

Land at Pouchen End
Hemel Hempstead

**EXTENDED PHASE I
HABITAT SURVEY**

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For

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Ecology

Arboriculture

Landscape Architecture



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NON-TECHNICAL SUMMARY

Land at Pouchen End, Hemel Hempstead is considered unconstrained by ecology.

Key ecological features that should aim to be retained, protected and managed are the hedgerows.

To accurately assess impacts of development on this land, Phase II ecology surveys are required for:

- Hedgerows
- Badgers
- Bats
- Birds
- Hazel dormice
- Reptiles

Mitigation for the above should be relatively unproblematic given that the interest is largely confined to the site boundaries. Basic principles of mitigation are therefore included, though should be eventually based on sound survey data.

1. INTRODUCTION, CONTEXT AND PURPOSE

Introduction

1.1

- 1.2** The land is relatively large and comprises arable and pastoral fields bordered by hedgerows and grassy margins.

Context

- 1.3** The site is being investigated for its suitability to be promoted through the Core Strategy for residential development.

Purpose

- 1.4** The purpose of this assessment is to identify any factors which may constrain the principle of development within the site.

2. METHODOLOGY

Identifying the Zone of Influence

2.1 Consideration is given to the following potential impacts, that may spread beyond the site:

- Disturbance to species within hearing range during clearance and construction;
- Disruption to species within receiving range of dust etc. during clearance and construction of the development;
- Disturbance to habitats / species within walking distance of the new residents of the development once the development is completed; and
- Pollution to waterbodies during clearance, construction and once the development is complete.

Background Data Search

2.2 While the field survey is invaluable and provides a “snap-shot” of species and habitats present on a site, it is also important to research existing ecological knowledge of the site, and any relevant ecological information from the surrounding area.

2.3 Hertfordshire Biological Records Centre was contacted for ecological data, specifically for non-statutory sites within 2 km of the site, and protected species records within 5 km of the site.

2.4 The Government’s Multi-Agency Geographic Information for the Countryside website (www.magic.gov.uk) provided information on statutory designated nature conservation sites within 5 km of the site.

Field Survey

- 2.5** The site was surveyed in March 2012 using standard Phase I survey methodology (JNCC, 2010). The 'Extended' Phase I technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential that require further survey.
- 2.6** Although the survey falls outside the recommended seasonal period for botanical work, ACD Ecology believes that the evaluation and habitat descriptions, and hence the impacts and their significance are fully accurate for the following reasons:
- Given the type of vegetation and habitats present, the valuation of the intrinsic interest is very unlikely to change; and
 - Given the very mild winter, vegetation was clearly visible.
- 2.7** Using the above method, the site was classified into areas of similar botanical community types with a representative sample of those species present at the time of the survey being described.
- 2.8** Incidental fauna were also recorded during the survey and habitats identified are evaluated for their potential to support legally protected species and other species of conservation concern, including Biodiversity Action Plan species.

Habitats and Species Evaluation and Impact Assessment

- 2.9** The habitats and species evaluations are made in line with the Institute of Ecology and Environmental Management's (IEEM) guidelines for Ecological Impact Assessment.
- 2.10** These guidelines aim for consistency in evaluating the importance of ecological features onsite and any effects or impacts a scheme has on them.
- 2.11** Firstly, the species and habitats are valued and given a level of geographical importance. This framework incorporates a wide range of legislation and governmental guidance in assessing each feature's value.
- 2.12** Secondly, the impacts of the proposed scheme are predicted, taking account of the stages and activities within the development process. These impacts are then assessed for their significance, based on the value of the species or habitat in question. The assessment of impact significance is done before and after any proposed mitigation to give an overall indication of significance.
- 2.13** The value of specific ecological receptors (sites, habitats or species) are assigned according to their level of importance using the following terms:
- International value;
 - UK value;
 - National value (i.e. England/Northern Ireland/Scotland/Wales);
 - Regional value;
 - County value;
 - District value (or Unitary Authority, City, or Borough);
 - Local or Parish value; and/or
 - Of value within the context of the project site or a larger defined area.
- 2.14** The following factors are considered whether ecological effects are significant:
- Extent;

- Magnitude;
- Duration;
- Reversibility;
- Timing and frequency; and
- Cumulative effects.

3. BASELINE INFORMATION AND EVALUATION

3.1 Below are the results of the background data search and field surveys.

3.2 The habitats and species evaluations are in line with IEEM's guidelines for Ecological Impact Assessment.

Ecological Context

3.3 The site is bounded by: a narrow strip of broadleaved woodland and pasture to the north, beyond which lies arable land, hedgerows and small pockets of woodland; houses and gardens to the east, beyond which lies parkland, tree-lines and small pockets of woodland; Chaulden Lane and pasture land to the south, beyond which lies a railway, tree-lines and a lake; and Pouchen End Lane and pasture to the west, beyond which lies arable land.

Designated Sites

3.4 Statutory designated nature conservation sites within 5 km of the site are:

- Chilterns Beechwoods SAC c. 3.5 km north-west is designated for its forest, grassland and scrub mosaic interest;
- Little Heath Pit SSSI c. 1.25 km north-west is designated for its geological interest;
- Rough Down Common SSSI c. 2 km south-east is designated for its grassland interest;
- Ashridge Common and Woods SSSI c. 3.5 km north-west is designated for its woodland, grassland and bird interest;
- Shrub Hill Common LNR c. 0.13 km west noted for its scrub, woodland, chalk grassland and butterfly interest; and

- Howe Grove Wood LNR c. 2.75 km north-east noted for mixed woodland interest.

3.5 SACs are of **international value**, SSSIs are of **national value** and LNRs are of **local value**.

3.6 LNRs are notified under Section 21 of the National Parks and Access to the Countryside Act 1949 by local authorities. They are not necessarily of great ecological value, and are intended for public appreciation and enjoyment of wildlife.

3.7 Non-statutory designated nature conservation sites within 1 km of the site are:

- Shrub Hill Common Wildlife Site c. 0.13 km west designated for its grassland interest;
- Harrison's Moor and Boxmoor Common Wildlife Site c. 0.5 km south-east designated for its marshy grassland interest;
- Lower Little Heath Farm Grassland Wildlife Site c. 0.7 km north-west designated for its grassland interest;
- Little Heath and Roseheath Wood Wildlife Site c. 1 km north-west designated for its woodland interest;
- Moor End Farm Wildlife Site c. 0.25 km south designated for its building and environs for protected species; and
- Bovingdon Reach Wildlife Site c. 0.75 km south designated for its grassland interest.

3.8 Several other Wildlife Sites are within the 2 km search buffer, of which their details are in the Appendix. Wildlife Sites are of **county value**.

Habitats

3.9 The site supports the following habitats:

- Arable land;
- Hedgerows;
- Improved grassland;
- Semi-improved grassland; and
- Young plantation woodland

3.10 Habitat types are described alphabetically, below and shown on the Habitat Map (see Appendix).

Arable Land

3.11 Arable fields in the west of the site have been recently seeded with rye grass. Other occasional species include common ragwort *Senecio jacobaea*, dandelion *Taraxacum officinale*, fool's parsley *Aethusa cynapium*, and groundsel *Senecio vulgaris*. This habitat is species poor with no structure.

3.12 Evaluation: Negligible ecological value.

Hedgerow with mature trees 1 (H1)

3.13 This relatively unmanaged species diverse hedgerow on the eastern boundary is interdispersed with mature trees and is 'leggy' in places. It comprises natives such as: ash *Fraxinus excelsior*, blackthorn *Prunus spinosa*, bramble *Rubus fruticosus* agg., dog rose *Rosa canina*, elder *Sambucus nigra*, English oak *Quercus robur*, hawthorn *Crataegus monogyna*, hazel *Coryllus avellana*, holly *Ilex aquifolium*, and wild cherry *Prunus avium*.

3.14 Ground flora comprises lords and ladies *Arum maculatum*, cleavers *Galium aparine*, gorse *Ulex europaeus*, ground ivy *Glechoma hederacea*, hedge bedstraw *Galium molugo*, and fool's parsley.

3.15 Given its native species richness, this hedgerow is likely important under the Hedgerows Regulations (1997).

3.16 Evaluation: Value at the local level.

Hedgerow (H2)

3.17 This c. 1.5 m high dense hedgerow on the northern boundary has evidence of management and a similar species composition to H1. H2 may therefore be important under the Hedgerows Regulations (1997).

