

Issue Date: November 2009	UNCLASSIFIED DIRECTORATE MAJOR PROJECT	Issue No: 3
15. Ecology	Pegasus Environmental Appraisal Volume 1	Reference: PEG_RPT_100425

15. ECOLOGY

15.1 Introduction

This chapter of the Environmental Appraisal (EA) assesses the potential impacts of the Proposed Development on ecology. The chapter addresses the ecological constraints associated with the Proposed Development, the potential impacts of the construction and operational phases and the proposed measures for ecological mitigation and enhancement. The chapter has been written by RPS and URS Corporation Limited (URS).

15.1.1 The Proposed Development

The Application Site is located within the AWE Aldermaston site (see Figure 15-1). The Application Site and Proposed Development have been outlined in detail in *Chapter 1: Introduction and Chapter 5: The Proposed Development* of this Environmental Appraisal (EA). The Proposed Development consists of the following main elements:

- 1) The Proposed Facility;
- 2) The temporary construction enclave and associated facilities; and
- 3) The landscaping and biodiversity proposals.

For the purposes of the development proposals the construction enclave is split into three distinct areas:

- 1) *Primary Construction Area* – this is the area within which the Proposed Facility will be located. It will be built and located within the secure Nuclear Storage and Processing Area (NSPA).
- 2) *Construction Establishment Area* – this area is adjacent to the Primary Construction Area and will be set aside for storage of construction equipment and materials.
- 3) *Construction Support Area* – this area will provide additional space to locate open storage, waste management facilities, storage containers, office and welfare accommodation as well as holding areas for delivery vehicles. The Construction Support Area will include part of an established construction enclave known as the West End Construction Enclave (WECE), previously identified within the New Office Accommodation (NOA) planning application (which was granted planning permission from West Berkshire Council in February 2007) and the HEFF Planning Application (which was granted planning permission from West Berkshire Council in February 2008). Further details of the construction phase are detailed in Chapter 6: *Construction Phase* of this ES.

15.2 Legislation and Planning Policy Context

A planning policy review is provided in *Chapter 3: Planning Policy Context* of this EA. The following plans and policies are specifically relevant to the ecological assessment and are set out in more detail within *Technical Appendix G 15.1*.

Relevant planning policy documents include:

- Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation (Ref. 15-1) - the Government's national planning guidance on nature conservation;
- West Berkshire Local Plan (Ref. 15-2): the local plan identifies the nature conservation features of the Borough and include policies for their protection; and
- The UK Biodiversity Action Plan (Ref. 15-3) and Berkshire and Hampshire Biodiversity Action Plans (Ref. 15-4 and Ref. 15-5), which identify habitats and species for which targets and objectives, have been set for their protection and enhancement.

Key legislation relevant to the project includes:

- The Conservation (Natural Habitats &c.) Regulations 1994 (Habitats Regulations) (Ref. 15-6);
- Wildlife and Countryside Act 1981 (as amended) (WCA) (Ref. 15-7);
- Countryside and Rights of Way Act 2000 (Ref. 15-8); and
- Natural Environment and Rural Communities Act 2006 (Ref. 15-9).

15.3 Assessment Methodology

This assessment takes account of the following relevant guidance:

- Institute of Environmental Assessment (1995) Guidelines for Baseline Ecological Assessment (Ref. 15-10); and
- Institute of Ecology and Environmental Management (2006) Guidelines for Ecological Impact Assessment in the United Kingdom (Ref. 15-11).

In accordance with this guidance, the assessment has been undertaken in four main stages:

- Baseline studies (to existing conditions);
- Identification of Valued Ecological Receptors;
- Identification and characterisation of potential impacts; and
- Assessment of significance of impacts.

15.3.1 Baseline Studies

The baseline studies comprised a combination of desk based study and fieldwork, to establish the baseline conditions for the Application Site. The baseline section comprises information provided by a desk study, a Phase 1

habitat survey undertaken in May 2009 and black redstart survey in May, June and July 2009 (see *Technical Appendix G 15.5*). The methodologies for the surveys are described below.

15.3.1.1 Desk Study

Baseline information about ecological features including sites of importance for nature conservation, species populations, species assemblages and habitats has been obtained from:

