G1.2	0.85	Moderate		4	0.85	2	7
Running water - mesotrophic	G2.2	0.734	Good		5	0.734	3	11
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
								18

Hedgerows		Size	Quality	Comments	Calculations			Total
Phase 1 Habitat Description	*Phase 1 Habitat code*	*Length (m)*	*Condition*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Destinctiveness*	*Size*	*Condition*	
Species poor hedgerow	n/a	245	Good		1	0.0245	3	0.07
Species rich hedgerow	n/a	610	Poor	Newly planted	4	0.061	1	0.24
					0	0	0	0
					0	0	0	0
					0	0	0	0
					0	0	0	0
					0	0	0	0
					0	0	0	0
					0	0	0	0
					0	0	0	0
								0.3175

Miscellaneous		Size	Quality	Comments	Calculations			Total
Phase 1 Habitat Description	*Phase 1 Habitat code*	*Habitat Area (ha)*	*Condition*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Condition*	
Bare ground	J4	0.254	Good		1	0.254	3	0.76
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
					0	0	0	
								0.76

Total Habitat Area (ha)	44.61

Proposed Habitat Values

Berks & Oxon Biodiversity Impact Assessment

Address	Battlemead Common
Proposed	Habitat Area (ha): 0

Woodland and Scrub		Size	Action			Quality & Risk		Comments	Calculations							Score
Phase 1 Habitat Description	*Phase 1 Habitat Code*	*Habitat Area (ha)*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target (years)*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Retain*	*Create*	*Restore*	*Target Condition*	*Time to target*	Score
Broadleaved woodland - semi-natural	A1.1.1	3.114			Yes	Good	10		6	3	0	0	1.6	3	1.4	64
Broadleaved woodland - plantation	A1.1.2	2.762			Yes	Good	5		4	3	0	0	1.6	3	1	44
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
																108

Grassland and Marsh		Size	Action			Quality & Risk		Comments	Calculations							Score
Phase 1 Habitat Description	*Phase 1 Habitat Code*	*Habitat Area (ha)*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target (years)*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	Size	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target*	Score
Neutral grassland - semi-improved	B2.2	15.199			Yes	Good	5	North Field, (SNG4), Grassland to south (SNG2) and part of east fiel	4	15	0	0	1.6	3	1.2	243
Neutral grassland - semi-improved	B2.2	6.79			Yes	Moderate	5	Part of east field open to public (SNG3)	4	7	0	0	1.6	2	1.2	72
Neutral grassland - semi-improved	B2.2	11.66			Yes	Moderate	5	West field open to public and dogs off leads	4	12	0	0	1.6	2	1.2	124
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
																440

Tall Herb and Fern		Size	Action			Quality & Risk		Comments	Calculations							Score
Phase 1 Habitat Description	*Phase 1 Habitat Code*	*Habitat Area (ha)*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target (years)*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target*	Score
Other tall herb and fern - ruderal	C3.1	0.634	Good						4	1	3.0	0	0	0	0	8

Swamp, Marginal and Inundation		Size	Action			Quality & Risk		Comments	Calculations							
Phase 1 Habitat Description	*Phase 1 Habitat Code*	*Habitat Area (ha)*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target (years)*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target*	Score
Marginal and inundation - inundation vegetation	F2.2	1.723			Yes	Good	5		5	2	0	0	1.8	3	1.2	39
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
																39

Open Water		Size	Action			Quality & Risk		Comments	Calculations							
Phase 1 Habitat Description	*Phase 1 Habitat Code*	*Habitat Area (ha)*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target (years)*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target*	Score
Standing water - mesotrophic	G1.2	0.85			Yes	Good	5		4	1	0	0	1.6	3	1.2	14
Running water - mesotrophic	G2.2	0.734			Yes	Good	5		5	1	0	0	1.6	3	1.2	15
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
																28.28

Rock Exposure and Waste		Size	Action			Quality & Risk		Comments	Calculations							
Phase 1 Habitat Description	*Phase 1 Habitat Code*	*Habitat Area (ha)*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target (years)*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target*	Score
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
									0	0	0	0	0	0	0	0
																0

Hedgerows		Size	Action			Quality & Risk		Comments	Calculations							Total
Phase 1 Habitat Description	*Phase 1 Habitat Code*	*Length (m)*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target (years)*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target*	
Species poor hedgerow	n/a	245	Good						1	0.02	3.0	0	0	0	0	0.07
Species rich hedgerow	n/a	610			Yes	Good	10	Along Thames path	4	0.06	0	0	1.8	3	1.4	0.94
Species rich hedgerow	n/a	595		Yes		Good	10	ong fenceline in the east field	4	0.06	0	0.8	0	3	1.4	0.41
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00

Miscellaneous		Size	Action			Quality & Risk		Comments	Calculations							
Phase 1 Habitat Description	*Phase 1 Habitat Code*	*Habitat Area (ha)*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target (years)*	*Please provide comments on your decisions where necessary*	*Phase 1 Habitat Distinctiveness*	*Size*	*Retain*	*Create*	*Restore*	*Target condition*	*Time to target*	Score
Bare ground	J4	1.144	Good						1	1	3	0	0	0	1.0	3.43
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
									0	0	0	0	0	0	0	0.00
																3.43

Total Area (ha)	44.61

Summary – Net Gain/Net Loss

Berks & Oxon Biodiversity Impact Assessment			
Address	Battlemead Common		

Phase 1 habitat	Existing Score	Proposed Score	Difference
Woodland and Scrub	78.1	108.3	30.1
Broadleaved woodland - semi-natural	56.1	64.1	8.0
Broadleaved woodland - plantation	22.1	44.2	22.1
Mixed woodland - semi-natural	0.0	0.0	0.0
Mixed woodland - plantation	0.0	0.0	0.0
Scrub - dense/continuous	0.0	0.0	0.0
Scrub - scattered	0.0	0.0	0.0
Parkland/scattered trees - broadleaved	0.0	0.0	0.0
Parkland/scattered trees - coniferous	0.0	0.0	0.0
Parkland/scattered trees - mixed	0.0	0.0	0.0
Coniferous woodland - semi-natural	0.0	0.0	0.0
Coniferous woodland - plantation	0.0	0.0	0.0
Recently felled woodland	0.0	0.0	0.0
Recently felled woodland - broadleaved	0.0	0.0	0.0
Recently felled woodland - coniferous	0.0	0.0	0.0
Recently felled woodland - mixed	0.0	0.0	0.0
Recently planted woodland	0.0	0.0	0.0
Orchard	0.0	0.0	0.0
Grassland and Marsh	276.3	440.0	163.7
Acid grassland - unimproved	0.0	0.0	0.0
Acid grassland - semi-improved	0.0	0.0	0.0
Neutral grassland - unimproved	0.0	0.0	0.0
Neutral grassland - semi-improved	276.3	440.0	163.7
Calcareous grassland - unimproved	0.0	0.0	0.0
Calcareous grassland - semi-improved	0.0	0.0	0.0
Improved grassland	0.0	0.0	0.0
Marsh/marshy grassland	0.0	0.0	0.0

Phase 1 habitat	Loss / Gain
Woodland and Scrub	30.10
Grassland and Marsh	163.67
Tall Herb and Fern	0.00
Heathland	0.00
Mire	0.00
Swamp, Marginal and Inundation	12.92
Open Water	10.47
Rock Exposure and Waste	0.00
Hedgerows	1.11
Miscellaneous	2.67
Total biodiversity units	220.9

Poor semi-improved grassland	0.0	0.0	0.0
Tall Herb and Fern	7.6	7.6	0.0
Bracken - continuous	0.0	0.0	0.0
Bracken - scattered	0.0	0.0	0.0
Other tall herb and fern - ruderal	7.6	7.6	0.0
Other tall herb and fern - non ruderal	0.0	0.0	0.0
Heathland	0.0	0.0	0.0
Dry dwarf shrub heath - acid	0.0	0.0	0.0
Dry dwarf shrub heath - basic	0.0	0.0	0.0
Wet dwarf shrub heath	0.0	0.0	0.0
Lichen/bryophyte heath	0.0	0.0	0.0
Dry heath/acid grassland	0.0	0.0	0.0
Wet heath/acid grassland	0.0	0.0	0.0
Mire	0.0	0.0	0.0
Fen - valley mire	0.0	0.0	0.0
Fen - basin mire	0.0	0.0	0.0
Fen - flood plain mire	0.0	0.0	0.0
Swamp, Marginal and Inundation	25.8	38.8	12.9
Swamp	0.0	0.0	0.0
Marginal and inundation - marginal vegetation	0.0	0.0	0.0
Marginal and inundation - inundation vegetation	25.8	38.8	12.9
Open Water	17.8	28.3	10.5
Standing water - eutrophic	0.0	0.0	0.0
Standing water - mesotrophic	6.8	13.6	6.8
Standing water - oligotrophic	0.0	0.0	0.0
Standing water - dystrophic	0.0	0.0	0.0
Standing water - marl	0.0	0.0	0.0
Standing water - brackish	0.0	0.0	0.0
Running water - eutrophic	0.0	0.0	0.0
Running water - mesotrophic	11.0	14.7	3.7
Running water - oligotrophic	0.0	0.0	0.0
Running water - dystrophic	0.0	0.0	0.0
Running water - marl	0.0	0.0	0.0
Running water - brackish	0.0	0.0	0.0