3.18 Evaluation: Value at the local level.

Hedgerow with mature trees 3 (H3)

3.19 This hedgerow with trees on the eastern boundary is tall and dense with no evidence of management. It is similar in species composition to H1, and also contains crab apple *Malus sylvestris*. This hedge is likely important hedgerow under the Hedgerows Regulations (1997).

3.20 Evaluation: Value at the local level.

Hedgerow with mature trees 4 (H4)

3.21 This hedgerow is similar in species composition to H1, and also contains walnut *Juglans nigra*. Its structure is similar to H3 and is likely important under the Hedgerows Regulations (1997).

3.22 Evaluation: Value at the local level.

Hedgerow with mature trees 5 (H5)

3.23 This hedgerow on the eastern boundary is similar to H1 in species composition and structure. This hedgerow may be important under the Hedgerows Regulations (1997).

3.24 Evaluation: Value at the local level.

Hedgerow 6 (H6)

3.25 This scanty and unmanaged hedgerow comprises hawthorn, blackthorn and several small cherry trees. H6 is unlikely to be important under the Hedgerows Regulations (1997). Although a native hedgerow, its lack of woody species and structure devalues it somewhat.

3.26 Evaluation: Value within the context of the site.

Hedgerow with mature trees 7 (H7)

3.27 This dense hedgerow along the eastern boundary has little evidence of management and comprises: blackthorn, dog rose, hawthorn and hazel, and may be important under the Hedgerows Regulations (1997).

3.28 Evaluation: Value at the local level.

Hedgerow with mature trees 8 (H8)

3.29 This gappy hedgerow along the southern boundary comprises mature native and non-native trees: Leylandii, English oak and hazel. There is little evidence of management and it is unlikely to be important under the Hedgerows Regulations (1997).

3.30 Evaluation: Value within the context of the site.

Hedgerow with young trees 9 (H9)

3.31 A line of young spindly poplar trees.

3.32 Evaluation: Negligible ecological value.

Hedgerow 10, 11, 12 and 13 (H10, H11, H12 and H13)

3.33 These hedgerows in the south of the site are relatively unmanaged and comprise hazel, hawthorn and blackthorn. These are unlikely to be important under the Hedgerows Regulations (1997).

3.34 Evaluation: Value at the local level.

Hedgerow 14 and 15 with mature trees (H14 and H15)

3.35 These hedgerows intersect the centre of the site and are similar to H3 in species composition and structure. These are likely to be important under the Hedgerows Regulations (1997).

3.36 Evaluation: Value at the local level.

Improved grassland

3.37 Improved grassland that is heavily grazed by sheep and horses forms most of the site. The individual fields are similar in character. There is a limited in range of grasses, with a few common forbs including common sorrel *Rumex acetosa*, dandelion, daisy *Bellis perennis*, perennial rye grass *Lolium perenne*, and white clover *Trifolium repens*.

3.38 Evaluation: Negligible ecological value.

Semi-improved neutral grassland (SI)

3.39 Semi-improved grassland was recorded on field margins and in a small field in the south-east corner of the site.

3.40 Species comprise: annual meadow grass *Poa annua*, bracken *Pteridium aquilinum*, broad-leaved dock *Rumex obtusifolius*, cleavers, cock's foot *Dactylis glomerata*, common knapweed *Centaurea nigra*, creeping bent *Agrostis palustris*, creeping thistle *Cirsium arvense*, false brome *Brachypodium sylvaticum*, false oat grass *Arrhenatherum elatius*, gorse, greater plantain *Plantago major*, hogweed *Heracleum sphondylium*, perennial rye grass, red deadnettle *Lamium purpureum*, small nettle *Urtica urens*, spear thistle *Cirsium vulgare*, white clover and Yorkshire fog *Holcus lanatus*.

3.41 Evaluation: Value within the context of the site.

Young plantation woodland 1 (YP1)

3.42 A c. 20 m strip of newly planted broadleaved saplings exists in the eastern pocket of the site and may be managed as a set-aside wildlife strip. Although this habitat currently lacks structure, it is species rich and will be of value in the future. Species comprise: ash, beech *Fagus sylvatica*, English oak, hawthorn, holly, hornbeam *Carpinus betulus*, silver birch *Betula pendula*, yew *Taxus baccata*. This joins onto YP2 and YP3.

3.43 Evaluation: Value within the context of the site.

Young plantation woodland 2 (YP2)

3.44 A c. 20 m strip of newly planted silver birch trees exists between two arable fields in the east of the site. Although this habitat currently lacks structure and is species poor, it does provide habitat connectivity through the site.

3.45 Evaluation: Value within the context of the site.

Young plantation woodland (YP3)

3.46 This strip of newly planted woodland is similar to YP1, and also comprises cherry and sessile oak *Quercus petraea*.

3.47 Evaluation: Value within the context of the site.

Young plantation woodland (YP4)

3.48 This strip of newly planted coniferous woodland in the south of the site contains no native species.

3.49 Evaluation: Negligible ecological value.

Fauna

3.50 The relevant protected species records are incorporated into the Fauna section below.

Badgers

3.51 A partially-used outlier badger *Meles meles*, sett alongside a well-used pathway was recorded onsite to the east of the site. Badger dung was also recorded on the western boundary. Badgers often rest in outlier setts after foraging during the summer and autumn. Badgers therefore likely forage on these field margins.

3.52 Evaluation: Value within the context of the site.

Bats

Roosts

3.53 The site contains many mature trees within the hedgerows, most of which given their overly exposed position to the weather and lack of roosting features, present low bat roosting potential. However, a small number of trees in various locations across the site, which given the presence of woodpecker holes gives them a significant bat roosting potential.

3.54 Evaluation for roosting potential: Value within the context of the site.

Commuting features

3.55 The hedgerows may be a commuting feature or navigation reference point for bats within the vicinity, particularly if bats roost within any of the buildings to the east of the site or within pockets of woodland to the north-west.

3.56 The data search produced records for bats in the vicinity, namely brown long-eared *Plecotus auritus*, Natterer's *Myotis nattereri*, and common pipistrelle *Pipistrellus pipistrellus*. Bats may travel along the hedgerows to forage at the Grand Union Canal and Westbrook mere to the south of the site.

3.57 Evaluation of commuting features: Value at the local level.*Foraging habitat*

3.58 Most of the site is unlikely to be important for foraging bats as the grasslands are relatively species-poor, lack structure and are unsheltered from the wind, which minimises opportunities for invertebrates (bats food source). Some of the semi-improved grassy field margins may however offer some foraging opportunity for bats that may roost locally.

3.59 Evaluation of foraging resource: Value within the context of the site.**Birds**

3.60 A number of bird species were recorded onsite during the survey, including: blackbird *Turdus merula*, blue tit *Cyanistes caeruleus*, brambling *Fringilla montifringilla*, chaffinch *Fringilla coelebs*, chiffchaff *Phylloscopus collybita*, dunnock *Prunella modularis*, great tit *Parus major*, green woodpecker *Picus viridis*, house sparrow *Passer domesticus*, long-tailed tit *Aegithalos caudatus*, magpie *Pica pica*, pheasant *Phasianus colchicus*, rook *Corvus frugilegus*, robin *Erithacus rubecula*, skylark *Alauda arvensis*, and wood pigeon *Columba palumbus*.

3.61 Many of these birds are commonly found in hedgerows and grassland, though the house sparrow (Red List), green woodpecker (Amber List) and skylark (Red List) are of conservation concern due to loss of foraging habitat, climate change and changing agricultural practice.

3.62 Although brambling are Schedule 1 birds, they are winter migrants and generally do not breed in the UK.

3.63 The hedgerows and trees provide breeding and foraging habitat for common birds.

3.64 Evaluation: Value at the local level for general birds; and potentially value at the district / county level for skylark.

Hazel dormouse

3.65 Hedgerows onsite are suitable for hazel dormice *Muscardinus avellanarius*, and include a variety of plants required in this species' diet (including occasionally recorded hazel). The hedgerows are also connected to woodland to the north and east, and a hazel dormouse record exists 1.6 km south-east. There it is possible that this species is present on the site, but unlikely.

3.66 Evaluation: potential value at district level.

Great crested newts

3.67 No ponds are present onsite, though there is a pond 15 m to the west of the site. Ponds are scarce in this area and this pond is isolated from other ponds by hard standing. Great crested newts *Triturus cristatus*, often associated with pond clusters with good habitat connectivity, are therefore likely absent from the site or nearby surroundings.