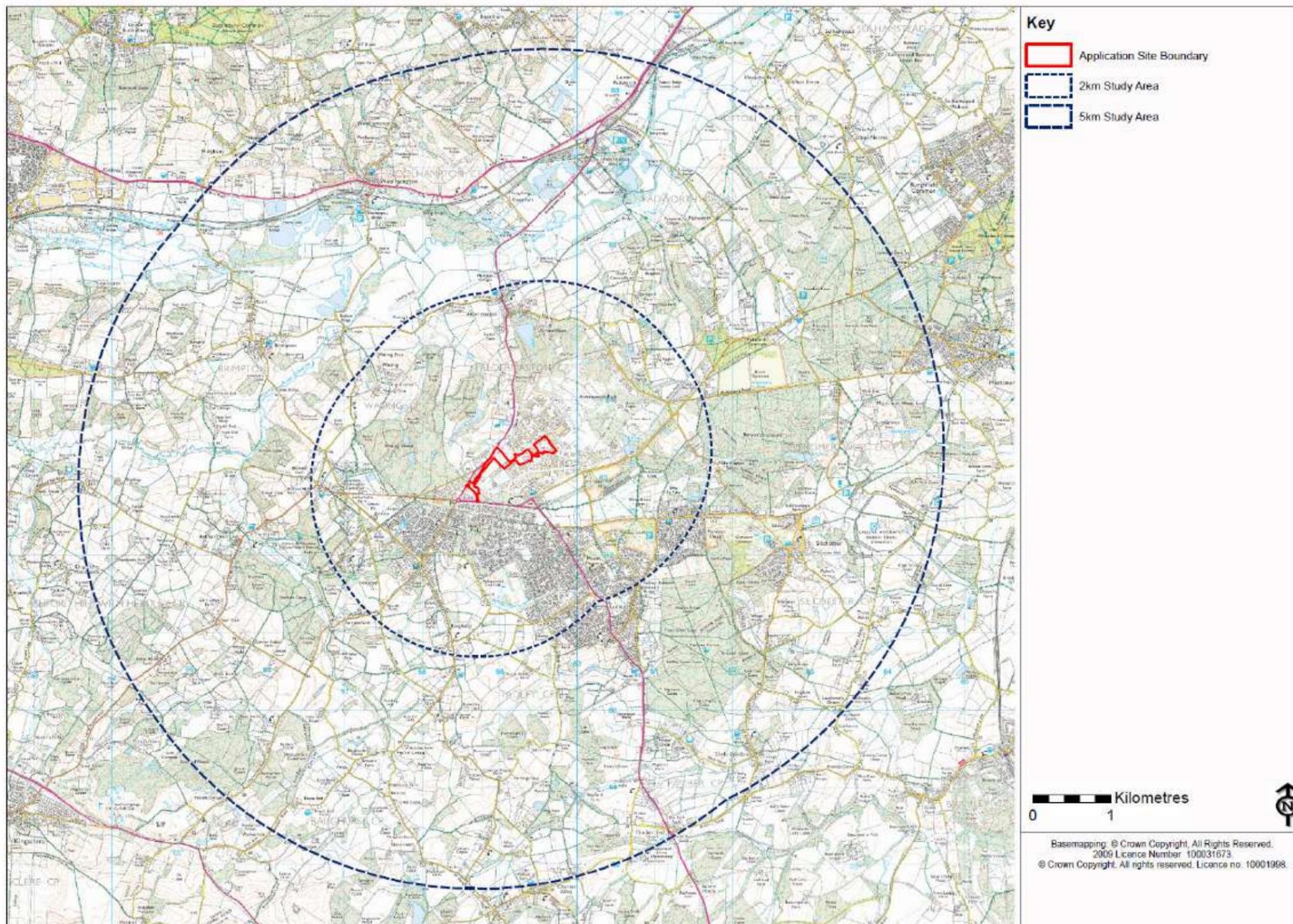
- Existing data and information relevant to the site from published sources, databases and local recorders;
- Consultation; and
- Ecological surveys.

Information relating to sites designated for their nature conservation importance and records of protected (or otherwise important) species were requested for a 2km to 5km study area around the site from the following statutory and non-statutory consultees:

- Natural England;
- Environment Agency;
- West Berkshire County Council;
- Thames Valley Environmental Record Centre (TVERC);
- Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT);
- Berkshire and South Buckinghamshire Bat Group;
- Berkshire Bird Recorder;
- Reading Royal Society for the Protection of Birds (RSPB) Group;
- Berkshire Amphibian and Reptile Group;
- Binfield Badger Group;
- Upper Thames Branch Butterfly Records Officer; and
- Berkshire Moth Recorder.

The aim of a desk study was to collate existing records for the site and surrounding area. In addition, reference was made to the Berkshire and Hampshire Biodiversity Action Plans (BAPs), as well as the websites for Natural England (Ref. 15-12) and MAGIC (Multi-Agency Geographical Information for the Countryside) (Ref. 15-13).

Figure 15-1: Site location and Desk Study Search Area (2km and 5km)



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15.3.1.2 Field Surveys

An Extended Phase 1 Habitat Survey was carried out to identify the habitats present within the Application Site boundary, and to identify the potential for the site to support protected species. 'Protected Species' refers to any species specially protected under the following legislation:

- The Conservation (Natural Habitats &c.) Regulations 1994 (Habitats Regulations);
- European Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora 92/43/EEC (the Habitats Directive) Annex IV (Ref. 15-14);
- Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive) Annex I (Ref. 15-15);
- Wildlife and Countryside Act 1981 (WCA) (as amended); and
- Protection of Badgers Act 1992 (Ref. 15-16).

The Extended Phase 1 Habitat Survey was carried out on 14th May 2009 by an experienced Ecologist. The survey took account of the standard methodology as set out by the Joint Nature Conservation Committee Handbook for Phase 1 Habitat Survey - A technique for environmental audit (Ref. 15-17).

As a result of the Phase 1 habitat survey a black redstart survey was conducted on site in May, June and July 2009. This survey followed the Royal Society for the Protection of Bird's black redstart survey methodology (Ref. 15-18) with reference also to the Black Redstarts Organisation survey guidance (Ref. 15-19).