Rock Exposure and Waste	0.0	0.0	0.0
Quarry	0.0	0.0	0.0
Mine	0.0	0.0	0.0
Refuse-tip	0.0	0.0	0.0
Spoil	0.0	0.0	0.0
Hedgerows	0.3	1.4	1.1
Species rich hedgerow	0.2	1.3	1.1
Species rich hegderow (with bank or ditch)	0.0	0.0	0.0
Species poor hedgerow	0.1	0.1	0.0
Speceis poor hedgerow (with bank or ditch)	0.0	0.0	0.0
Line of trees	0.0	0.0	0.0
Line of trees (with bank or ditch)	0.0	0.0	0.0
Miscellaneous	0.8	3.4	2.7
Bare ground	0.8	3.4	2.7
Built Environment: Buildings/harstanding	0.0	0.0	0.0
Built Environment: Gardens (lawn and planting)	0.0	0.0	0.0
Buildings and Hardstanding	0.0	0.0	0.0
Gardens	0.0	0.0	0.0
Allotments	0.0	0.0	0.0
Caravan site	0.0	0.0	0.0
Buildings	0.0	0.0	0.0
Cultivated/disturbed land - arable	0.0	0.0	0.0
Cultivated/disturbed land - amenity grassland	0.0	0.0	0.0
Cultivated/disturbed land - ephemeral/short perennial	0.0	0.0	0.0
Introduced shrub	0.0	0.0	0.0
Other habitat	0.0	0.0	0.0
Dry ditch	0.0	0.0	0.0
Boundary removed	0.0	0.0	0.0
Earth bank	0.0	0.0	0.0
Fence	0.0	0.0	0.0
Wall	0.0	0.0	0.0
Artificial sea wall	0.0	0.0	0.0
Reedbed	0.0	0.0	0.0

Cemetery	0.0	0.0	0.0
Green roof	0.0	0.0	0.0
Green wall	0.0	0.0	0.0

Battlemead Common, Maidenhead, Berkshire – Willow Woodland

Preliminary Ecological Appraisal

For Royal Borough of Windsor and Maidenhead

May 2021

Project Number	0286.08
Client Reference	Royal Borough of Windsor and Maidenhead
Project/Site Name	Battlemead Common, Maidenhead – Willow Woodland
Report Title	Preliminary Ecological Appraisal

Version Number	Date	Author	Reviewer
001	27/05/2021	Stephen Foot	Ed Austin

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1. Non-technical Summary

1.1.1. The Royal Borough of Windsor and Maidenhead (RBWM) are exploring the possibility of creating a boardwalk and footpath in the south-east of Battlemead Common (hereafter referred to as "the Site") to create a circular walking route. Austin Foot Ecology was commissioned by RBWM to undertake a Preliminary Ecological Appraisal (PEA) comprising an extended Phase 1 habitat survey and ground-level tree assessment (GLTA) to determine any ecological constraints and opportunities associated with the proposals and the Site.

1.1.2. An extended Phase 1 habitat survey revealed the Site to predominantly comprise plantation broadleaved woodland dominated by willow with areas of semi-natural broadleaved woodland, standing water, running water (the White Brook), tall ruderal vegetation and semi-improved neutral grassland. Badger setts in the north-west of the Site were assessed to determine their current status with Himalayan balsam, an invasive non-native plant, identified in the north of the Site.

1.1.3. All trees were assessed within the Site boundary during the GLTA. Of these 92 trees/tree groups had features suitable for use by roosting bats. The results were as follows:

- 15 trees had high potential to support roosting bats;
- 24 trees had moderate potential to support roosting bats; and
- 53 trees/tree groups had low potential to support a bat roost.

1.1.4. The appraisal of the field surveys found that the Site has the potential to support the following species/species groups (see overleaf for summary table):

- Foraging and sheltering habitats for invertebrates (including stag beetles);
- Habitats for fish (in the White Brook) including European eels and bullhead;
- Foraging, sheltering and overwintering habitats for common toads;
- Sheltering and overwintering habitat for reptiles;
- Roosting, foraging and commuting habitat for bats;
- Badger setts and suitable foraging habitat for badgers; and
- Foraging and sheltering habitat for foxes, deer and hedgehogs.

1.1.5. In the absence of appropriate restrictions/controls the opening of the Site to the public may have an adverse impact upon the use of the Site by protected or notable species. Further survey for bats has been put forward with regard to the felling of trees to allow construction of the boardwalk and to make the area safe for the public. Mitigation measures are included within this report in order to ensure that the proposals remain acceptable in legislative terms in relation to protected species and habitats.

Summary of Protected Species and Species of Conservation Importance Considered in this Assessment

Species/Species Group	Status on Site	Recommendations/Further Action
Invasive flora	An area of Himalayan balsam was identified close to the White Brook in the north of the Site	• A specialist contractor should be employed to remove this plant from this area to prevent future spread along the White Brook to the wider Battlemead Common site or offsite areas.
Invertebrates (stag beetle and other species)	Suitable habitat for stag beetles (a Species of Principal Importance [SPI]) and a range of other invertebrates (some of which are SPIs) are present on Site.	• Pollution prevention measures must be adhered to during works to avoid impacts upon aquatic macroinvertebrates. • Creation of additional dead wood habitats to provide foraging and sheltering habitats for stag beetles.
Fish	Possible presence of fish in White Brook including European eel and bullhead.	• Pollution prevention measures must be adhered to during works.
Common toads	Likely present on Site given habitat present.	• Common toads should be watched for during removal of log and brash piles.
Reptiles	Potentially present given habitats present.	• No further survey required. • Works to be undertaken in late summer when reptiles are active to allow animals to move out of the works area. Works not to be undertake over the winter period (November-March).
Roosting, commuting and foraging bats	Numerous trees were present with the potential to support roosting bats with the Site also providing high quality commuting and foraging habitat.	• Trees requiring felling/pruning should be subjected to further dusk emergence and dawn return to roost surveys depending upon the level of roosting suitability assigned. If roosting bats are found a licence may be required to allow works to proceed lawfully.

Species/Species Group	Status on Site	Recommendations/Further Action
Badgers	Numerous badger setts were located on Site.	• Where the boardwalk is to pass close to outlier setts a 20m buffer will need to be maintained. An ecologist should be consulted with regard to the placement of posts in this area to ensure that damage to a badger sett does not occur. Please note that if this cannot be adhered to then a licence from Natural England may be required to close the sett to ensure works can proceed lawfully. • Setts should be fenced with a minimum of a 10-20m buffer to prevent access to setts by members of the public and dogs etc. Badger gates should be installed in fencing to allow badgers to continue to move freely throughout the Site and wider Battlemead Common area.
Other Mammals (foxes, deer and hedgehogs)	Foxes, hedgehogs and deer are likely present/ were noted during the survey.	• Fencing of some of the woodland habitats will potentially fragment habitat available for these animals. • Hedgehogs should be watched for during removal of logs and brash. Any hedgehogs found should be moved to retained vegetation outside of the works area.

2. Introduction

2.1. Site and Project Description

2.1.1. The Site that is the subject of this report predominantly comprises parcels of woodland in the south-eastern corner of Battlemead Common. The central grid reference is SU 90592, 83577. The Site is bordered to the east by a public footpath and the River Thames, to the west by an Environment Agency flood defence bund with Maidenhead Court and White Brook Business Park beyond, to the north by wetland habitat and grassland within Battlemead Common and to the south by woodland and residential development. The Site covers an area of approximately 3.15ha comprising semi-natural broadleaved woodland, plantation woodland, a stretch of the White Brook, wetland habitat (including a waterbody) and a small area of grassland and tall ruderal vegetation in the north-west. The Site boundary is shown in Figure 1.

2.1.2. The Royal Borough of Windsor and Maidenhead (RBWM) are exploring options to install a pathway/boardwalk (including the reinstatement of a bridge across the White Brook) through the plantation woodland to allow for a circular route to be created around the wider Battlemead Common site. The boardwalk is to be fenced (with dog-proof fencing) either side with fencing also proposed around the perimeter of the Site. This option is being pursued as an alternative to avoid the need for crossing the causeway over the brook to the north (given sensitivities to over-wintering birds). The proposed route of the boardwalk and footpath is shown in Figure 4.

2.2. Ecological Context

2.2.1. A number of ecological surveys have been undertaken on the wider Battlemead Common site and these are summarised below.

2.2.2. An Ecological Appraisal consisting of an ecological desk study, extended Phase 1 habitat survey, River Corridor Survey (RCS) and Habitat Suitability Index (HSI) assessment of waterbodies within the wider Battlemead Common area was undertaken in May 2019 (Austin Foot Ecology, 2019a). The desk study highlighted the presence of a number of protected species and species of conservation importance within a 2km radius of Battlemead Common including invertebrates, fish, amphibians, reptiles, birds, bats, badgers and otters. Some of these species/species groups were known to be or could have been associated with the habitats found in Battlemead Common.

2.2.3. An extended Phase 1 habitat survey revealed Battlemead Common to predominantly comprise semi-improved grassland with areas of broadleaved woodland, plantation broadleaved woodland, scattered mature trees, standing open water, running water (the White Brook), inundation vegetation, tall ruderal vegetation, a length of recently planted species-rich hedgerow and a length of established species-poor native hedgerow. Incidental observations of fauna during the site visit included a number of common and widespread invertebrate and bird species (including evidence of barn owls) and mammals (including foxes, rabbits, roe deer and Muntjac deer). Badger setts were found to be present along with evidence of use of the Brook corridor by North American mink (*Neovision vision*). The ecological appraisal concluded that Battlemead Common had the potential to support the following:

- Foraging and sheltering habitats for invertebrates (including stag beetles);
- Breeding, foraging, sheltering and overwintering habitats for great crested newts and common toads;
- Foraging and sheltering habitat for reptiles;
- Foraging, nesting and overwintering habitat for a diverse assemblage of birds;
- Roosting foraging and commuting habitat for bats;
- Badger setts and suitable foraging habitat for badgers; and
- Foraging and sheltering habitat for foxes, deer and rabbits.

2.2.4. Following (and concurrently with) the Ecological Appraisal the following surveys were also conducted within the Battlemead Common site:

- *Breeding Bird Survey* – A breeding bird survey was undertaken between late April 2019 and mid June 2019 (Austin Foot Ecology, 2019b). This survey identified 44 species of bird as confirmed, probably or possibly breeding on site or the immediate vicinity. The assemblage was dominated by common and widespread species (e.g. thrushes, tits, robins and wrens, etc.). However, twelve species of varying conservation concern were also recorded, including two specially protected (Schedule 1) species; the barn owl and kingfisher (albeit nesting on site was not confirmed for either). Overall, the wetland and woodland areas plus associated corridors of trees, hedgerows and scrub (particularly through the central part of the site) were found to be of most value to breeding bird species in their current form.
- *Overwintering Bird Survey* – An overwintering bird survey was undertaken between September 2019 and March 2020 (Austin Foot Ecology, 2020a). The survey recorded an overall assemblage of 60 species using the site, with many species regularly occurring and some being infrequent or only present in very low numbers. The site was found to have value to wintering birds at the Local level with the central brook corridor and associated wetland areas in the south-east of the site being of greatest value.
- *eDNA Assessment* – Water samples were collected from three waterbodies within the site (assessed as having the potential to support great crested newts) in June 2020 (Austin Foot Ecology, 2020b). This included the waterbody located within the woodland in the south-east of Battlemead Common (the site that is the subject of this report). All samples came back negative confirming an absence of great crested newts from the waterbodies on site.