3.68 Evaluation of pond: Negligible ecological value.

Reptiles

3.69 The edge habitats i.e. hedgerows, grassy field margins, semi-improved grassland and plantation woodland are suitable for common and widespread reptile species, and could potentially be inhabited by a large reptile population.

3.70 Evaluation: potential value at the local level.

Wild mammals

3.71 Signs of mammals were recorded across the site, including: mammal paths, fallow deer *Cervus nippon*, (non-native species) droppings, and fox *Vulpes vulpes*, scat.

- 3.72** A variety of other small mammal species such as common shrews *Sorex araneus* and wood mice *Apodemus sylvaticus*, likely use the hedgerows and semi-improved grassland.
- 3.73** The above mammals (though not limited to the above), likely use the site for foraging and cover.
- 3.74** Evaluation: Value within the context of the site.

4. LEGISLATION, PLANNING POLICY AND BIODIVERSITY ACTION PLANS

4.1 This section summarises the legislation and national, regional and local planning policies, as well as other reference documents, relevant to the baseline ecology results.

Legislation

4.2 Specific habitats and species receive legal protection in the UK under various pieces of legislation, including:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2010;
- The Countryside and Rights of Way Act 2000;
- The Hedgerows Regulations 1997;
- The Protection of Badgers Act 1992; and
- The Natural Environment and Rural Communities Act 2006.

4.3 Where relevant, the assessment takes account of the legislative protection afforded to specific habitats and species.

Planning Policy

National Planning Policy Framework

Conserving and enhancing the natural environment

4.4 The planning system should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes, geological conservation interests and soils;
- recognising the wider benefits of ecosystem services;

- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Dacorum Borough Local Plan

4.5 The Local Plan contains these relevant policies relating to ecology and nature conservation:

- Policy 99: Preservation of trees, hedgerows and woodlands;
- Policy 100: Tree and woodland planting;
- Policy 101: Tree and woodland management;
- Policy 102: Sites of importance to nature conservation; and
- Policy 103: Management of sites of nature conservation importance.

Biodiversity Action Plans

UK and Local Biodiversity Action Plan

4.6 The following UK and local BAP priority habitat occurs on and within the site's immediate vicinity:

- Hedgerows (ancient and species rich hedgerows and hedgerow trees)

4.7 The following local priority species may use the site:

- Hazel dormouse
- Natterer's bat
- Tree sparrow

5. DISCUSSION AND RECOMMENDATIONS

Designated Sites

5.1 Adverse impacts to Shrub Hill Common Wildlife Site (WS) 0.13 km east will likely result from slight increases in recreational pressure from the new occupants of the development, such as: dog walking, trampling, flower picking, etc. These impacts will likely be insignificant, as Shrub Hill Common WS is already situated within a highly populated residential area, and is therefore already subject to these pressures.

5.2 Impacts to other designated sites are insignificant given that there is sufficient distance and lack of habitat connectivity between the development and the designated sites.

Habitats

Arable Land

5.3 The arable land is of negligible ecological value, so its loss is insignificant.

5.4 No mitigation is therefore required.

Hedgerows and mature trees

5.5 The loss of all hedgerows onsite, apart from H9 would be significant. H6 and H8 are also likely to be poorer quality hedgerows.

5.6 Hedgerows should be retained and incorporated within the development where possible. Hedgerows should be strengthened with planting where they have become 'gappy', and managed where they have become 'leggy'. A hedgerow survey would identify valuable hedgerows and key areas for hedgerow management.

5.7 If for any reason key hedgerows cannot be retained, or large sections of hedgerows are to be removed, habitat compensation would be required.

- 5.8** With the above mitigation, overall residual impacts to hedgerows and trees would be neutral.

Improved grassland

- 5.9** Areas of improved grassland are of negligible ecological value, so their loss is insignificant.
- 5.10** No mitigation is therefore required.

Young plantation woodland

- 5.11** Given the intrinsic future value of the young plantation woodland, this should be retained e.g. as public open space, and allowed to develop into woodland.

Fauna

Badgers

- 5.12** Signs of badger were found onsite, therefore a full badger survey to identify any setts on and within 30 m of the site boundary is required.
- 5.13** Any active / occupied setts identified in or near the development can be closed or disturbed under a Badger Development Licence (BDL) from Natural England. If a Main sett is affected, an artificial sett may be needed.
- 5.14** Badger exclusion is done using well-established techniques i.e. with one-way badger gates and badger-proof fencing.
- 5.15** With the above mitigation, overall residual impacts to any local badger populations would be insignificantly negative, mainly due to loss of foraging habitat.

Bats

- 5.16** Collectively the site's habitats have moderate to high value for foraging / commuting bats. Tree roosts may also be present. An activity survey and tree assessment for roosting potential, are therefore required.

- 5.17** Any bat potential trees should be retained and integrated within the development layout. If for any reason it is not possible to retain these trees, a precautionary approach would be adopted when felling trees that may harm bats and may require a European Protected Species Licence (EPSL) from Natural England.
- 5.18** Linear features such as hedgerows are important for bats to navigate their way around their home range. Hedgerow links should therefore be retained and compensated for if any are lost.
- 5.19** Artificial lighting should be managed so that it is directed away from key foraging / commuting and potential roosting habitats as bats are known to avoid artificially lit areas.
- 5.20** With the above mitigation, impacts to bats would likely be insignificantly negative, mainly due to disturbance.

Birds

- 5.21** The site offers nesting habitat for both ground-nesting birds (skylark) and those that nest within woody vegetation. A breeding bird survey is therefore required.
- 5.22** Birds' nests, eggs and nestlings are vulnerable whenever vegetation is cleared during the breeding bird season. Site clearance September - February (inclusive) would therefore avoid the breeding bird season.
- 5.23** Many key habitats such as hedgerows and trees should be retained, and any mitigation should focus on the scale of habitat losses and the impact this may have on the integrity of local bird populations.
- 5.24** Measures to reinstate or improve conditions for birds may include:
- Provision of foraging opportunities by allowing growth of 'wild' areas of long grasses and herbs, and also maintenance of short grass areas;
 - Unparalleled habitat compensation e.g. the addition of a wildlife pond would compensate for the loss of skylark breeding habitat, and will greatly

enhance the scheme both ecologically and visually;

- To compensate for habitat loss, plant native trees, hedges and bushes, particularly those that support good numbers of insects and / or produce berries in the autumn, to provide foraging opportunities and nest sites;
- New nest boxes on trees and new buildings.

5.25 With the above mitigation, overall residual impacts to birds in general would be insignificantly negative mainly due to losses of minor foraging and nesting habitat.

5.26 The loss of grassland and arable fields would be potentially significant to skylark at the local level.

Hazel dormice

5.27 Hedgerows onsite provide suitable dormouse habitat. A dormouse nest tube survey is therefore required. This is the most appropriate method given that hazel is not abundant enough for the 'hazel nut search' survey method.

5.28 Any dormouse interest is likely confined to the hedgerows. Adverse impacts in the absence of mitigation would likely include habitat losses and disturbance caused by artificial lighting, dust and noise.

5.29 If dormice are found, development likely needs to proceed under an EPSL. Sensitive timing of works (when removing relevant vegetation), creation and enhancement of dormouse habitat, would likely be involved as part of the licence.

5.30 With the above mitigation, overall residual impacts to any dormouse population present would likely to be negligible, mainly due minor habitat losses and disturbance.

Reptiles

5.31 Suitable habitat for reptiles was recorded onsite. A reptile survey of the field margins is therefore required.

5.32 Mitigation for reptiles is widely practised, and if reptiles are found onsite, the following mitigation techniques can be applied:

- Key habitats for reptiles should aim to be retained and connectivity through the site preserved.
- Any small areas lost to development containing reptiles can be progressively strimmed, encouraging them into any nearby suitable retained habitat. This may also involve reptile capture and translocation and use of reptile fencing to exclude and separate them from the construction zone.
- If reptiles cannot be retained onsite, a more intensive programme of capture and translocation to a suitable receptor is required.
- Whether retaining reptiles onsite or taking them off-site, this will likely involve habitat management and enhancements before they are moved.

5.33 With the above mitigation, overall residual impacts to reptiles likely to be negligible, due to habitat loss / displacement and disturbance.