15.3.2 Identification of Valued Ecological Receptors

The desk studies and field studies allowed a number of sites, habitats, species assemblages and species populations to be identified. These features are known as receptors. Those receptors that are present within the zone of influence of the Proposed Development are evaluated with reference to their importance in terms of 'biodiversity conservation' (which relates to the need to conserve representative areas of different habitats and the genetic diversity of species populations). Those receptors that are valued and could be affected by the project in some way are considered Valued Ecological Receptors (VERs).

Where appropriate, reference is made to social benefits that species and habitats deliver (e.g. relating to enjoyment of flora and fauna by the public) and economic benefits that they provide, but only where these are significant considerations.

For the purposes of this assessment, sites, habitats, species assemblages and species populations have been valued using the following scale:

- International;
- National;
- Regional;
- County;

- District/Borough;
- Parish; and
- Neighbourhood.

The valuation of sites makes use of established value systems (e.g. Sites of Special Scientific Interest are of national importance, County Wildlife Sites are of county importance). Judgement is required for the valuation of sites of less than county value.

The valuation of habitats, species assemblages and species populations uses accepted criteria, examples include:

- **Species populations.** The importance of populations is evaluated on the basis of their size, recognised status (e.g. published lists of species of conservation concern, BAP status) and legal protection status. For example, bird populations exceeding 1% of published biogeographic populations are considered to be of international importance, those exceeding 1% of published national populations are considered to be of national importance, etc.
- **Species assemblages.** In some instances it is the species assemblage that is of importance. Criteria used to evaluate the importance of assemblages include Sites of Special Scientific Interest (SSSI) selection criteria. Fuller (1980) (Ref. 15-20), also provides a dated but useful framework for evaluating the relative importance of bird assemblages.
- **Habitats.** Criteria for the evaluation of habitats and plant communities include Annex III of the EC Habitats Directive, guidelines for the selection of biological SSSIs (Ref. 15-21) and, where available, Local Authority and Wildlife Trust criteria for the selection of Local Sites (e.g. County Wildlife Sites).

In this assessment sites, habitats, species assemblages and species populations which could be affected by the proposals are considered to be VERs if they meet the district level of importance.

15.3.3 Identification and Characterisation of Potential Impacts

The likely impacts of the Proposed Development during its construction and operation are identified and characterised taking into consideration the following parameters:

- Positive or negative – whether the impact will result in net loss or degradation of a VER or whether it will enhance or improve it;
- Magnitude – the size or intensity of the impact measured in relevant terms, e.g. number of individuals lost or gained, area of habitat lost or created, or the degree of change to existing conditions (e.g. noise or lighting levels);
- Extent – the spatial scope of the impact, for example the physical area affected or the geographical pattern of the impact;
- Duration – the length of time over which the impact occurs;

- Reversibility – the extent to which impacts are reversible either spontaneously or through active mitigation; and
- Timing and frequency – consideration of the timing of events in relation to ecological change, some impacts may be of greater significance if they take place at certain times of year (e.g. breeding season). The extent to which an impact is repeated may also be of importance.

The impact assessment takes into account any measures to avoid or reduce the impact, which are integral to the design of the development and to which there is commitment.

An indication of the confidence with which predictions of potential impacts are made has been given.

The magnitude of the predicted impact on VERs is assessed as indicated in Table 15-1 below.

Table 15-1: Criteria for Determining the Magnitude of Impacts

Magnitude	Criteria
Major negative	The proposal may adversely affect the conservation status of the site or feature.
Intermediate negative	The site or feature's conservation status will not be adversely affected, but the effect is likely to be significant in terms of ecological objectives or populations. If, in the light of full information, it cannot be clearly demonstrated that the proposal will not have an adverse effect on conservation objectives, then the impact should be assessed as major negative.
Minor negative	Neither of the above apply, but some minor negative impact is likely.
Negligible	No observable impact.
Positive	Impacts which provide a gain for biodiversity.

Conservation status as defined by the Institute of Ecology and Environmental Management (2006) is as follows:

- **Habitats** – 'conservation status is determined by the sum of the influences acting on the habitat and its typical species, that may affect its long-term distribution, structure and functions as well as the long-term survival of its typical species within a given geographical area'.
- **Species** – 'conservation status is determined by the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations within a given geographical area'.

The assessment as to whether the favourable conservation status of a VER is likely to be compromised has been made using professional judgement based on an analysis of the predicted impact of the Proposed Development.

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For designated sites that are affected by the project, the focus is on the impacts on the integrity of each site, defined as 'the coherence of ecological structure and function, across a site's whole area, that enable it to sustain the habitat, complex of habitats and/or levels of populations of species for which it was classified.' This assessment has been made with reference to the features for which a site has been classified/notified and involves combining assessments of the impacts on the conservation status of each of these features.

For non-statutory sites, such features may not have been formally defined but the main interest features have been identified from the site description.

15.3.4 Positive impacts

A positive impact is considered to be significant if it would result in:

- A non-valued ecological receptor becoming valued;
- Restoration of favourable conservation status for a habitat/species population; and/or
- Restoration of a site's integrity (where this has been undermined).

15.3.5 Assessment of Significance

The significance of adverse or beneficial effects has been assessed on the basis of the value of the features and the magnitude of impacts as set out in Table 15.2 below.