2.2.5. An update breeding bird survey has also been commissioned and is being undertaken between April and mid-June 2021. An assessment of the implications relating to the use of the Site by nesting birds will be fully detailed in the stand-alone bird report following completion of the breeding bird survey and as such this species group will only be briefly considered within this assessment.

2.2.6. Targeted survey effort for otters (*Lutra lutra*) and water voles (*Arvicola amphibius*) along the White Brook (where it passes through the Site) and the woodland habitat (for otters) as well as the adjacent River Thames (where it lies alongside to the Site) is also being undertaken in June 2021 and September 2021. These species will also be fully considered in a separate dedicated report.

2.3. Aims of Study

2.3.1. Austin Foot Ecology was commissioned to undertake a preliminary ecological appraisal (PEA) of the Site comprising an extended Phase 1 habitat survey and ground-level tree assessment (GLTA). The main aims of this report are to:

- Describe the habitats present within the Site;
- Detail the results of the GLTA survey;
- Assess the potential for the Site to support protected or notable species;
- Set out the legislative protection afforded to any habitats present or any species potentially associated with the Site;
- Present a preliminary assessment of any potential ecological impacts of the proposals based on the survey findings and current proposals;
- Provide recommendations for any further surveys if considered necessary; and
- Provide recommendations on potential mitigation and compensation to ensure that the proposals will remain acceptable in legislative terms.

2.3.2. An Ecological Management Plan was prepared for the Site in April 2020 (Austin Foot Ecology, 2020c). As such management prescription for the Site will not be covered within this report.

3. Method

3.1. Survey Area

3.1.1. The Survey Area extended from the bank of the River Thames in the east to the EA flood defence bund in the west. The northern boundary followed the woodland edge with the southern boundary running along tributary of the White Brook (dry at the time of survey) (see Figure 1).

3.2. Extended Phase 1 Habitat Survey

3.2.1. The extended Phase 1 habitat survey was undertaken by Stephen Foot MCIEEM and Ed Austin MCIEEM on 18th May 2021. Habitats within the Site were identified and described following standard JNCC Phase 1 habitat survey methodology as detailed in the Phase 1 Habitat Survey Handbook (JNCC, 2016). This uses a system of codes to describe different habitat types based on the dominant vegetation present. The relative abundance of botanical species present in each habitat type was characterised using the DAFOR scale where D is Dominant, A is Abundant, F is Frequent, O is Occasional and R is Rare. The survey was extended to give particular consideration to the potential of the habitats present to support protected species or species of conservation importance.

3.2.2. The weather conditions during the site visit were largely dry with intermittent showers and partially cloudy skies (cloud cover was 4/8-5/8). A light-moderate breeze was present throughout the survey (Beaufort scale F2-F3) with air temperatures ranging between 14˚C and 16˚C during the survey.

3.3. Ground-Level Tree Assessment

3.3.1. An assessment of the potential for all trees within the Site boundary to support opportunities for roosting bats was undertaken on 30th April 2021. Weather conditions were dry with partially cloudy skies (5/8 cloud cover) with a light breeze (Beaufort Scale F2) and air temperatures ranging between 10˚C and 12˚C.

3.3.2. All trees were inspected from the ground, using binoculars and a high-powered torch as necessary to facilitate the identification and investigation of features offering potential opportunities for roosting bats (e.g. ivy cover, rot holes, woodpecker holes, splits in branches or the trunk and loose or lifted bark, etc.). Information on the type (species) of each tree, estimated height and the location/aspect of potential features was also recorded.

3.3.3. The Bat Conservation Trust has developed a survey protocol (Collins, 2016) which categorises the potential for trees to support roosting bats. Using the categories detailed below, an assessment was made of the potential for each tree/group of trees included within the survey to support roosting bats:

- Known or Confirmed Roost: Confirmed bat roost with field evidence of the presence of bats,
- High Potential: Trees with multiple highly suitable features capable of supporting larger roosts.
- Medium Potential: Trees with definite bat potential supporting fewer features than high potential trees.

- Low Potential: Trees with no obvious potential although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.
- Negligible Potential: Trees with no potential to support bat roosts (Trees with no obvious features with potential to support a bat roost).

3.4. Survey Limitations

3.4.1. Different plant species are more or less evident at different times of year depending on their growth cycle. A single visit will only therefore capture information representative of the time of year selected. As the Phase 1 habitat survey was completed in May 2021 some later flowering species may, therefore, have been absent or less visually dominant in the sward than during a later survey. However, May is within the optimal period for conducting Phase 1 habitat surveys and the majority of plant species present would have been in evidence at least in their vegetative state such that the habitat types present could be accurately determined. There were therefore no significant limitations to the Phase 1 habitat survey.

3.4.2. The GLTA was undertaken just as trees were coming into leaf. Therefore, it is possible that leaves may have obscured some features offering potential roosting opportunities to bats. However, it was still possible to make an assessment of the trees' potential despite this given the proportion of the tree trunk and branches that were visible. As such it is considered that it was possible to robustly assess the potential of the trees on Site to support roosting bats.

3.5. Personnel

3.5.1. Stephen Foot MCIEEM has worked as a professional ecologist since 2005 and has holds Natural England licences to survey for great crested newts, hazel dormice, bats, barn owls, smooth snakes and sand lizards. During this time, he has undertaken an extensive number of extended Phase 1 habitat surveys throughout the UK surveying a diverse array of habitat types. He is also fully competent in assessing the potential of a site to support protected species and species of conservation importance.

3.5.2. Ed Austin MCIEEM has been in continuous employment as a professional ecologist since 2004 and began his career in environmental consultancy in 2002. He has completed many ecological site assessments and has extensive experience in using the RCS, River Habitat Survey (RHS) and extended Phase 1 habitat survey methods. Prior to becoming a full-time ecologist, Ed was employed as part of a 'fluvial audit' team completing baseline surveys and mapping of major watercourses around the UK. In addition, Ed has undertaken a wide range of projects utilising species-specific survey and assessment techniques (e.g. for amphibians, reptiles, bats, badgers, otters and water voles). He specialises in botanical and ornithological assessment and holds Natural England licences for white-clawed crayfish and great crested newts.

4. Results and Interpretation

4.1.1. This section sets out the results of the desk study and field surveys. The implications of the results are then explored with reference to current legislation.

4.2. Habitats

4.2.1. The following Phase 1 habitat types were recorded during the field survey:

- Semi-natural broadleaved woodland
- Plantation broadleaved woodland
- Scattered trees
- Standing water
- Running water
- Semi-improved grassland
- Tall ruderal vegetation

4.2.2. The distribution of these habitats is shown on Figure 2 with summary descriptions given below. Target notes (TNs) referred to in the text below and on Figure 2 are provided in Appendix 2 along with a selection of photographs.

Semi-natural broadleaved woodland (BW1 and BW2)

4.2.3. A parcel of semi-natural broadleaved woodland was present in the north-west of the Site along the western edge of the White Brook (BW1). The canopy layer of this woodland supported abundant lime (*Tilia* sp.) with frequent Norway maple and occasional pedunculate oak (*Quercus robur*), horse chestnut (*Aesculus hippocastanum*) and poplar (*Populus* sp.). Some willow (*Salix* sp.) and alder (*Alnus glutinosa*) trees were present on the eastern edge of this woodland parcel adjacent to the brook bank. The ground flora comprised frequent to abundant garlic mustard (*Alliaria petiolata*) with occasional common nettle (*Urtica dioica*) and herb Robert (*Geranium robertianum*).

4.2.4. BW2 lay to the north of a barbwire fence to the north of the plantation woodland PBW3. This strip of woodland supported frequent horse chestnut with occasional poplar, lime, willow, Norway maple and ash. The ground flora supported abundant garlic mustard and common nettle. Himalayan balsam (*Impatiens glandulifera*) was noted to be present on the edge of this woodland parcel close to the White Brook.

Plantation broadleaved woodland (PBW1-3)

4.2.5. Three stands of plantation broadleaved woodland were present within the Site. The first of these (PBW1) was located in the north-western corner of the Site to the west of the flood defence bund. The canopy layer of this small parcel of woodland was dominated by white poplar (*Populus alba*) with the ground flora being dominated by common nettle with abundant cleavers. PBW2 was located to the west of the White Brook to the east of the flood defence bund. The canopy layer of this mature woodland parcel was dominated by willow (likely white and crack willow) with occasional mature poplar and pedunculate oak. The shrub layer was sparse within this woodland parcel with rare elder (*Sambucus nigra*) and hawthorn (*Crataegus*

monogyna) present. The ground flora was dominated by common nettle with abundant cleavers and occasional comfrey (*Symphytum officinale*), rough meadow grass (*Poa trivialis*), garlic mustard, lesser celandine (*Ficaria verna*) and remote sedge (*Carex remota*). Large areas of this woodland, particularly close to the brook held standing water supporting a number of aquatic and marginal macrophytes (see TN5 in Figure 2). Species present included locally frequent greater pond sedge (*Carex riparia*) with occasional gypsywort (*Lycopus europaeus*), fool's watercress (*Apium nodiflorum*), water mint (*Mentha aquatica*), water forget-me-not (*Myosotis scorpiodes*) and hemlock water dropwort (*Oenanthe crocata*).

4.2.6. PBW3 covered the majority of the Site and comprised rows of willow trees planted over grassland (likely used as pasture in the past). The willows ranged from semi-mature to mature in age and were possibly planted for timber use originally. Other trees within this woodland parcel included occasional mature poplar with ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*) though these were largely restricted to the eastern boundary of the Site adjacent to SW1 and the footpath along the River Thames. Shrubs were limited within this woodland to small stands of hawthorn with the ground flora being dominated by common nettle with abundant rough meadow grass, frequent cleavers and wavy bittercress (*Cardamine flexuosa*) (Close to the White Brook) and occasional wood dock (*Rumex sanguineus*) false-wood brome (*Brachypodium sylvaticum*) and timothy (*Phleum pratense*).