6. ENHANCEMENTS

6.1 In line with policy guidance, schemes should deliver biodiversity enhancements where possible, not just negligible impacts. The following additional enhancements are designed to address this:

- Protect existing trees and hedges using fencing in accordance with BS5837:2012 'Trees in Relation to Design, Demolition, and Construction - Recommendations'.
- YP2 (if retained as recommended) could be enhanced by improving its species diversity through planting a range of native trees.
- Use rich wildflower seed mixes in areas of public open space e.g. along edges of communal amenity grassland. The grass should be left 'wild' to provide undisturbed habitat for small mammals, invertebrates and birds etc. Infrequent cuts (annually in the autumn) will maintain this habitat.
- Provide roosting opportunities for bats in the form of bat boxes on the new houses or trees.
- Provide insect houses positioned in sheltered, warm locations to provide over-wintering sites for beneficial insects such as lady birds and lacewings, which prey on garden pest species.
- Create loggeries from timber from any onsite tree-felling to provide important egg laying and larval habitat for invertebrates and refugia and for foraging by small mammals and amphibians etc.
- Avoid non-residual pesticides, such as glyphosphate, peat-free mulch, growing media and soil conditioners.
- Avoid slug pellets and use of environmentally safe wood preservatives (for sheds and fences etc).

7. CONCLUSION

7.1 The assessment is made in line with the IEEM's guidelines on Ecological Impact Assessment.

7.2 Consequently, it is not considered that the ecological issues identified so far would constrain the principle of development within the site. However, the development proposals and masterplan would need to take account of these issues with suitable design and mitigation measures.

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APPENDIX 1 Photographs



H1 on left, facing north



Semi-improved grassland on eastern field margin



YP1 and arable field edge



Arable land in east, facing west

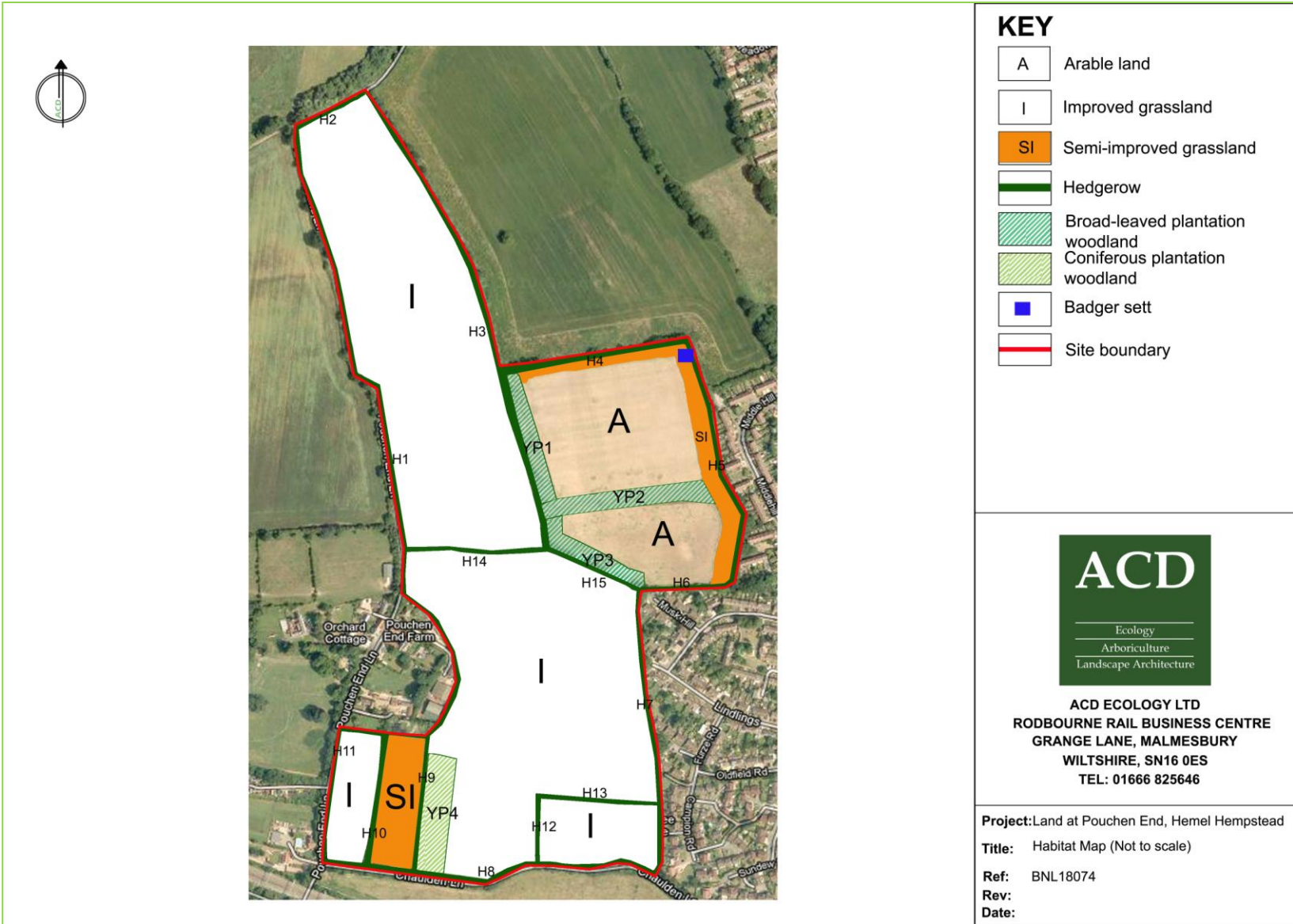
Improved grassland (grazed)



Arable land, facing south west



Appendix 2: Habitat map



KEY

- A Arable land
- I Improved grassland
- SI Semi-improved grassland
- Hedgerow
- Broad-leaved plantation woodland
- Coniferous plantation woodland
- Badger sett
- Site boundary