Table 15-2: Estimating the Significance of Impacts

Magnitude of impact	Nature conservation value of features affected				
	International	National	Regional	County	District/Borough
Major	Substantial	Substantial	Major	Moderate	Slight
Intermediate	Major	Major	Moderate	Moderate	Slight
Minor	Slight	Slight	Slight	Slight	Slight
Negligible	Negligible	Negligible	Negligible	Negligible	Negligible

The significance of the impacts is thus determined in terms of the importance/value and sensitivity of the sites, habitats and species that would be affected and the magnitude. The impacts listed in Table 15-2 can be both negative and positive.

An assessment has been made of the likely nature conservation impacts which would arise as a consequence of implementing the proposals both during construction and operation. The potential for positive and negative impacts has been considered. The significance of any impact has been determined in terms of the importance/value and sensitivity of the habitats and species that would be affected.

It is generally the case that no significant impact can occur to features of less than district importance, other than in exceptional circumstances such as where a feature has high social or economic value, or the impact magnitude is particularly high.

The assessment also takes account of any likely changes including, for example, trends in the population size or distribution of species, likely changes to the extent of habitats and the impact of other proposed developments or land-use changes.

15.4 Baseline Conditions

The AWE Aldermaston site as a whole supports a diversity of flora and fauna, including legally protected species and those identified as priorities for conservation within national and local Biodiversity Action Plans (BAP).

The baseline described in this section comprises information provided by a desk study, a Phase 1 habitat survey undertaken in May 2009 and black redstart survey in May, June and July 2009 (see *Technical Appendix G 15.5*). The findings of these surveys have been used to describe the existing ecological and nature conservation interest of the Application Site. The results for the surveys are described below.

15.4.1 Desk Study

Organisations and individuals, both statutory and non-statutory, were asked to provide records of designated sites and protected or otherwise notable species within the study area in 2009. Copies of the replies received are attached in *Technical Appendix G 15.2* and summarised in Table 15-3 below.

Table 15-3: Summary of Consultee Responses

Consultee	Information supplied
Natural England	Provided details of where information may be found such as TVERC, Nature on the Map and MAGIC.
Environment Agency	Informed of presence of otters in the River Kennet and referred to TVERC for more comprehensive records.
West Berkshire County Council	Informed that all WBC's records have been deposited with TVERC.
Thames Valley Environmental Records Centre (TVERC).	Provided details of protected species recorded post 1999 and designated sites within the search area.
Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT).	Informed that all BBOWT data is held with TVERC.
Berkshire and South Buckinghamshire Bat Group	Referred to TVERC.
Berkshire Bird Recorder	No response received.
Reading RSPB Group	No response received.

Consultee	Information supplied
Berkshire Amphibian and Reptile Group	Do not hold any records from within search area.
Binfield Badger Group	Provided records of badgers within search area.
Upper Thames Branch Butterfly Records Officer	No response received.
Berkshire Moth Recorder	No response received.

Designated Sites

Statutory Designated Sites

There are 5 statutory sites within 2km of the site boundary, all of which are designated as Sites of Special Scientific Interest (SSSI):

- Wasing Pools SSSI;
- West's Meadow, Aldermaston SSSI;
- Pamber Forest & Silchester Common SSSI;
- Ashford Hill Woods and Meadows SSSI; and
- Decoy Pit, Pools & Wood SSSI.

Wasing Wood Ponds SSSI and West's Meadow, Aldermaston SSSI are within 1km of the site boundary. In addition, part of Pamber Forest and Silchester Common SSSI is managed as a Local Nature Reserve (LNR). Part of Decoy Pit, Pools and Woods SSSI is also designated as a Wildlife Trust Reserve and part of the Ashford Hill Woods and Meadows SSSI is designated as a National Nature Reserve (NNR). The descriptions of these sites are summarised in *Technical Appendix G 15.3* and site locations are shown on Figure 15-2.