Standing water

4.2.7. A linear waterbody was located in the east of PBW3. This waterbody was shallow (approx. 20-30cm) with a dense covering of common duckweed (*Lemna minor*). Remote sedge and greater pond sedge were present along the margins with a small stand of orange balsam (*Impatiens capensis*) also noted.

Running water

4.2.8. A stretch of the White Brook runs through willow woodland. The channel in this section of the Brook had a water depth of up to 1m or more (the bed often not being visible) with a soft silt substrate and channel width of approximately 7m to 8m. Banks were of earth material and shallowly sloping into the channel, often being stabilised by the roots of trees. In places the right bank was less definite, with the channel overflowing into the wet woodland beyond. Flow was essentially static or very slow with a lot of slack water sections. A defunct (incomplete) vehicle bridge was noted toward in the northern half of the Site. Marginal vegetation included greater pond sedge, gypsywort and water mint.

Semi-improved grassland

4.2.9. A small area of semi-improved neutral grassland was located in the north-west of the Site. The sward supported a range of grasses herbs and forbs including frequent perennial rye-grass (*Lolium perenne*) and rough meadow grass (*Poa trivialis*) with occasional cock's-foot (*Dactylis glomerata*, Italian rye-grass (*Lolium multiflorum*), Yorkshire fog (*Holcus lanatus*) and soft brome (*Bromus hordeaceus*). Herbs and forbs in this area of the field included abundant dandelion (*Taraxacum* agg)., frequent creeping buttercup (*Ranunculus repens*) with locally frequent shepherd's purse (*Capsella bursa-pastoris*) and occasional yarrow (*Achillea millefolium*),

common vetch (*Vicia sativa*), common field speedwell (*Veronica persica*), common mouse-ear (*Cerastium fontanum*) and prickly sow thistle (*Sonchus asper*).

Tall ruderal vegetation

4.2.10. Tall ruderal vegetation bordered the woodland parcel in the north western corner of the Site. This area was dominated by common nettle with occasional hemlock (*Conium maculatum*), teasel (*Dipsacus fullonum*), creeping thistle (*Cirsium arvense*) and curled dock (*Rumex crispus*). Field forget-me-not (*Myosotis arvensis*), garlic mustard and bramble was also present.

Habitat Summary

4.2.11. The Site consists of a range of habitat types with plantation broadleaved woodland being the dominant habitat type present. The small area of grassland and ruderal vegetation in the north-west present supported common widespread, readily established species and as such have a limited intrinsic ecological value in isolation with the exception of their ability to provide habitats for fauna associated with the Site. However, the semi-natural broadleaved woodland parcels and possibly the White Brook are classified as Habitats of Principal Importance in England on a list drawn up in response to the requirements of Section 41 of the Natural Environment and Rural Communities Act, 2006 (see Appendix 3). In addition, the combination of these semi-natural habitats also increases their value in the local context.

4.3. Protected Species and Species of Conservation Importance

4.3.1. This section presents any evidence of protected species or species of conservation importance identified during the survey and evaluates the potential for the Site to support other species. The relevant legislation for each species or species group is also briefly summarised below with detailed legislation information presented in Appendix 3.

Invasive non-native flora

4.3.2. An area dominated by Himalayan balsam was identified in the north of the Site (see TN6 on Figure 2 and Photograph 12 in Appendix 2).

4.3.3. Himalayan balsam is listed on Schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended). It is an offence to plant or otherwise cause to grow in the wild any plant listed on Schedule 9.

Invertebrates

4.3.4. Piles of deadwood, stumps and fallen trees in BW1, BW2 and PBW3 have potential to be used as breeding, sheltering and foraging habitat by stag beetles and other saproxylic (dead wood living) species. The White Brook is likely to support a range of aquatic macroinvertebrates with the wet woodland habitat also likely to provide additional foraging and sheltering habitat on a seasonal basis. Given the diversity of habitat types present it is likely that there is a range of invertebrate species supported by the Site many of which are likely to be classified as SPIs.

4.3.5. Species of Principal Importance (SPIs) in England on a list drawn up in response to the requirements of Section 41 of the Natural Environment and Rural Communities Act, 2006 (see Appendix 3).

Fish

4.3.6. The White Brook passing through the Site has the potential to support a range of fish species including the European eel (*Anguilla anguilla*) and the bullhead (*Cottus gobio*). The European eel is classified as an SPI and as such its presence could be a material consideration. Impacts upon fish using the watercourse would need to be considered during the construction of a new bridge and associated boardwalk.

Great crested newts

4.3.7. The woodland and ruderal habitats within the Site provide potentially suitable terrestrial habitat for great crested newts (*Triturus cristatus*). However, an eDNA assessment carried out on the waterbody within the woodland and other waterbodies in the wider Battlemead Common site provided a negative result regarding the presence of this species. As such this species will not be considered further in this assessment.

Common toads

4.3.8. Like great crested newts, common toads (*Bufo bufo*) spend a proportion of the year in aquatic habitats where they breed. Outside of the breeding season common toads have a greater migratory range than great crested newts and may move up to several kilometres from water. This species exploits a range of terrestrial habitat types with woodland, scrub and rough grassland all routinely utilised (Baker *et al*, 2011 and Inns, 2009). The woodland and tall ruderal vegetation are considered to provide suitable terrestrial habitat for common toads.

4.3.9. Despite declines in the population, common toads are widely distributed throughout a large range and are probably present in every 10-km square of lowland, mainland Britain (Baker *et al*, 2011). This species has a preference for medium or large waterbodies and tolerates the presence of fish well (Beebee, 2013 and Baker *et al*, 2011). The common toad is a Species of Principal Importance (SPI) in England. Selection of this species was not due to scarcity, rather to recent declines in population size (Baker *et al*, 2011).

Reptiles

4.3.10. Reptiles prefer a mosaic of habitats with a varied vegetation structure providing conditions suitable for both sheltering and foraging (Edgar *et al*, 2010). The mosaic of tall ruderal vegetation and grassland in the north-west of the Site could provide suitable foraging and sheltering habitats for this species group with the woodland habitat and associated brash and log piles providing a potential sheltering and overwintering resource. The White Brook and waterbody are also likely to provide a high-quality foraging habitat for grass snakes (*Natrix helvetica*) a highly mobile species that regularly predates upon fish and amphibians (Vaughan, 2007).

4.3.11. All species of common reptile are protected from killing and injury under the Wildlife and Countryside Act, 1981 (as amended). Reptiles are also classified as SPI's (see Appendix 3).

Breeding birds

4.3.12. An update breeding bird survey is being undertaken for the wider Battlemead Common site. As such breeding birds will not be considered further in this assessment but will be fully discussed within the associated reporting.

Bats

4.3.13. A ground-level assessment of all trees within the Site revealed that 92 trees/tree groups supported features capable of providing roosting opportunities to bats. A summary of the results of this assessment are as follows:

- 15 trees (T14, T17, T21, T41, T43, T51, T55, T58, T60, T63, T73, T74, T80, T81 and T84) were assessed as having a high level of suitability to support a bat roost;
- 24 trees (T4, T7, T11, T18, T23, T30, T40, T42, T46, T50, T52, T59, T61, T62, T66, T69-T71, T75, T76, T78, T85, T87, T89) were assessed as having a moderate level of suitability to support a bat roost; and
- 53 trees/tree groups (T1-T3, T5, T6, T8-T10, T12, T13, T15, T16, T19-T21, T24-T29, T31-T39, T44, T45, T47-T49, T53, T54, T56, T57, G1, G2, T64, T65, T67, T68, T72, T77, T79, T82, T83, G3, T86 and T88) were assessed as having a low level of suitability to support roosting bats.

4.3.14. The remaining trees were assessed as having negligible value to roosting bats. Full details of the assessment are provided in the table in Appendix 1 with the locations of trees shown on Figure 3. Photographs of a selection of potential roosting features are shown in Appendix 2.

4.3.15. In addition, the Site is likely to provide a high-quality foraging and commuting resource for bats given the presence of a diverse range of habitats including woodland, wetland and the proximity to the River Thames. Given the conditions present, it is considered that the Site is likely to provide part of a core foraging resource for bats present in the local landscape.

4.3.16. Both bats and their roosts are afforded protection under the Conservation of Species and Habitats Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended). In broad terms these pieces of legislation jointly mean that the animals themselves are protected against killing, injury, taking (capture) and disturbance. In addition, their places of shelter are protected against damage, destruction and obstruction. Several species of bat are also classified as SPI's (see Appendix 3).

Badgers

4.3.17. Woodland copses, scrub and hedgerows are preferred locations for setts as they allow badgers to emerge from the setts inconspicuously and young cubs to play near the sett entrances without being visible to potential predators and people (Neal & Cheeseman, 1996). The badger's preferred food source is the earthworm and therefore they predominantly forage on areas of grassland and pasture. Badgers are omnivorous and they supplement their diet with carrion and fruits from hedgerows, trees and shrubs (Neal & Cheeseman, 1996 and Roper, 2001).

4.3.18. Evidence of this species was thoroughly searched for within the Site with survey effort focussed on/within areas of woodland and dense stands of vegetation during the extended Phase 1

habitat survey (particularly along the route of the proposed boardwalk and footpath). As previously noted, evidence of this species was identified with both main and outlier setts sett found. The current status of these setts are described in more detail below:

- Main sett/Annexe (see Target Note 1 and Photograph 7 in Appendix 2 and on Figure 2) – A large sett in the north-western corner of the Site with 14 entrances, 10 of which appeared to be in regular use.
- Outlier sett (Target Note 2) – An outlier sett in the north-west of the Site within woodland BW1 with one partially-used entrance.
- Outlier sett (Target Note 3) – An outlier sett in the north-west of the Site within woodland BW1 with one disused entrance and one entrance showing signs of partial use.
- Outlier sett (Target Note 4) – An outlier sett in the bank of the flood defence bund in the north-west of the Site with one entrance showing signs of partial use.