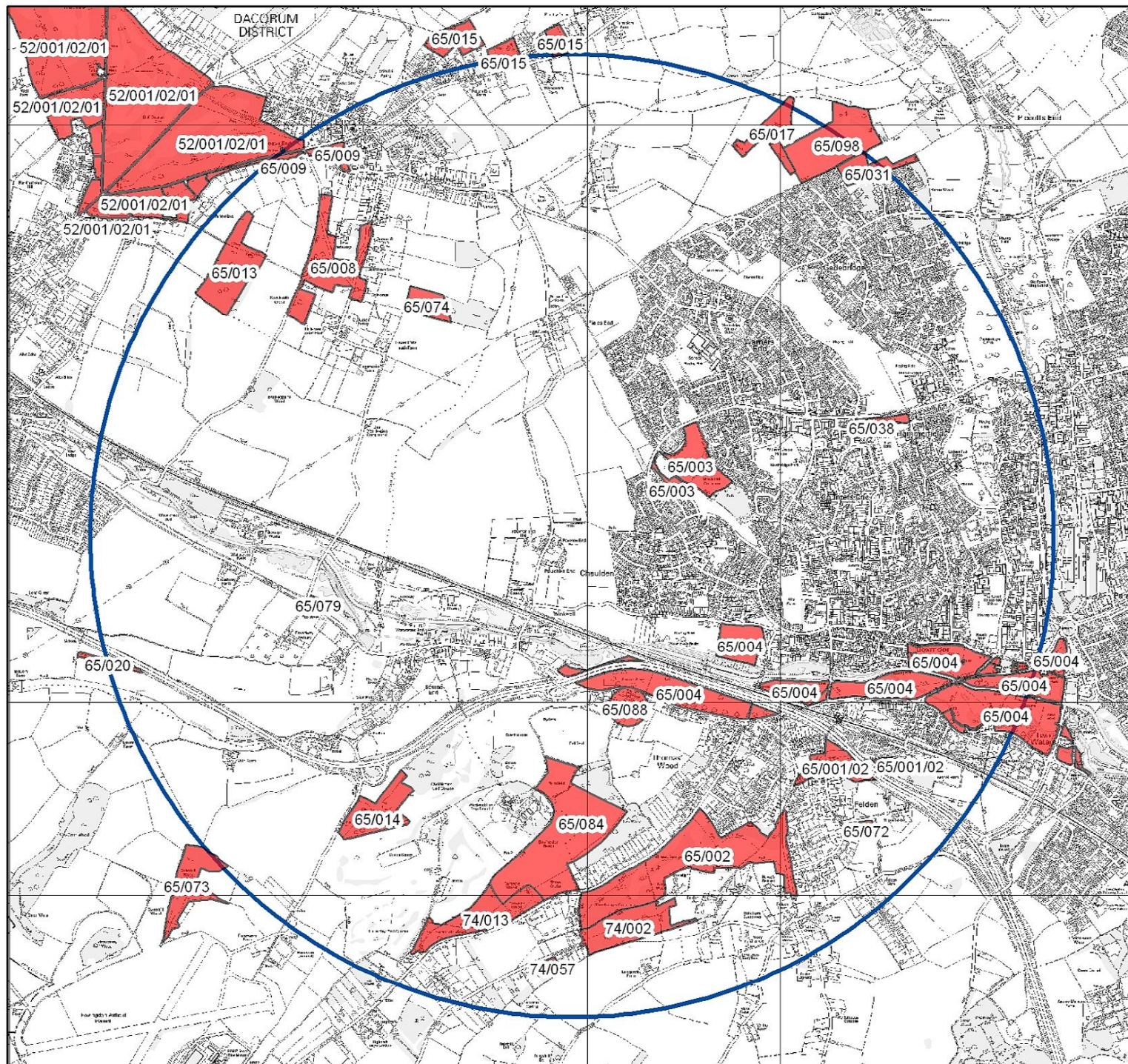



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Project: Land at Pouchen End, Hemel Hempstead
Title: Habitat Map (Not to scale)
Ref: BNL18074
Rev:
Date:


APPENDIX 3: Background Data

HERTFORDSHIRE NON-STATUTORY SITE RECORDS



 Wildlife Site

 2.5km search area

 Produced by
HERTFORDSHIRE
BIOLOGICAL
RECORDS
CENTRE

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SITE REFERENCE	SITE NAME	GRID REFERENCE	AREA(ha)	RATIFIED	DESCRIPTION
52/001/02/01	Berkhamsted Common South & Frithsden Beeches	SP997105	156.77	1997	A large common situated on Clay-with-Flints deposits which overlay the Chalk, now largely used as a golf course. The site is important for dry and damp acid grassland and dry heath communities. These are characterised by Heather (<i>Calluna vulgaris</i>), Upright Tormentil (<i>Potentilla erecta</i>) and Heath Bedstraw (<i>Galium saxatile</i>), grasses such as Common Bent (<i>Agrostis capillaris</i>), Heath Grass (<i>Danthonia decumbens</i>) and Wavy Hair-grass (<i>Deschampsia flexuosa</i>) and shrubs of Gorse (<i>Ulex europaeus</i>) and Broom (<i>Cytisus scoparius</i>). To the west is a large area dominated by Bracken (<i>Pteridium aquilinum</i>) with scattered Silver Birch (<i>Betula pendula</i>) dominated woodland with some Ash (<i>Fraxinus excelsior</i>), Pedunculate Oak (<i>Quercus robur</i>) and Sessile Oak (<i>Q. petraea</i>), and Hawthorn (<i>Crataegus monogyna</i>). Open areas support acid grassland with species such as Sheep's Fescue (<i>Festuca ovina</i>), Harebell (<i>Campanula rotundifolia</i>), Pill Sedge (<i>Carex pilulifera</i>) and Sheep's Sorrel (<i>Rumex acetosella</i>). Purple Moor-grass (<i>Molinia caerulea</i>) has also been recorded. An area of marshy grassland supports an interesting assemblage of species including Soft Rush (<i>Juncus effusus</i>), Small Sweet-grass (<i>Glyceria declinata</i>), Oval Sedge (<i>Carex ovalis</i>) and Marsh Cudweed (<i>Gnaphalium uliginosum</i>). There are areas of mixed woodland, which to the north become dominated by Beech (<i>Fagus sylvatica</i>). Further habitat diversity to the common is provided by high quality ponds within the golf course which support large populations of all five of the British amphibians. Common Lizard (<i>Lacerta vivipara</i>) is also known to be present on the site. Wildlife Site criteria: Grassland indicators.
65/001/02	Roughdown	TL045056	4.54	1997	Common land supporting old secondary broadleaved

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	Common, West Woodland				woodland which has been bisected by the A41. The broadleaved woodland is composed of Pedunculate Oak (<i>Quercus robur</i>), Beech (<i>Fagus sylvatica</i>), Ash (<i>Fraxinus excelsior</i>) and Sycamore (<i>Acer pseudoplatanus</i>). Scattered shrubs include elm (<i>Ulmus</i> sp.), Field Maple (<i>Acer campestre</i>), Blackthorn (<i>Prunus spinosa</i>), and Elder (<i>Sambucus nigra</i>) with some old coppiced Hazel (<i>Corylus avellana</i>) and Hawthorn (<i>Crataegus monogyna</i>). The ground flora is species-poor and supports shade tolerant plants such as Dog's Mercury (<i>Mercurialis perennis</i>), Ivy (<i>Hedera helix</i>), Wood Avens (<i>Geum urbanum</i>) and Nipplewort (<i>Lapsana communis</i>). This site has been left as a result of removing SSSIs from Wildlife Sites. It will be reviewed once survey data and a site assessment have been carried out. Wildlife Site criteria: Buffers an SSSI.
65/002	Sheethanger Common	TL036053	23.47	1997	Former chalk grassland and scrub on a steep north-facing chalk escarpment. The area is now mostly a golf course or secondary woodland but there are pockets of rich chalk grassland by an old chalk pit and within the roughs. More neutral grassland is found on higher ground. The woodland canopy is predominantly Pedunculate Oak (<i>Quercus robur</i>), Beech (<i>Fagus sylvatica</i>) and Ash (<i>Fraxinus excelsior</i>) with some Silver Birch (<i>Betula pendula</i>) and Sycamore (<i>Acer pseudoplatanus</i>). The shrub layer is quite diverse and includes Hazel (<i>Corylus avellana</i>), Hawthorn (<i>Crataegus monogyna</i>), Elder (<i>Sambucus nigra</i>), Blackthorn (<i>Prunus spinosa</i>) and Blackthorn (<i>Prunus spinosa</i>) with other species such as Dogwood (<i>Cornus sanguinea</i>), Rowan (<i>Sorbus aucuparia</i>) and Wayfaring Tree (<i>Viburnum lantana</i>). Numerous woodland indicators have been recorded in the ground flora such as Giant Fescue (<i>Festuca gigantea</i>), Bluebell (<i>Hyacinthoides non-scripta</i>), Wood Millet (<i>Milium</i>

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					<p>effusum), Dog's Mercury (<i>Mercurialis perennis</i>), Wood Meadow-grass (<i>Poa nemoralis</i>) and Foxglove (<i>Digitalis purpurea</i>). The chalk grassland is species-rich in places and includes Carline Thistle (<i>Carlina vulgaris</i>), Quaking Grass (<i>Briza media</i>), Upright Brome (<i>Bromopsis erecta</i>), Glaucous Sedge (<i>Carex flacca</i>), Common Eyebright (<i>Euphrasia nemorosa</i>), Yellow-rattle (<i>Rhinanthus minor</i>), Small Scabious (<i>Scabiosa columbaria</i>) and Large Thyme (<i>Thymus pulegioides</i>). Four species of orchid have been recorded including the rare Frog Orchid (<i>Dactylorhiza viridus</i>), a UK Vulnerable species. Juniper (<i>Juniperus communis</i>), a Herts Rare species, is also present. Wildlife Site criteria: Grassland indicators; old secondary woodland with a semi-natural canopy and varied structure with woodland indicators.</p>
65/003	Shrub Hill Common	TL036072	6.84	1997	<p>The site is situated in a gently undulating chalk dry valley and comprises several old pastures, an area of old secondary woodland and a length of ancient green lane. The grasslands support large areas of unimproved chalk grassland with species such as Salad Burnet (<i>Sanguisorba minor</i>), Greater Knapweed (<i>Centaurea scabiosa</i>), Slender Buckler-fern (<i>Dryopteris carthusiana</i>), Fairy Flax (<i>Linum catharticum</i>), Lady's Bedstraw (<i>Galium verum</i>), Rough Hawkbit (<i>Leontodon hispidus</i>) and Wild Strawberry (<i>Fragaria vesca</i>). These communities grade into more neutral grassland on the lower valley floor and flatter slopes, which include grasses such as Yorkshire Fog (<i>Holcus lanatus</i>), Red Fescue (<i>Festuca rubra</i>) and Common Bent (<i>Agrostis capillaris</i>) and herbs such as Creeping Buttercup (<i>Ranunculus repens</i>), Yarrow (<i>Achillea millefolium</i>) and Common Sorrel (<i>Rumex acetosa</i>). The woodland has a mixed canopy of Pedunculate Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>), Field Maple (<i>Acer campestre</i>) and Hazel (<i>Corylus avellana</i>), but most notably</p>