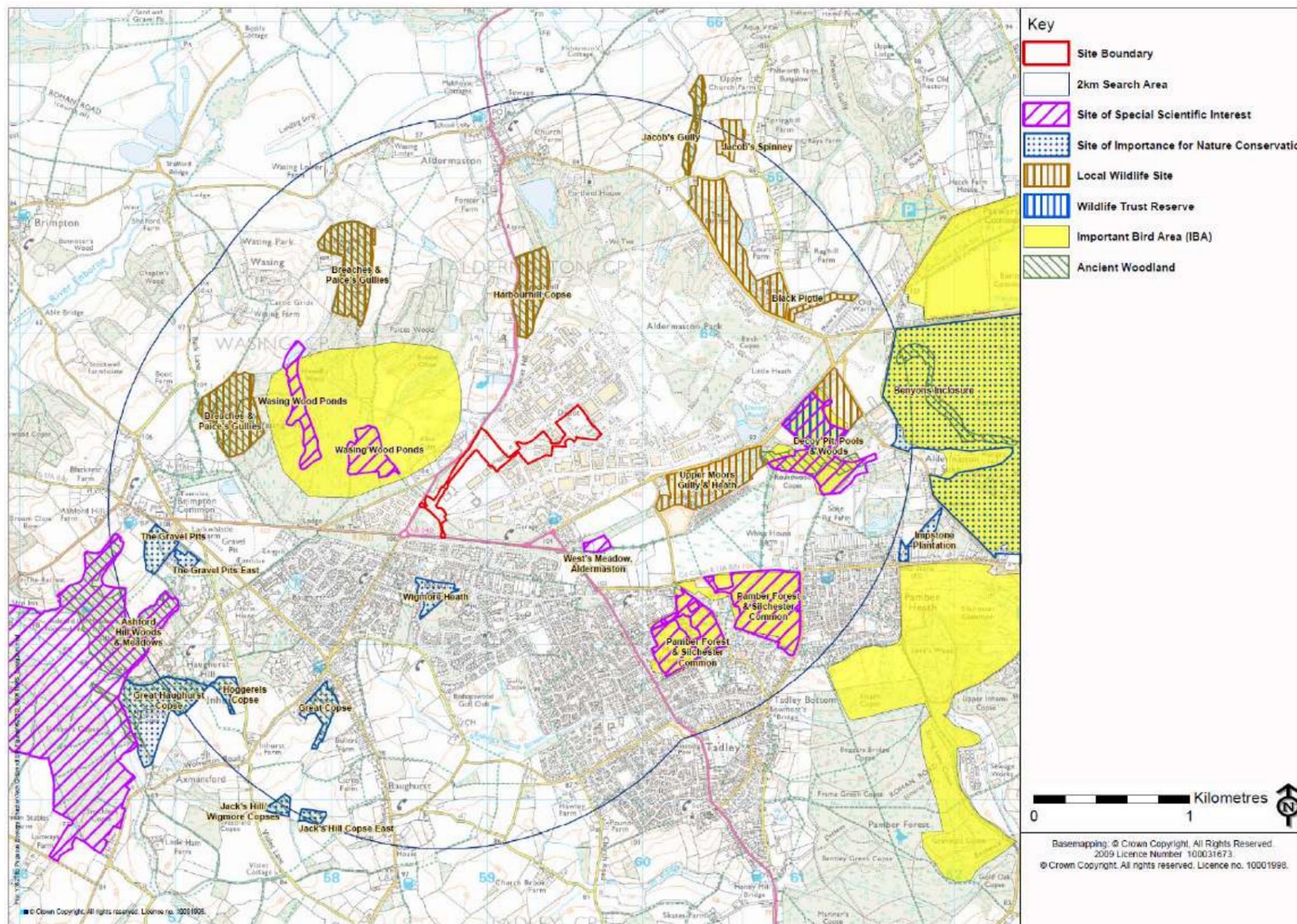
Non-statutory designated sites

There are a total of 17 non-statutory designated sites within the 2km search area, including 10 Sites of Importance for Nature Conservation (SINC) and 7 Local Wildlife Sites (LWS). The descriptions of these sites (where available) are summarised in *Technical Appendix G 15.3* and site locations are shown on Figure 15-2.

Ancient Woodlands

There are 7 sites of Ancient Woodland within 2km of the site boundary and these are provided in *Technical Appendix G 15.3* and shown on Figure 15-2.

Figure 15-2: Statutory and Non-statutory Designated Sites within 2kn



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Flora

Eight protected or other notable plant species have been recorded in the search area. These include the Bluebell, protected under Schedule 8 of the WCA, 2 UK BAP Priority species, 1 Hampshire BAP Priority species and 4 species listed as Vulnerable or Near Threatened on the IUCN Red List. The locations of the plant records are shown on Figure 15-6 and full details are located within *Technical Appendix G 15.3*.

Bluebell was recorded twice at two woodland sites within the 2km study area. The closest record was within woodland approximately 1.6km from the Application Site.

15.4.2 Protected Species

Records of all protected species recorded within 2km of the site, post 1999, provided by consultees are summarised in *Technical Appendix G 15.3* and shown on Figures 15-3 to 15-5.

Full details of protected species records are given in *Technical Appendix G 15.5* (RPS Ecological Desk Study & Phase 1 Habitat Survey, June 2009) and further information of the conservation status as listed below is provided in *Technical Appendix G 15.4*.

Birds

47 protected or notable bird species have been recorded in the search area. These include 11 species (woodlark, Dartford warbler, kingfisher, red kite, hobby, barn owl, fieldfare, redwing, green sandpiper, little ringed plover and brambling) listed on Schedule 1 of the WCA of which 4 (woodlark, Dartford warbler, kingfisher and red kite) are also listed on Annex 1 of the EC Birds Directive (nightjar), 1 additional species listed on Annex 1 of the EC the Birds Directive, 18 UK BAP species, 1 Local BAP species and 16 Amber-listed species.

The locations of the bird records are shown on Figure 15-3 with a full list provided in *Technical Appendix G 15.3*. Bird records with grid references accurate to only 4 figures (i.e. records are located within a 1km grid square) are plotted at the centre point of the grid square.

Bird records are concentrated in or near Tadley to the south-east of the Application Site and around Decoy Pit, Pools and Woods SSSI to the east of the Application Site.

Mammals

Records of eight protected or other notable species of mammal have been provided for the search area and are listed in *Technical Appendix G 15.3*. These include 5 bat species which are European Protected Species (EPS) and listed on Schedule 5 of the WCA, 1 polecat which is listed on Annex V of the Habitats Directive and a UK BAP Priority species, badgers which are protected under the Protection of Badgers Act 1992 and harvest mouse which is a UK and local BAP Priority species. The locations of the mammal records are shown on Figure 15-5 and full details are located within *Technical Appendix G 15.3*.