4.3.19. Both badgers and their setts are protected under the Protection of Badgers Act 1992 making the intentional or reckless destruction, damage or obstruction of a badger sett an offence (see Appendix 3).

Otters and Water voles

4.3.20. A dedicated survey for otters (*Lutra lutra*) and water voles (*Arvicola amphibius*) is being undertaken in late spring/early autumn 2021. As such these species will not be considered further in this assessment.

Other Mammals

4.3.21. A number of deer were observed in the woodland throughout the Site. These included both roe deer (*Capreolus capreolus*) and Muntjac deer (*Muntiacus reevesi*). The woodland also has the potential to provide foraging and sheltering habitat for red foxes (*Vulpes vulpes*) and hedgehogs (*Erinaceus europaeus*).

4.3.22. All wild UK mammals receive limited protection under the Wild Mammals (Protection) Act, 1996 (as amended), see Appendix 3.

4.3.23. In summary, the Site supports or has the potential to support the following species/species groups and these will be carried forward to the recommendations section of this report:

- Invasive flora;
- Invertebrates;
- Fish;
- Common toads;
- Reptiles;
- Roosting, foraging and commuting bats;
- Badgers;
- Other mammals (fox, deer and hedgehogs).

5. Outline Impacts and Recommendations

5.1.1. The presence of species and habitats described in the preceding sections of this report and the legislation relating to them make them a material consideration in the when creating new public access through the willow woodland (the Site).

5.1.2. Therefore, the likely impacts of opening the Site up to the public and creating a walkway through the Site on those species and habitats identified as being present, or likely to be present, within the willow woodland are discussed below. In addition, recommendations for further survey where necessary and the appropriate mitigation and compensation that will be required (where applicable) to ensure that the proposed works comply with legislation are also provided. Management prescriptions for the habitats found on Site are detailed in the Ecological Management Plan prepared previously (Austin Foot Ecology, 2020c) and are therefore not duplicated within this report.

5.2. Habitats

5.2.1. The Site consists of a range of habitat types some of which are of higher intrinsic ecological value. The broad habitats present within the Site are discussed below along with mitigation measures designed to reduce/offset any potential negative impacts.

Semi-natural broadleaved woodland and Plantation Woodland

5.2.2. The majority of areas of semi-natural broadleaved woodland are outside of the proposed footprint of a new footpath/boardwalk. However, the proposed route of the boardwalk in the north-west does encroach into the edge of woodland BW1 (see Figure 4).

5.2.3. In order to facilitate construction of the footpath and boardwalk through the semi-natural broadleaved woodland and the plantation woodland, a number of trees along and either side of the route would likely need to be felled. The extent of tree felling necessary is currently unknown but it is reasonable to assume that a swathe of trees at least 5-10m in width would need to be cleared to allow for construction of the boardwalk and to avoid potential future issues associated with the willow trees and falling branches and public access to the area. The boardwalk would therefore result in fragmentation of the woodland. The removal of trees within the willow plantation would likely open up areas of the woodland to promote growth of ground flora (i.e. some 'glade' creation). In the long term this approach would help with natural regeneration of trees and promote age and structural diversity within the woodland. Where possible trees that are dead, diseased or suppressed along the route of the boardwalk should be a priority.

5.2.4. The dominance of common nettle within the Site is likely the result of the high nutrient levels within the soil and it is recommended that vegetation (common nettle) adjacent to the boardwalk be strimmed regularly and arisings removed to improve botanical diversity.

5.2.5. Advice from an arboriculturalist should be sought with regard to the creation of the boardwalk and removal/pruning of trees. As a guide works should adhere to British Standard: 5837:2012 "*Trees in Relation to Design, Demolition and Construction*" which prescribes the need for the following protection measures:

- Erection of stout fencing around some areas of retained trees in the woodland in advance of works, enclosing the Root Protection Area;
- Prohibition of construction activities, material storage, use of vehicles, fires, etc. within these fenced areas to prevent damage to tree roots and compaction of the soil; and
- Maintenance of an adequate water supply to the trees both during and after construction.

5.2.6. Routine inspections of trees along the boardwalk would need to be undertaken to check for dead or damaged branches for reasons of health and safety. Pruning of trees/branches may therefore be necessary and should be undertaken by appropriately trained personnel once the status of roosting bats/nesting birds has been ascertained.

Running water, standing Water and wetland habitat

5.2.7. The reinstatement of the footbridge across the White Brook and the possible use of machinery to construct the boardwalk would need to be carefully considered. In order to avoid direct impacts upon the White Brook, the waterbody in the east and wetland habitat within the woodland, the general environmental protection measures as listed below must be implemented during the construction of the boardwalk/bridge. Such measures include best environmental practice guidance outlined in the Environment Agency's Pollution Prevention Advice and Guidance (Environment Agency, 2007) (now archived) and those outlined by the Construction Industry Research and Information Association guidance (CIRIA, 2015). The following minimum standards must be adhered to prevent ecological impacts beyond the Site boundary:

- Measures must be taken to prevent dust and other emissions from construction affecting land beyond the Site.
- Chemicals and fuels must be stored in secure containers. Spill kits must be available.
- Noise and vibration must be controlled and kept to the minimum necessary.

5.3. Protected Species and Species of Conservation Importance

Invasive flora

5.3.1. Depending on the layout of the boardwalk and approach to works, there may be a risk of spreading soils containing invasive plant material elsewhere on Site or creating conditions that allow these species to spread further within the Site or off-site. It is recommended that a specialist contractor be enlisted to treat and remove the stand of Himalayan balsam identified in the north of the Site in order to prevent further spread along the banks of the White Brook. Management of this plant can also be undertaken by hand when this plant is in flower (June-July) prior to the formation of seed pods.

Invertebrates

5.3.2. The measures detailed in Section 5.2.7 above must be adhered to in order to avoid possible pollution events that could have an adverse impact upon aquatic macroinvertebrates using the White Brook and wetland habitat within the Site. With the exception of this, the proposals are unlikely to have an adverse impact upon invertebrates currently using the Site. The creation of additional log piles within woodland would provide additional foraging habitats for stag beetle

larvae as well as a foraging resource for saproxylic (deadwood dependant) species. In order to maximise benefit for this species, logs should be partially buried in soil in shady areas (PTES, 2016).

Fish

5.3.3. The measures detailed in Section 5.2.7 must be adhered to in order to avoid possible pollution events that could have an adverse impact upon fish using the White Brook.

Common toads

5.3.4. It is possible that common toads utilise the woodland habitats as a sheltering and foraging resource. However, given the scale and nature of the proposals the scale of the impact upon this species is likely to be limited. It is recommended that common toads be looked out for during construction of the boardwalk when removing root boles and areas of brash/fallen logs. Any common toads found should be carefully moved to retained woodland habitat away from the works area.

Reptiles

5.3.5. The semi-improved grassland and tall ruderal vegetation habitat has the potential to support common species of reptiles. However, given the scale and nature of the proposals, adverse impacts upon this species group are not predicted to occur. It is possible that grass snakes and other species could utilise the woodland habitat as a sheltering and overwintering resource. Therefore, it is recommended that works take place in late summer when reptiles are active (able to move out of the works area) and prior to the winter hibernation period.

Bats

5.3.6. As detailed in the GLTA assessment the Site supports a large number of trees with the potential to support roosting bats. A number of these trees would need to be removed to allow construction of the boardwalk. Given the current status of the majority of trees (willow with broken limbs), climbing of these trees to undertake an aerial inspection would not be possible in the majority of cases. Therefore, trees assessed as having roosting potential that are to be felled would require the following:

- *Trees with high roosting suitability* – Any trees assessed as having a high level of suitability to support a roost would need further targeted survey work in the form of dusk emergence/dawn return to roost surveys. Three survey visits (one of which should be a pre-dawn survey) would need to be undertaken. These survey visits should be separated by at least two weeks and must be undertaken between May and August inclusive (Collins, 2016).
- *Trees with moderate roosting suitability* - Any trees assessed as having a moderate level of suitability to support a roost would also need further targeted survey work in the form of dusk emergence/dawn return to roost surveys. Two survey visits would need to be undertaken. These survey visits should be separated by at least two weeks and must be undertaken between May and August inclusive (Collins, 2016).
- *Trees with low roosting suitability* – Trees assessed as having a low level of roosting potential would need to be soft-felled (felled in sections with sections carefully lowered to

the ground) in the presence of a licenced ecologist. The felling of these trees would be best undertaken in spring or autumn outside of the most sensitive times of the bat's yearly cycle (the maternity and hibernation periods).

5.3.7. If bats are seen emerging or returning to roost within the high and moderate potential trees and works cannot be avoided, a European Protected Species (EPS) licence will be required to facilitate their felling/pruning. The results of the activity survey would be used to support a licence application. The licence application would include a method statement setting out how the roosting bats will be safeguarded during works. In this case, roosting provision in the form of bat boxes is likely to be required. In the event that a bat were found during soft-felling of the tree assessed as having low roosting suitability, all works must cease and the advice of an ecologist must be sought.

5.3.8. Adverse impacts upon foraging and commuting bats are not predicted to occur given the scale and nature of the proposals (no lighting is proposed).

Badgers

5.3.9. Use of the Site by badgers has been confirmed and in order to avoid the potential for disturbance to badgers or their setts it is recommended that all setts be fenced with at least a 10-15m standoff to prevent members of the public from gaining direct access to setts. Currently it appears that the boardwalk in the north-west is to be sited very close to the outlier setts (TN2-TN4). Given the close proximity of these setts it is recommended that the route be altered to maintain a 20m standoff in order to avoid disturbance or destruction of badger setts when inserting posts for the boardwalk. An ecologist should be consulted prior to final placement of the posts in the vicinity of the outlier setts.

5.3.10. If the path cannot be altered, as a last resort it may be necessary to explore options to allow closure of one or more of the outliers under licence from Natural England. This licence allows derogation of the legislation protecting badgers and their setts.

5.3.11. It appears that badgers currently have not excavated pathways beneath the dog-proof fencing elsewhere in the wider Battlemead Common site with badgers currently moving beneath five-bar gates to gain access to the wider area. As mentioned above, the new route would necessitate the use of additional fencing to protect the main and outlier setts from disturbance by the public and dogs. In light of this, it will be necessary to install badger gates at intervals within the fencing to allow badgers to continue to move freely throughout the wider Battlemead Common site.