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					includes large areas of Yew (<i>Taxus baccata</i>), which are probably native on this site. Old pits in the north corner of the woodland support dense Elder (<i>Sambucus nigra</i>). The ancient green lane is dominated by Hornbeam (<i>Carpinus betulus</i>) with some Beech (<i>Fagus sylvatica</i>) and Pedunculate Oak. Thick mixed species hedgerows border the site on the southern and western edges and divide the two main grasslands. Wildlife Site criteria: Grassland inventory; grassland indicators.
65/004	Harrison's Moor, Boxmoor Common	TL040061	51.18	1997	Series of ancient grazing pastures, on alluvial soils alongside the River Bulbourne, which support dry to marshy, mostly semi-improved, neutral grassland. The site supports an interesting flora which is generally associated with the numerous watercourses that cross the site. Harrison's Moor is perhaps the most diverse area of grassland within the site and supports a mosaic of neutral, dry to marshy grassland. The drier grass supports species such as Crested Dog's-tail (<i>Cynosurus cristatus</i>), Creeping Bent (<i>Agrostis stolonifera</i>), Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>), Hairy Sedge (<i>Carex hirta</i>), Lesser Stitchwort (<i>Stellaria graminea</i>), Red Clover (<i>Trifolium pratensis</i>) and Meadow Buttercup (<i>Ranunculus acris</i>) plus Yellow-rattle (<i>Rhinanthus minor</i>) and Bird's-foot Trefoil (<i>Lotus corniculatus</i>) with less common Lady's Bedstraw (<i>Galium verum</i>). Wet/marshy grassland has Hard Rush (<i>Juncus inflexus</i>) and much Hairy Sedge with locally abundant Common Spike-rush (<i>Eleocharis palustris</i>). Other species in the community include Common Sorrel (<i>Rumex acetosa</i>), Glaucous Sedge (<i>Carex flacca</i>), Marsh Horsetail (<i>Equisetum palustre</i>), Brown Sedge (<i>Carex disticha</i>), Oval Sedge (<i>Carex leporina</i>) and Marsh Thistle (<i>Cirsium palustre</i>). Water Whorl-grass (<i>Catabrosa aquatica</i>) and the rare Ivy-leaved Crowfoot (<i>Ranunculus hederaceus</i>) occur along a small drain. Water

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					Voles (<i>Arvicola amphibius</i>) have been recorded along the River Bulbourne. Wildlife Site criteria: Grassland criteria; species.
65/008	Little Heath & Roseheath Wood	TL017083	10.18	1997	An area of common land comprising Roseheath Wood in the south and the larger Little Heath to the north. Roseheath Wood is old secondary woodland with a canopy of dense Beech (<i>Fagus sylvatica</i>) with frequent Hornbeam (<i>Carpinus betulus</i>). Some of the Beech has been coppiced in the past. The understorey is mainly Holly (<i>Ilex aquifolium</i>) and the ground flora is sparse, with Bramble (<i>Rubus fruticosus</i> agg.) dominant and Bluebell (<i>Hyacinthoides non-scripta</i>) occasional. Roseheath Wood is a mature secondary woodland, predominantly of Pedunculate Oak (<i>Quercus robur</i>) developed on old clay and gravel pits. Beech, Ash (<i>Fraxinus excelsior</i>) and Birch (<i>Betula</i> sp.) are also present in the canopy. The shrub layer is mainly Holly, Hawthorn (<i>Crataegus monogyna</i>) and Rowan (<i>Sorbus aucuparia</i>). Other woody species include Hazel (<i>Corylus avellana</i>), Sycamore (<i>Acer pseudoplatanus</i>), Field Maple (<i>Acer campestre</i>), Elder (<i>Sambucus nigra</i>) and Wild Cherry (<i>Prunus avium</i>). The ground flora supports a number of woodland indicators including Common Dog-violet (<i>Viola riviniana</i>) and Enchanter's Nightshade (<i>Circaea lutetiana</i>). Wildlife Site criteria: Old secondary woodland with a semi-natural canopy and varied structure; >2 ha.
65/009	Potten End Green and Pond	TL017088	1.4	1997	A village green of semi-improved neutral grassland with a central acid pond. The grassland supports a good diversity of species with several indicator species recorded such as Pignut (<i>Conopodium majus</i>), Common Knapweed (<i>Centaurea nigra</i>), Meadow Buttercup (<i>Ranunculus acris</i>), Common Sorrel (<i>Rumex acetosa</i>), Field Wood-rush (<i>Luzula campestris</i>), Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>)

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					and Oxeye Daisy (<i>Leucanthemum vulgare</i>). A variety of marginal and aquatic species (some introduced) have been recorded from the pond including Rigid Hornwort (<i>Ceratophyllum demersum</i>), Lesser Spearwort (<i>Ranunculus flammula</i>), Trifid Bur-marigold (<i>Bidens tripartita</i>), Water-plantain (<i>Alisma plantago-aquatica</i>), Canadian Waterweed (<i>Elodea canadensis</i>), Yellow Iris (<i>Iris pseudacorus</i>) and White Water Lily (<i>Nymphaea alba</i>). Fauna recorded from the pond includes several amphibians and numerous invertebrates, including uncommon species. A very rare fungus (nationally) has been recorded from the green. Scrub along the southern boundary adds to the habitat diversity. Wildlife Site criteria: Grassland indicators; species.
65/013	Gutteridge Wood	TL012082	8.18	1997	Ancient Pedunculate Oak (<i>Quercus robur</i>)/Hornbeam (<i>Carpinus betulus</i>) coppiced woodland with much Beech (<i>Fagus sylvatica</i>) and some Ash (<i>Fraxinus excelsior</i>). Other prominent species include Rowan (<i>Sorbus aucuparia</i>), Hazel (<i>Corylus avellana</i>) coppice and Goat Willow (<i>Salix caprea</i>). The ground flora supports woodland indicators such as Dog's Mercury (<i>Mercurialis perennis</i>), Bluebell (<i>Hyacinthoides non-scripta</i>), Wood Millet (<i>Milium effusum</i>), Wood Sorrel (<i>Oxalis acetosella</i>), Pignut (<i>Conopodium majus</i>) and Common Dog-violet (<i>Viola riviniana</i>). Areas with Bracken (<i>Pteridium aquilinum</i>), Bramble (<i>Rubus fruticosus</i> agg.) and Common Nettle (<i>Urtica dioica</i>) are present. Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
65/014	Hanging Wood (S. of Bourne End)	TL020054	6.28	1997	Ancient semi-natural woodland dominated by Ash (<i>Fraxinus excelsior</i>) with Pedunculate Oak (<i>Quercus robur</i>) and Beech (<i>Fagus sylvatica</i>) with Hazel (<i>Corylus avellana</i>) coppice mainly in the north. Some Hornbeam (<i>Carpinus betulus</i>) and old Wild Cherry (<i>Prunus avium</i>) are also present along with areas interplanted with species such as oak (<i>Quercus</i> sp.),