Bat records include 13 common pipistrelle, 7 unidentified pipistrelles, 7 brown long-eared bats, 7 natterer's bats and 3 unidentified bats. Brown long-eared bats and common pipistrelles have been recorded within 1km of the Application Site. Pipistrelle bats (species unknown) and bats of unknown species have been recorded within 2km of the Application Site boundary.

Two records of badger were provided for the search area; 1 record is located 610m west of the site boundary within Wasing Wood, and the other record is located 2km north of the Application Site boundary on the A340.

One record of a polecat was provided for the search area, located near south-west of the Application Site boundary near Wolverton Road.

One record of a harvest mouse was provided for the search area located in Decoy Pit, Pools and Woods SSSI.

Herpetofauna

Records of eight protected species of herpetofauna have been provided for the search area and are listed in *Technical Appendix G 15.3*. These include great crested newt (European Protected Species) and 7 species listed under Schedule 5 of the WCA (section 9(5) only). The locations of the herpetofauna records are shown on Figure 15-5 and full details are located within *Technical Appendix G 15.3*.

The great crested newt record is located within Decoy Pit, Pools and Woods SSSI.

Nine records of common frogs were provided for the search area and the closest location is on the edge of Wasing Wood.

Four records of common toads were provided for the search and area and the closest location is within 300m of the Application Site boundary to the west of Paices Hill.

Sixteen records of slow worms were provided for the search area and the closest location is within Decoy Pit, Pools and Woods SSSI.

Ten records of grass snakes were provided for the search area and the closest location is within Decoy Pit, Pools and Woods SSSI.

Twenty-two records of adders were provided for the search area and the closest location is within Decoy Pit, Pools and Woods SSSI.

Ten records of common lizard were provided for the search area and the closest location is on the eastern edge of Wasing Wood.

Three records of smooth newts were provided for the search area and the closest location is within Decoy Pit, Pools and Woods SSSI.

Invertebrates

Records of 84 protected species of invertebrates have been provided for the search area and are listed in *Technical Appendix G 15.3*. These include 2

species listed under Schedule 5 of the WCA (section 9(5) only) (silver studded hairstreak and black hairstreak butterflies), 48 UK BAP Priority species, 3 Berkshire BAP priority species, 7 Hampshire BAP priority species, 5 Notable species, 2 Nationally Rare species, 12 Nationally Scarce species and 5 Nationally Notable species. The locations of the invertebrate records are shown on Figure 15-4 and more detail is provided at *Technical Appendix G 15.3*.

There are records of silver studded hairstreak and black hairstreak butterflies within Decoy Pit, Pools and Woods SSSI with additional records for Silver-studded blue located north of Pamber Forest.

Other invertebrate records are concentrated in and around the Decoy Pit, Pools and Woods SSSI, Pamber Forest and in or around the Ashford Hill Woods and Meadows SSSI.

15.4.3 Phase 1 Habitat Survey

Site overview

The land proposed for the redevelopment at AWE consists of small areas of semi-improved grassland, a large area of partially colonised gravel and juvenile to semi-mature trees, with construction laydown areas and a large existing car park.

Habitats present within the Application Site

The results of the Extended Phase 1 Habitat Survey are described by habitat below. The Phase 1 Habitat Plan is shown on Figures 15-7a and 15-7b and the associated numbered target notes (TNx) are provided in *Technical Appendix G 15.6*.

A list plant species recorded is provided in *Technical Appendix G 15.7* (nomenclature follows Stace, 1997).

Broadleaved and Coniferous Scattered Parkland Trees

There are several scattered parkland trees present within the Application Site. These include horse chestnut, Scot's pine, lime, poplar, oak, rowan, silver birch and poplar. These trees form a dense linear boundary along the south western boundary, adjacent to the existing West End Car Park.

None of these semi mature to mature trees have bat roosting opportunities due to their well intact nature, i.e. no heavy ivy cladding, splits, loose bark or woodpecker holes. Bird's nests from this summer were observed in many of the trees on Site.

The semi mature and mature trees are of ecological value due to their age and their opportunities for nesting and foraging birds and roosting and commuting/foraging habitat for bats, especially the dense tree avenue along the WECE access road.