Other Mammals

5.3.12. The fencing of the boardwalk, additional fencing close to badger setts and fencing around the perimeter of the woodland would greatly fragment the woodland habitat making movement through the Site by deer and other species more difficult. It is possible that Muntjac and other mammals (foxes, etc.) could move beneath the boardwalk (depending upon boardwalk height and design). However, the increased use of fencing in this area is likely to make the Site less desirable/suitable for roe deer restricting the availability of the Site to this species.

5.3.13. Hedgehogs should be watched for during removal of logs/brash during construction of the boardwalk. If any hedgehogs are found they should be carefully moved by hand to dense vegetation outside of the proposed works area.

6. Conclusion

6.1.1. The extended Phase 1 habitat survey and GLTA survey work detailed within this report has been undertaken to determine ecological constraints and opportunities associated with the construction of a boardwalk and footpath through an area of willow woodland in the south-east of the wider Battlemead Common site. The Site was found to have the potential to support a number of protected species and species of conservation importance including invasive flora (Himalayan balsam), invertebrates, fish, amphibians, reptiles, breeding birds (discussed in a separate stand-alone report), roosting, commuting and foraging bats, badgers (numerous badger setts were identified some close to the works area), water vole and otters (discussed in a separate stand-alone report), foxes, deer and hedgehogs.

6.1.2. Recommendations have been included within this assessment to ensure that the proposals minimise any possible adverse impacts to habitats and species that may be/are present on Site with further survey for bats likely should trees need to be felled to facilitate construction of the boardwalk. Providing that measures set out in this report are adhered to there are no overriding reasons relating to nature conservation that would preclude the proposals planned for creating a route through the Site. However, there are likely to be residual implications regarding movement through and future use of the Site by roe deer which would not be possible to mitigate.

7. References

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8. Figures

Figure 1: Site Location and Survey Boundary

Figure 2: Extended Phase 1 Habitat Survey Results

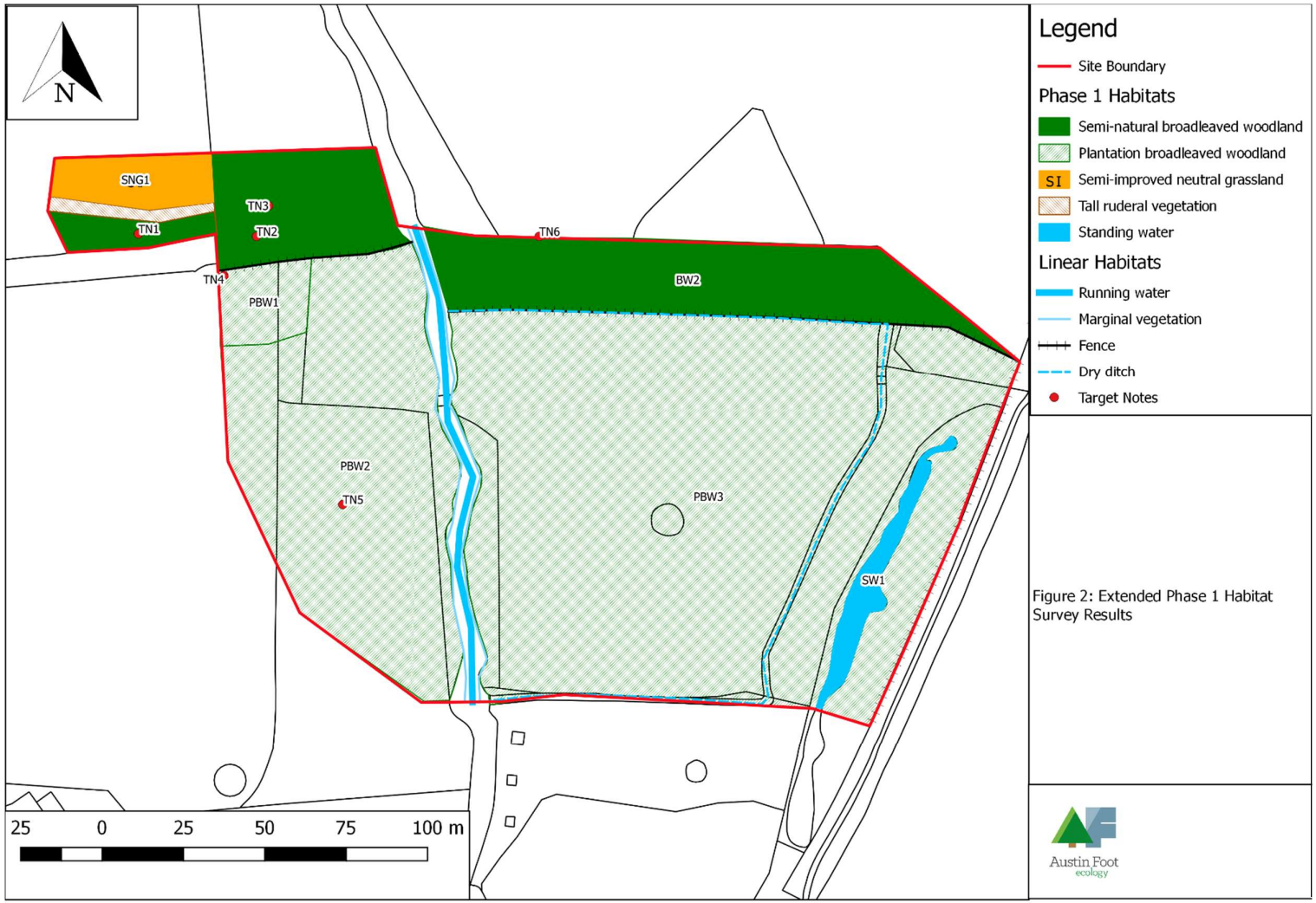

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Figure 3: GLTA Survey Results

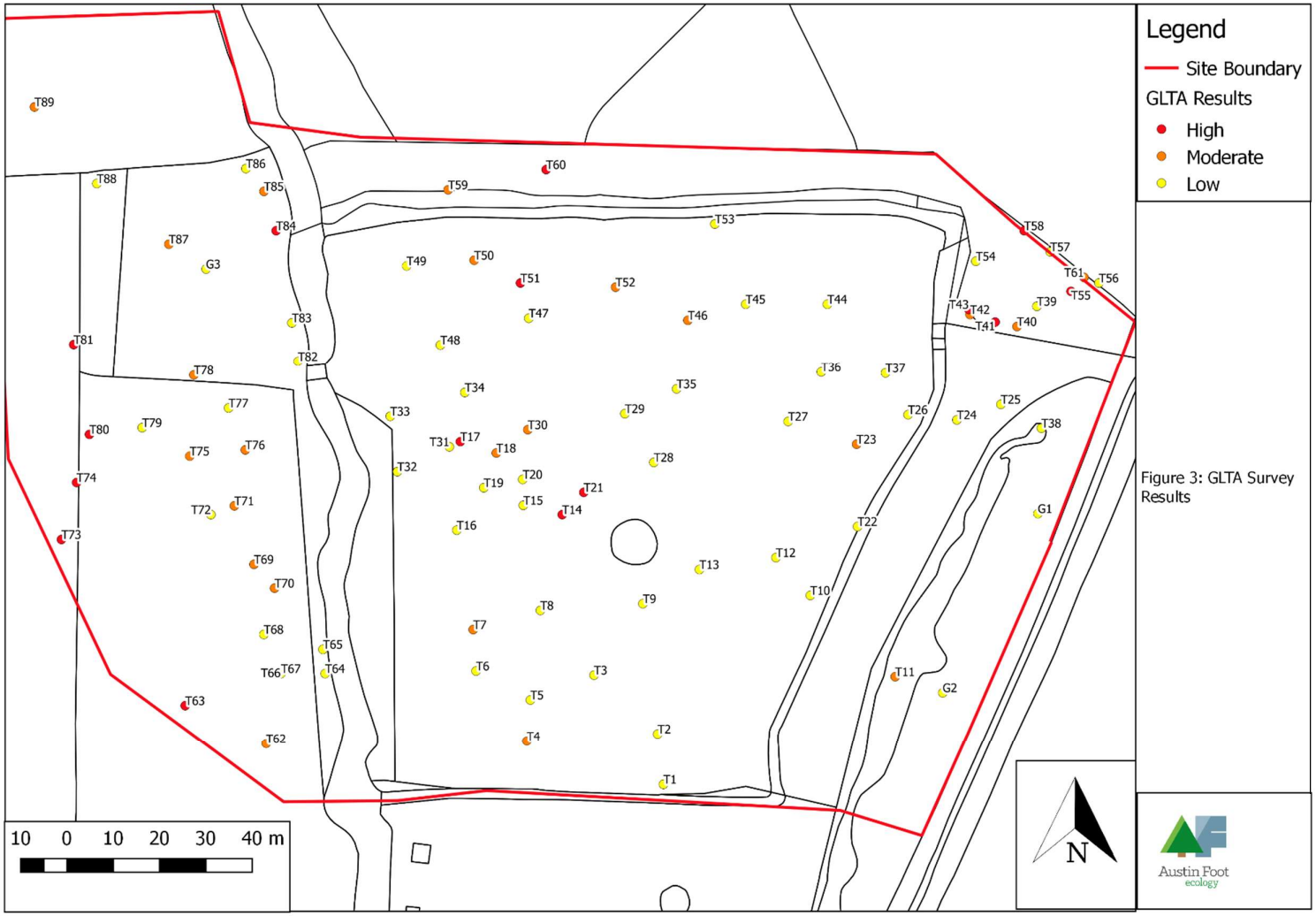
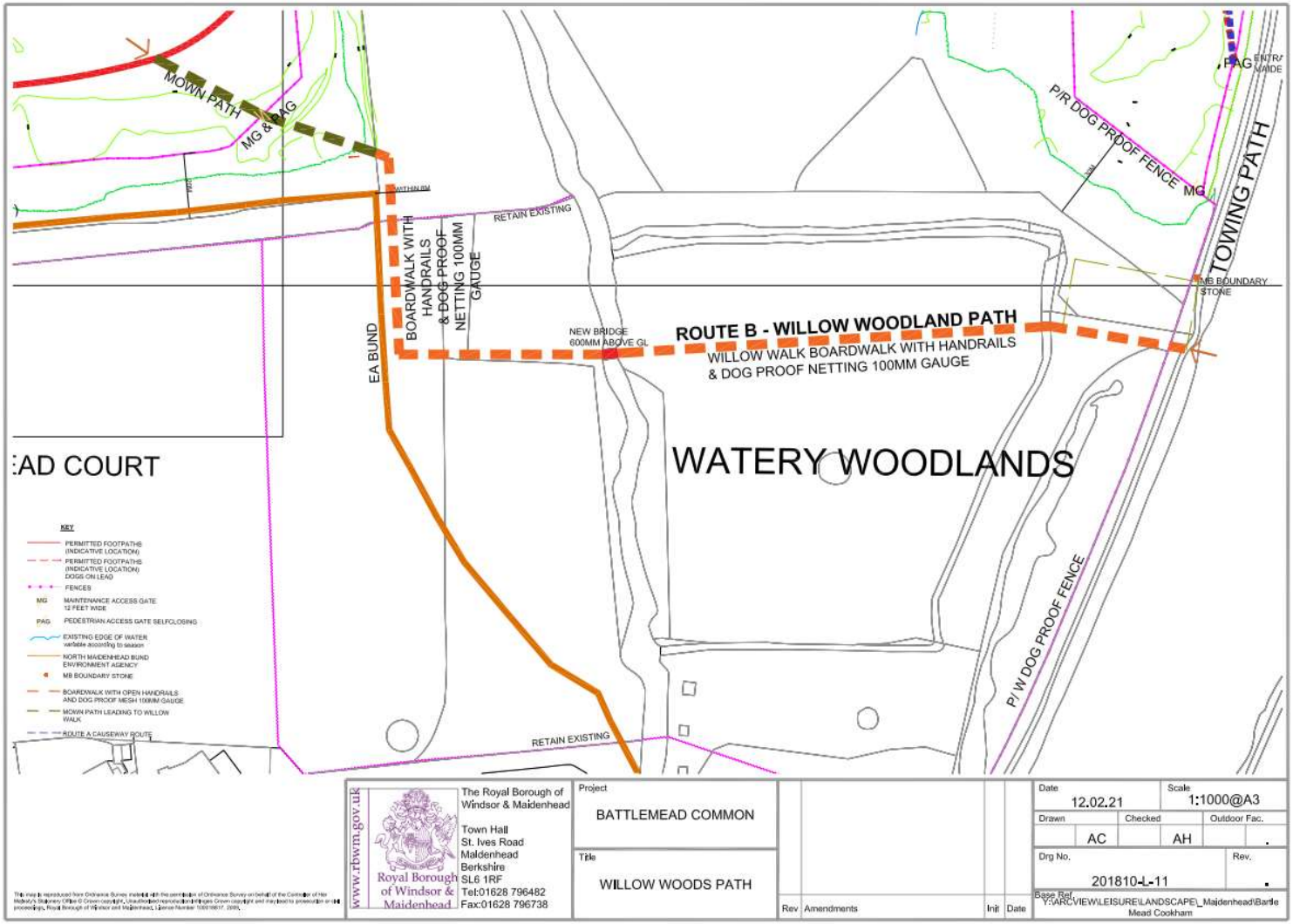