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					<p>Ash, Beech, Horse-chestnut (<i>Aesculus hippocastanum</i>), European Larch (<i>Larix decidua</i>) and Norway Spruce (<i>Picea abies</i>). The ground flora supports numerous woodland indicator species including Dog's Mercury (<i>Mercurialis perennis</i>), Bluebell (<i>Hyacinthoides non-scripta</i>), Wood Melick (<i>Melica uniflora</i>), Yellow Archangel (<i>Lamium galeobdolon</i>), Wood Millet (<i>Milium effusum</i>), Primrose (<i>Primula vulgaris</i>) and Goldilocks Buttercup (<i>Ranunculus auricomus</i>). White Helleborine (<i>Cephalanthera damasonium</i>) has been recorded. Irregular boundary and internal wood banks support some ancient coppiced Hornbeam and other species. Old pits and areas of scrub add further habitat diversity. Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.</p>
65/015	Brown's Spring and Hollybush Wood	TL025094	7.09	1997	<p>Remnants of ancient semi-natural woodland with varied stand types including Ash (<i>Fraxinus excelsior</i>)/Field Maple (<i>Acer campestre</i>)/Hazel (<i>Corylus avellana</i>) and Beech (<i>Fagus sylvatica</i>)/Ash woodland on variable soils. Ancient Hazel, Dogwood (<i>Cornus sanguinea</i>) and Guelder-rose (<i>Viburnum opulus</i>) form part of the canopy in long neglected coppice. Other species present include Holly (<i>Ilex aquifolium</i>), Wild Cherry (<i>Prunus avium</i>) and Rowan (<i>Sorbus aucuparia</i>). The woodland ground flora is diverse with many woodland indicators recorded including Bluebell (<i>Hyacinthoides non-scripta</i>), Dog's Mercury (<i>Mercurialis perennis</i>), Wood Sedge (<i>Carex sylvatica</i>), Wood Spurge (<i>Euphorbia amygdaloides</i>), Giant Fescue (<i>Festuca gigantea</i>), Woodruff (<i>Galium odoratum</i>), Hairy Wood-rush (<i>Luzula pilosa</i>), Wood Millet (<i>Milium effusum</i>), Wood Sorrel (<i>Oxalis acetosella</i>), Primrose (<i>Primula vulgaris</i>) and Early Dog-violet (<i>Viola reichenbachiana</i>). Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.</p>

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65/017	Dell Wood (N. of Gadebridge)	TL039090	4.09	1997	Ancient semi-natural Pedunculate Oak (<i>Quercus robur</i>)/ Hornbeam (<i>Carpinus betulus</i>) coppice-with-standards woodland with Hazel (<i>Corylus avellana</i>) coppice and some elm (<i>Ulmus</i> spp.), plus Wild Cherry (<i>Prunus avium</i>) and Sycamore (<i>Acer pseudoplatanus</i>) at the western end. The southern part of the wood is probably old secondary woodland comprising Pedunculate Oak and Beech (<i>Fagus sylvatica</i>) with Wild Cherry, Hazel and Holly (<i>Ilex aquifolium</i>). Many woodland indicators are present in the ground flora including Dog's Mercury (<i>Mercurialis perennis</i>), Bluebell (<i>Hyacinthoides non-scripta</i>), Hairy-brome (<i>Bromopsis ramosa</i>), Broad Buckler-fern (<i>Dryopteris dilatata</i>), Yellow Archangel (<i>Lamiastrum galeobdolon</i>), Woodruff (<i>Galium odoratum</i>), Wood Melick (<i>Melica uniflora</i>), Wood Millet (<i>Milium effusum</i>) Wood Meadow-grass (<i>Poa nemoralis</i>) and Goldilocks Buttercup (<i>Ranunculus auricomus</i>). Common Twayblade (<i>Neottia ovata</i>) has also been recorded. A ditch and pit add habitat diversity. Wildlife Site criteria: Ancient Woodland Inventory site and old secondary woodland with a semi-natural canopy and varied structure; woodland indicators.
65/020	Long Wood (S.E. of Berkhamsted)	TL005063	0.85	1997	Old, possibly ancient linear woodland remnant with a semi-natural canopy comprising mature Beech (<i>Fagus sylvatica</i>), Hornbeam (<i>Carpinus betulus</i>), Ash (<i>Fraxinus excelsior</i>) and Pedunculate Oak (<i>Quercus robur</i>) with a dense Holly (<i>Ilex aquifolium</i>) understorey. The ground flora is very diverse for the size of the wood and includes many indicator species such as Yellow Archangel (<i>Lamiastrum galeobdolon</i>), Bluebell (<i>Hyacinthoides non-scripta</i>), Wood Melick (<i>Melica uniflora</i>), Wood Millet (<i>Milium effusum</i>), Goldilocks Buttercup (<i>Ranunculus auricomus</i>), Primrose (<i>Primula vulgaris</i>), Wood Meadow-grass (<i>Poa nemoralis</i>), Early Dog-violet (<i>Viola reichenbachiana</i>) and Common Dog-violet (<i>Viola riviniana</i>). Of

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					particular note is the presence of Oxlip (<i>Primula elatior</i>), a UK Near Threatened species. Wildlife Site criteria: Old/ancient semi-natural broadleaved woodland with a semi-natural canopy and varied structure; woodland indicators.
65/031	Warners End Wood	TL044088	3.05	1997	Ancient semi-natural woodland of Pedunculate Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>), Wild Cherry (<i>Prunus avium</i>), including some very large specimens, and coppiced Hornbeam (<i>Carpinus betulus</i>); with mostly secondary woodland to the east of European Larch (<i>Larix decidua</i>) plantation and more recent planting of Pedunculate Oak (<i>Quercus robur</i>). The understorey includes Hazel (<i>Corylus avellana</i>), Holly (<i>Ilex aquifolium</i>), Blackthorn (<i>Prunus spinosa</i>) and Hawthorn (<i>Crataegus monogyna</i>). The ground flora supports a good woodland ground flora dominated by Bluebell (<i>Hyacinthoides non-scripta</i>) with additional species recorded including Wood Meadow-grass (<i>Poa nemoralis</i>), Wood Melick (<i>Melica uniflora</i>), Wood Millet (<i>Milium effusum</i>), Yellow Archangel (<i>Lamium galeobdolon</i>), Ramsons (<i>Allium ursinum</i>) and Broad Buckler-fern (<i>Dryopteris dilatata</i>). Wildlife Site criteria: Part ancient/part secondary woodland with some semi-natural canopy and field evidence suggesting an ancient origin; part present on Bryant (1822); >1 ha; woodland indicators.
65/038	Gravel Hill Spring Wood	TL045074	1.79	1997	An area of broadleaved woodland bisected by Gravel Hill lane; a sunken green lane with ancient laid hedge remnants. Ancient woodland is present to the south of the lane and old secondary woodland in the north. The ancient semi-natural woodland is composed of Pedunculate Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>), Wild Cherry (<i>Prunus avium</i>), Beech (<i>Fagus sylvatica</i>), and remnant Hornbeam coppice with some Sycamore (<i>Acer pseudoplatanus</i>). Hazel (<i>Corylus avellana</i>) and Field Maple (<i>Acer campestre</i>) coppice is also present.

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					There is a well established ground flora with many woodland indicator species recorded such as Bluebell (<i>Hyacinthoides non-scripta</i>), Yellow Archangel (<i>Lamium galeobdolon</i>), Wood Melick (<i>Melica uniflora</i>), Wood Millet (<i>Milium effusum</i>), Remote Sedge (<i>Carex remota</i>), Wood Sedge (<i>Carex sylvatica</i>), Goldilocks Buttercup (<i>Ranunculus auricomus</i>) and Common Dog-violet (<i>Viola riviniana</i>). Moschatel (<i>Adoxa moschatellina</i>) has also been recorded. A spring and old pits add habitat diversity. The secondary woodland in the north is composed of mainly Sycamore (<i>Acer pseudoplatanus</i>), Ash, Wild Cherry, Elm, Sycamore and Horse-chestnut (<i>Aesculus hippocastanum</i>). Wildlife Site criteria: Part ancient/part secondary broadleaved woodland with a semi-natural canopy and features suggesting an ancient origin; part shown on Bryant (1822); >1 ha; woodland indicators.
65/072	Grassland S. of Roughdown Common	TL045055	0.53	1997	Field supporting semi-improved circumneutral grassland with an abundance of herbs. Grasses noted include Common Bent (<i>Agrostis capillaris</i>), Meadow Foxtail (<i>Alopecurus pratensis</i>) and Yorkshire fog with herbs such as Common Knapweed (<i>Centaurea nigra</i>), Yarrow (<i>Achillea millefolium</i>), Bird's-foot Trefoil (<i>Lotus corniculatus</i>), Self-heal (<i>Prunella vulgaris</i>) and Wild Carrot (<i>Daucus carota</i>). Wildlife Site criteria: Grassland indicators.
65/073	Coleshill Wood	TL009051	6.06	1997	Broadleaf woodland dominated by Beech (<i>Fagus sylvatica</i>) and Ash (<i>Fraxinus excelsior</i>), but also some Hornbeam (<i>Carpinus betulus</i>) and Wild Cherry (<i>Prunus avium</i>). The understorey is of mainly Holly (<i>Ilex aquifolium</i>) with some Hazel (<i>Corylus avellana</i>) and Field Maple (<i>Acer campestre</i>). The ground flora is patchy and includes Bluebell (<i>Hyacinthoides non-scripta</i>), Dog's Mercury (<i>Mercurialis perennis</i>), Enchanter's Nightshade (<i>Circaea lutetiana</i>), Woodruff (<i>Galium odoratum</i>), Male Fern (<i>Dryopteris filix-mas</i>)