Figure 15-3: Protected and Notable Bird Species

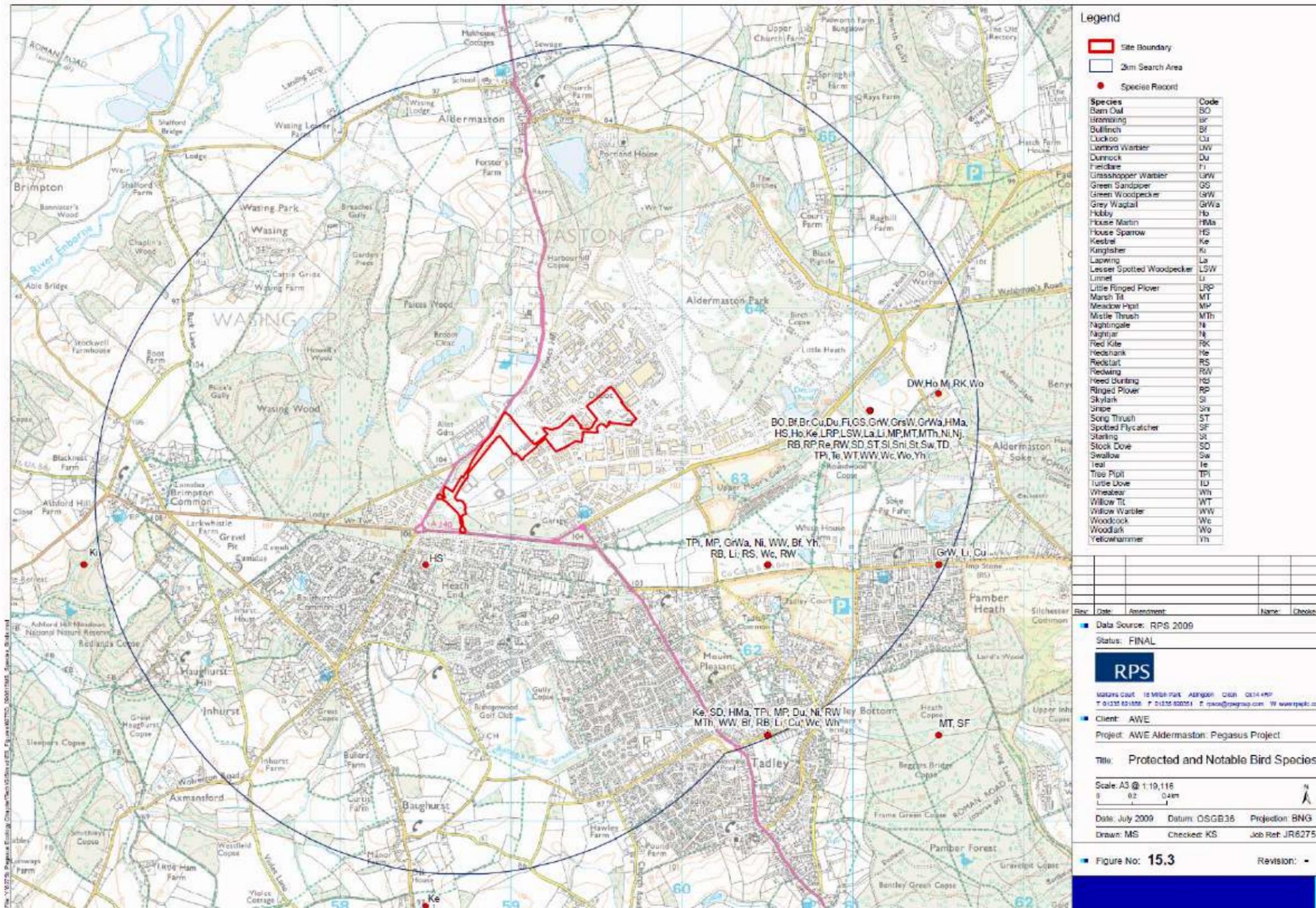


Figure 15-4: Protected and Notable Invertebrate Species