Figure 4: Proposed Footpath/Boardwalk Route



9. Appendix 1 – GLTA Survey Results

Tree Number	Species	Approx. DBH (cm)	Approx. Height (m)	Age	Potential Roost Features (PRFs)				Overall Level of Potential
					Description	Approx. Height above ground level (m)	Position on tree	Aspect (compass bearing)	
T1	Willow	60-80 multi	14-16	Mature	Occlusions in bark	3-5	Stems	East	Low
T2	Willow	100	18-20	Mature	Occlusions in bark	6	Trunk	East	Low
T3	Willow	80-100	16-18	Mature	Occlusion / rot hole in branch	6	Branch	South	Low
T4	Willow	80-100	16-18	Mature	Occlusions	4-5	Trunk and branch	East	Moderate
					Hazard beam	6-8	Branch	East	Low
T5	Willow	60-80	16-18	Mature	Lifted bark, dead wood in canopy and broken branches	8	Branches and trunk	All	Low
T6	Willow	60-80	12-14	Mature	Split branch	4	Branch	South east	Low
T7	Willow	80-100	16-18	Mature	Multiple occlusions and broken branches	6-8	Trunk and branches	West	Moderate
T8	Willow	80-100	16-18	Mature	Occlusions and splits	8-10	Trunk and branches	South	Low
T9	Willow	60-80	16-18	Mature	Split in branch	8	Branch	North east	Low

Tree Number	Species	Approx. DBH (cm)	Approx. Height (m)	Age	Potential Roost Features (PRFs)				Overall Level of Potential
					Description	Approx. Height above ground level (m)	Position on tree	Aspect (compass bearing)	
T10	Willow	80-100	14-16	Mature	Cavity in trunk	2-3	Trunk	South	Low
T11	Willow	100-120	18-20	Mature	Cavity in branch	10-12	Branch	North	Moderate
T12	Willow	60-80	14-16	Mature	Occlusions	6-8	Branches	North	Low
T13	Willow	60-80	16-18	Mature	Cavity in trunk	6-8	Trunk	West	Low
T14	Willow	60-80	18-20	Mature	Split in trunk	6-8	Trunk	South	High
T15	Willow	60-80	16-18	Mature	Occlusion	8-10	Trunk	South	Low
T16	Willow	80-100	18-20	Mature	Occlusions	6-8	Trunk and branches	East	Low
T17	Willow	40-60	16-18	Mature	Split in branch	12-14	Branch	South	High
T18	Willow	30-50	10-12	Semi-mature	Split in trunk	2	Trunk	North west	Moderate
T19	Willow	40-60	14-16	Mature	Hole in trunk	4-6	Trunk	West	Low
T20	Willow	60-80	16-18	Mature	Occlusion in branch	12-14	Branch	East	Low
T21	Willow	60-80	16-18	Mature	Occlusion in branch	12-14	Branch	South	Low
T22	Alder	80-100	16-18	Mature	Woodpecker holes	6-8	Trunk	South	High
T23	Willow	40-60	14-16	Mature	Occlusion/ rot hole	4-6	Trunk	West	Moderate
T24	Willow	80-100	16-18	Mature	Dense ivy cover	All	Trunk	All	Low
T25	Sycamore	40-60	10-12	Semi-mature	Dense ivy cover	All	Trunk	All	Low
T26	Willow	40-60	12-14	Mature	Occlusion	4-6	Trunk	North	Low
T27	Willow	60-80	14-16	Mature	Hazard beam	6-8	Branch	South east	Low
T28	Willow	40-60	14-16	Mature	Rot hole	4-6	Trunk	West	Low
T29	Willow	60-80	16-18	Mature	Hazard beam	6-8	Branch	South	Low

Tree Number	Species	Approx. DBH (cm)	Approx. Height (m)	Age	Potential Roost Features (PRFs)				Overall Level of Potential
					Description	Approx. Height above ground level (m)	Position on tree	Aspect (compass bearing)	
T30	Willow	60-80	16-18	Mature	Hazard beams and occlusions	10-14	Trunk and branches	East	Moderate
T31	Willow	60-80	16-18	Mature	Occlusion	6-8	Trunk	North	Low
T32	Willow	60-80	16-18	Mature	Split in branch	6-8	Branch	North	Low
T33	Willow	60-80	14-16	Mature	Hazard beam	8-10	Branch	West	Low
T34	Willow	60-80	16-18	Mature	Hazard beam	6-8	Branch	East	Low
T35	Willow	60-80	16-18	Mature	Occlusion	6-8	Trunk	South west	Low
T36	Willow	40	12-14	Semi-mature	Occlusion	6-8	Trunk	East	Low
T37	Willow	40-60	12-14	Mature	Hazard beam	8-10	Branch	East	Low
T38	Stump	100-120	4-6	Mature	Dense ivy and hollow trunk	All	Trunk	All	Low
T39	Sycamore	30-40	10-12	Semi-mature	Rot hole	5-6	Trunk	North	Low
T40	Poplar	120-140	20-22	Mature	Deadwood in canopy and rot hole on branch	16-18	Branches	South	Moderate
T41	Ash	40-60 two stems	8-10	Mature	Woodpecker holes	6-8	Trunk	South	High
T42	Ash	40-60 two stems	14-16	Mature	Rot hole	8-10	Trunk	North	Moderate
T43	Poplar	120-140	20-22	Mature	Woodpecker holes	16-18	Trunk	South	High
T44	Willow	60-80	12-14	Mature	Occlusion	6-8	Branch and trunk	East	Low
T45	Willow	40-60	14-16	Mature	Occlusion	4-6	Branch	North	Low

Tree Number	Species	Approx. DBH (cm)	Approx. Height (m)	Age	Potential Roost Features (PRFs)				Overall Level of Potential
					Description	Approx. Height above ground level (m)	Position on tree	Aspect (compass bearing)	
T46	Willow	40-60	12-14	Mature	Occlusion, splits and hazard beam	4-8	Trunk and branches	East	Moderate
T47	Willow	60-80	16-18	Mature	Occlusion	4	Trunk	West	Low
T48	Willow	40-60	16-18	Mature	Occlusion	6-8	Trunk	East	Low
T49	Willow	60-80	16-18	Mature	Occlusion	4-6	Trunk	South	Low
T50	Willow	40	12-14	Mature	Woodpecker hole	4	Trunk	South	Moderate
T51	Willow	60-80	14-16	Mature	Split in trunk and woodpecker hole on east	0-4	Trunk	South	High
T52	Willow	60-80	16-18	Mature	Split in trunk	4-6	Trunk	East	Moderate
T53	Willow	40-60	14-16	Mature	Occlusions in branch	6-8	Branch	South east	Low
T54	Sycamore	60-80	14-16	Mature	Dense ivy cover	All	Trunk	All	Low
T55	Poplar	80-100	16-18	Mature	Woodpecker holes	14-16	Trunk	West	High
T56	Lime	60-80	12-14	Mature	Dense ivy cover	All	Trunk	All	Low
T57	Horse chestnut	80-100	16-18	Mature	Rot hole	6-8	Branch	East	Low
T58	Poplar	120-140	20-22	Mature	Woodpecker holes and rot holes	18-20	Branch	West	High
T59	Ash	60-80 two stem	10-12	Mature	Rot hole	2-4	Trunk	South	Moderate
T60	Poplar	120-140	10-12	Mature	Woodpecker hole	8-10	Trunk	West	High