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					and Wood Millet (<i>Milium effusum</i>). Wildlife Site criteria: Ancient woodland inventory site; woodland indicators.
65/074	Lower Little Heath Farm Grassland (East)	TL021081	2.84	1997	Neutral grassland dominated by grasses, mainly Yorkshire Fog (<i>Holcus lanatus</i>), Common Bent (<i>Agrostis capillaris</i>) and Red Fescue (<i>Festuca rubra</i>). Herbs recorded include Bird's-foot Trefoil (<i>Lotus corniculatus</i>), Common Knapweed (<i>Centaurea nigra</i>), Lady's Bedstraw (<i>Galium verum</i>) and Red Bartsia (<i>Odontites vernus</i>). The site supports many anthills and scattered scrub. Wildlife Site criteria: Grassland indicators.
65/079	Boume End Churchyard	TL016065	0.35	1997	Churchyard with neutral grassland supporting a species-rich sward. Species recorded include Common Knapweed (<i>Centaurea nigra</i>), Pignut (<i>Conopodium majus</i>), Lady's Bedstraw (<i>Galium verum</i>), Bird's-foot Trefoil (<i>Lotus corniculatus</i>), Meadow Buttercup (<i>Ranunculus acris</i>), Bulbous Buttercup (<i>R. bulbosus</i>), Burnet-saxifrage (<i>Pimpinella saxifraga</i>), Field Scabious (<i>Knautia arvensis</i>) and Common Sorrel (<i>Rumex acetosa</i>). Gravestones, paths and surrounding hedgerows add habitat diversity. Wildlife Site criteria: Grassland indicators.
65/084	Bovingdon Reach, Three Crofts, Barnfield	TL029054	21.66	2003	Secondary grassland developed on set-aside arable. A good diversity of grasses and herbs have been recorded from the site, including a number of ruderal and field weed species, such as Yorkshire Fog (<i>Holcus lanatus</i>), Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>), Common Bent (<i>Agrostis capillaris</i>), Bird's-foot Trefoil (<i>Lotus corniculatus</i>), Common Knapweed (<i>Centaurea nigra</i>), Common Centaury (<i>Centaureum erythraea</i>), Oxeye Daisy (<i>Leucanthemum vulgare</i>), Common Rest-harrow (<i>Ononis repens</i>) and the uncommon Thorn-apple (<i>Datura stramonium</i>). Wildlife Site criteria: Grassland indicators.
65/088	Moor End Farm	TL03-05-	0	2000	Building and environs important for protected species. Wildlife

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					Site criteria: Species.
65/098	Former Halsey School Playing Field	TL042088	10.61	2009	Site comprising three main areas of habitat. To the west is a large area of uniform species-poor semi-improved grass dominated by False Oat-grass (<i>Arrhenatherum elatius</i>) and Cock's-foot (<i>Dactylis glomerata</i>) with some Yorkshire Fog (<i>Holcus lanatus</i>) and Common Couch (<i>Elytrigia repens</i>) with herbs generally uncommon. Further to the east is a lower lying area enclosed to the south and west by steep inward-facing slopes with unimproved neutral to somewhat calcareous grassland which supports a moderately species-rich community of grasses and herbs plus abundant invading shrub and tree species. The sward is dominated by False Oat-grass, Cock's-foot and Yorkshire Fog and herbs recorded include Oxeye Daisy (<i>Leucanthemum vulgare</i>), Meadow Vetchling (<i>Lathyrus pratensis</i>), Red Clover (<i>Trifolium pratense</i>), Grass Vetchling (<i>Lathyrus nissolia</i>) and Common Spotted-orchid (<i>Dactylorhiza fuchsii</i>) and Pyramidal Orchid (<i>Anacamptis pyramidalis</i>). To the north the third, smaller, area lies on a north-facing slope and is dominated by blocks of broadleaved plantation. The site is important for Roman Snail (<i>Helix pomatia</i>), a protected species. Wildlife Sites Criteria: Species.
74/002	Bury Wood (near Sheethanger Common)	TL030048	7.6	1997	Ancient semi-natural Pedunculate Oak (<i>Quercus robur</i>)/Hornbeam (<i>Carpinus betulus</i>) coppice-with-standards woodland which now supports a canopy of mixed species. The northern section is predominantly mixed broadleaved plantation with some semi-natural elements remaining. Largely of Silver Birch (<i>Betula pendula</i>), Ash (<i>Fraxinus excelsior</i>), Sweet Chestnut (<i>Castanea sativa</i>), Pedunculate Oak, Wild Cherry (<i>Prunus avium</i>), Beech (<i>Fagus sylvatica</i>) and Sycamore (<i>Acer pseudoplatanus</i>). The southern half is more semi-natural, though Pedunculate Oak dominates large

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					areas. The far eastern end supports mature Ash and Wild Cherry with Sycamore plus semi-mature Silver Birch regeneration and has been extensively replanting with Pedunculate Oak, Ash and Wild Cherry. The ground flora is diverse and supports numerous indicators including Bluebell (<i>Hyacinthoides non-scripta</i>), Wood Sedge (<i>Carex sylvatica</i>), Broad Buckler-fern (<i>Dryopteris dilatata</i>), Yellow Archangel (<i>Lamium galeobdolon</i>), Wood Millet (<i>Milium effusum</i>) Hairy Wood-rush (<i>Luzula pilosa</i>), Wood Sorrel (<i>Oxalis acetosella</i>), Primrose (<i>Primula vulgaris</i>) and violets (<i>Viola</i> spp.). Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
74/013	Gorsefield Wood & Ramacre Wood	TL025049	8.16	1997	Ancient semi-natural mixed woodland with Pedunculate Oak (<i>Quercus robur</i>) and Hornbeam (<i>Carpinus betulus</i>) coppice and standards plus Beech (<i>Fagus sylvatica</i>), Ash (<i>Fraxinus excelsior</i>), Silver Birch (<i>Betula pendula</i>), Hazel (<i>Corylus avellana</i>) and Sycamore (<i>Acer pseudoplatanus</i>). Rhododendron (<i>Rhododendron ponticum</i>) is frequent plus there is some conifer planting, mainly of European Larch (<i>Larix decidua</i>). The ground flora supports many woodland indicators including locally abundant Bluebell (<i>Hyacinthoides non-scripta</i>) plus Wood Sedge (<i>Carex sylvatica</i>), Pignut (<i>Conopodium majus</i>), Broad Buckler-fern (<i>Dryopteris dilatata</i>), Wood Melick (<i>Melica uniflora</i>) Wood Millet (<i>Milium effusum</i>), Wood Meadow-grass (<i>Poa nemoralis</i>) and Common Dog-violet (<i>Viola riviniana</i>). A Hornbeam hedge is present along the northern margin and old chalk pits and a clearing within the wood increase habitat diversity. Wildlife Site criteria: Ancient Woodland Inventory site; shown on Bryant (1822); woodland indicators.
74/057	Shothanger Way Grassland	TL027046	0.47	2000	Site supporting secondary woodland and scrub with open areas of rough grassland. Some old standards are present

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					<p>along the perimeter, mainly to the south and north, of Pedunculate Oak (<i>Quercus robur</i>), Ash (<i>Fraxinus excelsior</i>) and Silver Birch (<i>Betula pendula</i>). The wood/scrub is typically Pedunculate Oak, Ash, Hornbeam (<i>Carpinus betulus</i>) and Wild Cherry (<i>Prunus avium</i>) with Hawthorn (<i>Crataegus monogyna</i>) and some Blackthorn (<i>Prunus spinosa</i>). Several woodland indicators are present in the ground flora including Bluebell (<i>Hyacinthoides non-scripta</i>), Wood Meadow-grass (<i>Poa nemoralis</i>) and a violet (<i>Viola</i> sp.) The grass sward supports a good mix of species, for example Common Sorrel (<i>Rumex acetosa</i>), Agrimony (<i>Agrimonia eupatoria</i>), Common Knapweed (<i>Centaurea nigra</i>), Meadow Buttercup (<i>Ranunculus acris</i>) and Common Spotted-orchid (<i>Dactylorhiza fuchsii</i>). Wildlife Site criteria: Grassland indicators.</p>
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