Tree Number	Species	Approx. DBH (cm)	Approx. Height (m)	Age	Potential Roost Features (PRFs)				Overall Level of Potential
					Description	Approx. Height above ground level (m)	Position on tree	Aspect (compass bearing)	
T61	Poplar	120-140	20-22	Mature	Dead wood in canopy rot hole south	18-20	Trunk	All	Moderate
G1	Sycamore x 4	80-100	20-22	Mature	Dense ivy cover	All	Trunk	All	Low
G2	Ash x 3	40-60	16-18	Mature	Dense ivy cover	All	Trunk	All	Low
T62	Willow	40-60	10-12	Mature	Split in trunk	2-4	Trunk	North	Moderate
T63	Willow	60-80	14-16	Mature	Woodpecker holes	6-8	Trunk	East	High
T64	Willow	40-60	14-16	Mature	Occlusion	2-4	Trunk	West	Low
T65	Willow	60-80	14-16	Mature	Occlusion	6-8	Trunk	North west	Low
T66	Willow	60-80	14-16	Mature	Hazard beam	6-8	Branch	South	Moderate
T67	Willow	40-60	14-16	Mature	Hazard beam	2-4	Branch	West	Low
T68	Willow	60-80	14-16	Mature	Occlusion	4-6	Trunk	West	Low
T69	Willow	60-80	14-16	Mature	Occlusions	8-10	Branches	North	Moderate
T70	Willow	40-60	10-12	Mature	Split in trunk	6-8	Trunk	West	Moderate
T71	Willow	60-80	12-14	Mature	Split in branch	4-6	Branch	West	Moderate
T72	Willow	80-100	16-18	Mature	Occlusion	6-8	Branch	East	Low
T73	Willow	100-120	18-20	Mature	Woodpecker holes, rot hole and deadwood	10-12	Trunk	West	High
T74	Willow	100-120	18-20	Mature	Woodpecker holes, hazard beam and deadwood	8-10	Branch	South	High
T75	Willow	60-80	16-18	Mature	Woodpecker hole	4-6	Trunk	East	Moderate
T76	Willow	40-60	8-10	Mature	Woodpecker holes	4-6	Trunk	North	Moderate

Tree Number	Species	Approx. DBH (cm)	Approx. Height (m)	Age	Potential Roost Features (PRFs)				Overall Level of Potential
					Description	Approx. Height above ground level (m)	Position on tree	Aspect (compass bearing)	
T77	Willow	40-60	12-14	Mature	Split in branch	8-10	Branch	South	Low
T78	Willow	60-80	16-18	Mature	Woodpecker holes	6-8	Trunk	East	Moderate
T79	Willow	40-60	12-14	Mature	Rot hole	8-10	Branch	North	Low
T80	Willow	100-120	18-20	Mature	Woodpecker holes	10-12	Trunk	North east	High
T81	Pedunculate oak	100-120	14-16	Mature	Multiple rot holes	4-10	Trunk and branches	All	High
T82	Willow	80-100	16-18	Mature	Deadwood and lifted bark in canopy	14-16	Branches	All	Low
T83	Willow	40-60	10-12	Mature	Split in trunk	2-4	Trunk	South	Low
G3	Willow x 5	20-40	12-14	Semi-mature	Splits and cavities in trunks	4-6	Trunk	North	Low
T84	Willow	80-100 two stems	16-18	Mature	Cavity in trunk and woodpecker hole	4-6	Trunk	South	High
T85	Willow	80-100	16-18	Mature	Woodpecker hole	8-10	Trunk	South	Moderate
T86	Willow	20-40	6-8	Semi-mature	Split in trunk	4-6	Trunk	East	Low
T87	Willow	40	8-10	Semi-mature	Split in trunk	4-6	Trunk	East	Moderate
T88	Pedunculate oak	120-140	14-16	Mature	Dense ivy cover	All	Trunk	All	Low

Tree Number	Species	Approx. DBH (cm)	Approx. Height (m)	Age	Potential Roost Features (PRFs)				Overall Level of Potential
					Description	Approx. Height above ground level (m)	Position on tree	Aspect (compass bearing)	
T89	Poplar	100-120	6-8 stump	Mature	Hollow trunk and cavities	6-8	Trunk	South	Moderate

10. Appendix 2 – Target Notes and Photographs

10.1. Target Notes

Target Note 1

10.1.1. A main badger sett in the north-west of the Site. This sett had 10 well-used entrances with four entrances showing signs of partial use.

Target Note 2

10.1.2. An outlier badger sett with a single entrance showing signs of partial use.

Target Note 3

10.1.3. An outlier sett with two sett entrances, one showing signs of partial use and one currently disused.

Target Note 4

10.1.4. An outlier badger sett with one entrance showing signs of partial use within the banks of an EA flood defence bund.

Target Note 5

10.1.5. Wet woodland habitat within PBW2 supporting a range of aquatic macrophytes.

Target Note 6

10.1.6. An area of Himalayan balsam in the north of the Site close to the White Brook.

10.2. Photographs

Photograph 1: Semi-improved grassland (SNG1) in the north-west of the Site.

Photograph 2: Plantation broadleaved woodland (PBW1) in the northwest of the Site.

Photograph 3: Plantation broadleaved woodland PBW2 in the west of the Site.

Photograph 4: Plantation broadleaved woodland (PBW3) covering the majority of the Site.

Photograph 5: Waterbody SW1 in the east of the Site.

Photograph 6: The White Brook

Photograph 7: The main badger sett (TN1).

Photograph 8: Tree T14 with high roosting suitability

Photograph 9: Tree T41 ash with multiple woodpecker holes offering a high quality roosting feature.

Photograph 10: Tree T1 with occlusions in bark (a typical feature of the willow trees on Site) offering low roosting suitability.

Photograph 11: Tree T66 a hazard beam (split branches) common to many trees on Site offering low roosting suitability.

Photograph 12: Himalayan balsam in the north of the Site

11. Appendix 3 – Relevant Legislation

11.1.1. This section briefly summarises the relevant legislation pertaining to habitats and species mentioned within this report. Please note that the following text does not constitute legal advice.

11.2. European Legislation (Bats)

11.2.1. The original (1994) "Habitat Regulations" transposed the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law. The Conservation of Habitats and Species Regulations 2017 (as amended) consolidates the various amendments that have been made to the Regulations.

11.2.2. "European protected species" (EPS) are those which are present on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) and includes all UK bat species. These species are subject to the provisions of Regulation 41 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:

- *Intentionally or deliberately capture, injure or kill any wild animal included amongst these species*
- *Possess or control any live or dead specimens or any part of, or anything derived from these species*
- *deliberately disturb wild animals of any such species*
- *deliberately take or destroy the eggs of such an animal, or*
- *intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place*

11.2.3. For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—

- *to impair their ability to survive, to breed or reproduce, or to rear or nurture their young,*
- *or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or*
- *to affect significantly the local distribution or abundance of the species to which they belong.*

11.2.4. Although the law provides strict protection to these species, it also allows this protection to be set aside (derogation) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works. In accordance with the requirements of the Regulations (2017), a licence can only be issued where the following requirements are satisfied:

- *The proposal is necessary 'to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'*
- *'There is no satisfactory alternative'*

- *The proposals 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range*

11.3. National Legislation

Species and Habitats of Principal Importance

11.3.1. Priority species are those species shown on the England Biodiversity List published by the Secretary of State in accordance with Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Planning authorities have a duty under Section 40 of the NERC Act to have regard to priority species and habitats in exercising their functions including development control and planning.

Common Reptiles

11.3.2. The common, widespread species of reptile (slow worm, grass snake, adder and common lizard) are protected through Sections 9(1) and 9(5) of the Wildlife and Countryside Act 1981 as amended by the Countryside and Rights of Way Act 2000, making it an offence to:

- Intentionally or recklessly kill or injure any reptile*;*
- Sell, offer for sale, possess or transport for the purchase of sale or publish advertisements to buy or sell any reptile*.*

11.3.3. Reptiles across the UK have undergone significant declines in recent years and all species of reptile within the UK are now included on the list of species of principal importance prepared in response to Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006. This legislation placed a duty on the Secretary of State to publish, review and revise lists of living organisms in England that are of principal importance for the purpose of conserving biodiversity. The NERC Act also required the Secretary of State to take, and promote the taking of, steps to further the conservation of the listed organism.

Badgers

11.3.4. Badgers are protected under the Protection of Badgers Act 1992. This makes it an offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to intentionally or recklessly interfere with a sett. Sett interference includes disturbing badgers whilst they are occupying a sett, as well as damaging or destroying a sett or obstructing access to it. A licence can be granted by Natural England to permit works that would otherwise result in an offence (e.g. to allow sett closure where activities close by may otherwise result in disturbance or damage to the sett).

Wild Mammals (Protection Act, 1996 (as amended)

11.3.5. Under the Wild Mammals (Protection) Act 1996 it is an offence to cause unnecessary suffering to wild mammals, including crushing and asphyxiating. This Act is primarily concerned with animal welfare and aims to prevent cruelty. As a result, offences include those actions with the intent to inflict unnecessary suffering. A wild mammal includes any mammal which is not domestic or captive. Red foxes, wild deer and other mammals such as rabbits are therefore covered by the Act.

Invasive flora (Himalayan balsam)

11.3.6. Plant species listed on Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended). It is illegal to plant or other cause to grow in the wild any plant included on Schedule 9 of the WCA. Note that the Department for Environment Food and Rural Affairs (DEFRA) do not consider planting of Schedule 9 species in private gardens, estates and amenity planting as 'planting in the wild' so long as reasonable measures are taken to confine them to the cultivated area (i.e. to prevent spread into the wild).