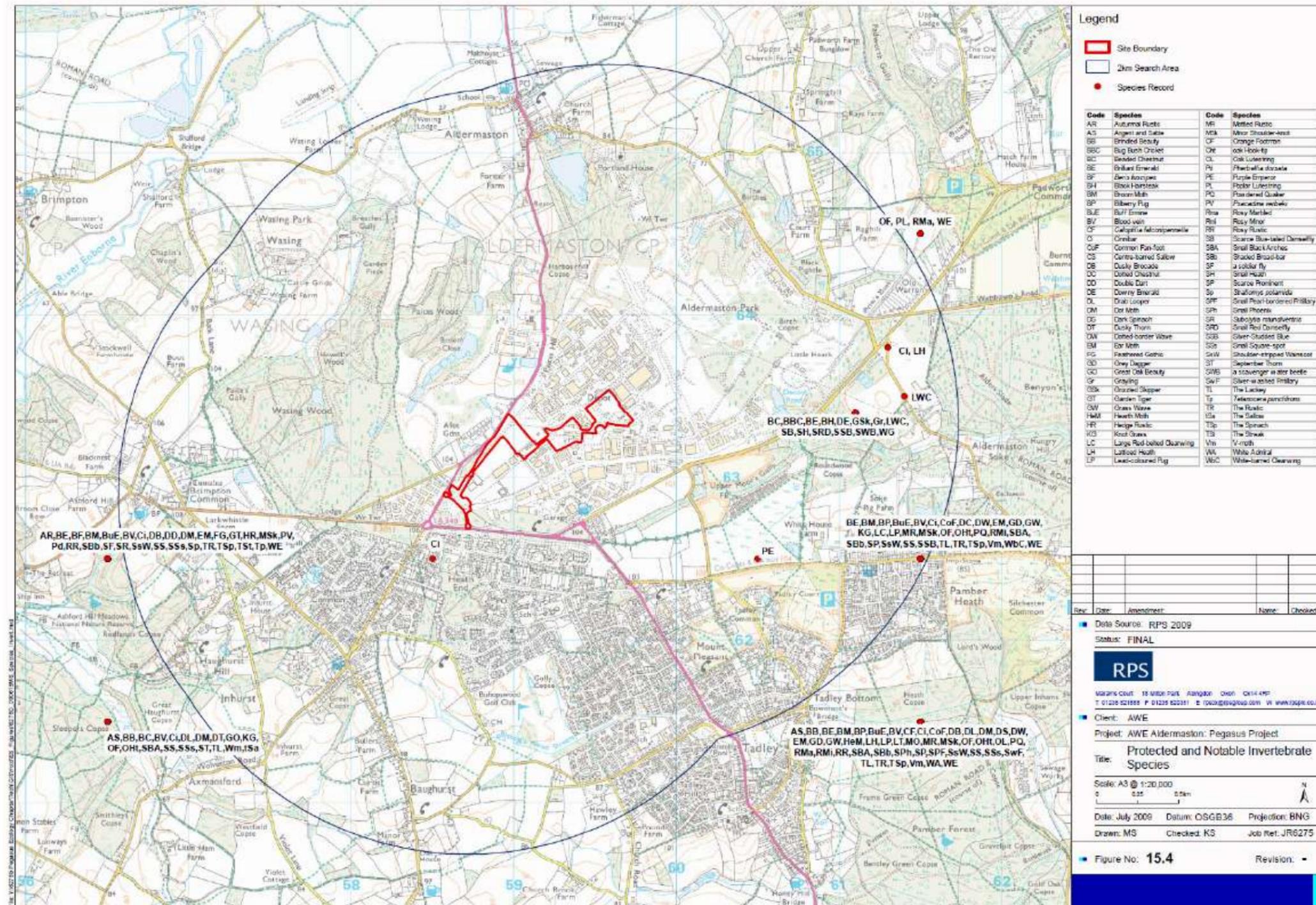


Figure 15-5: Protected and Notable Mammal and Herpetofauna Species

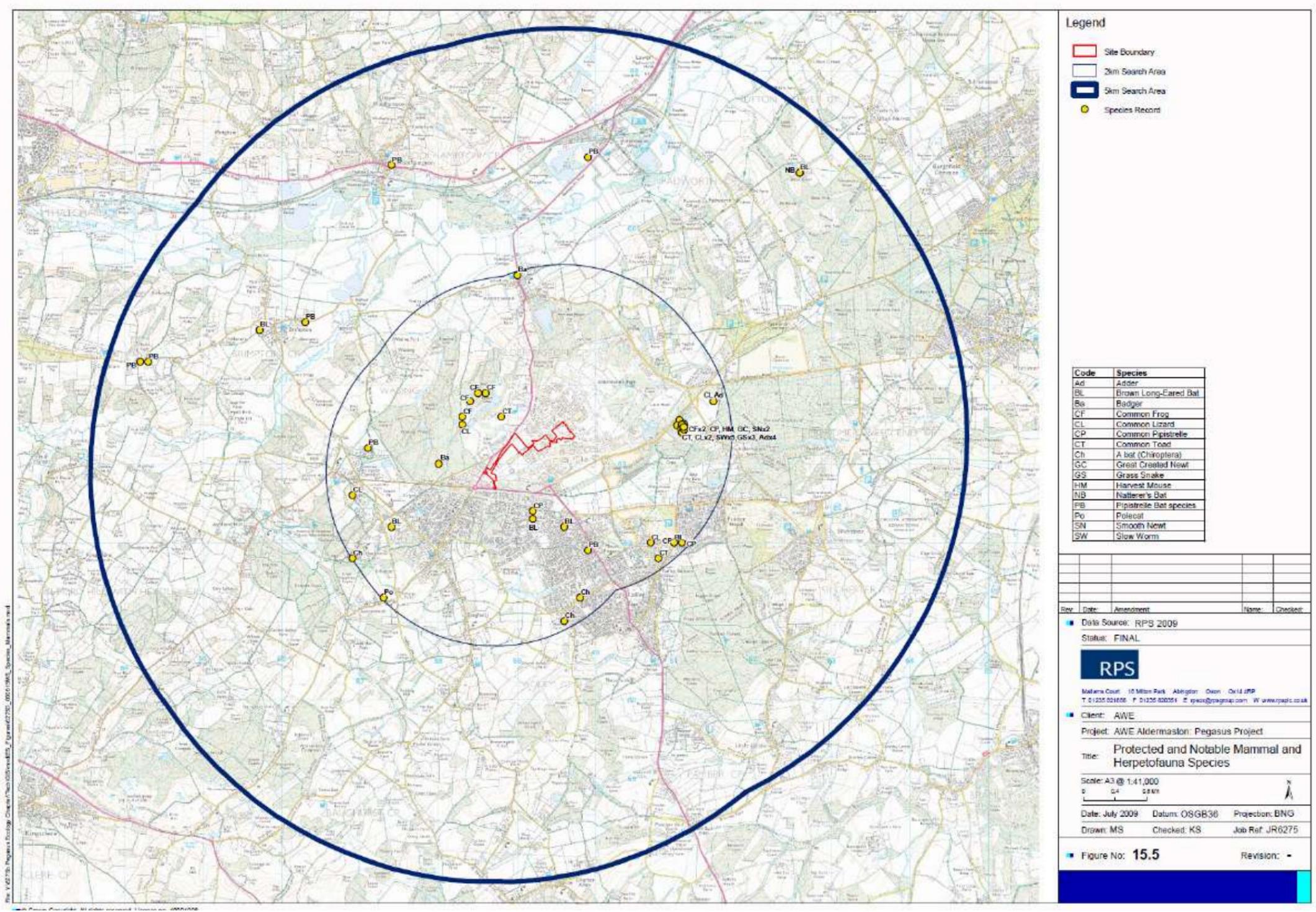
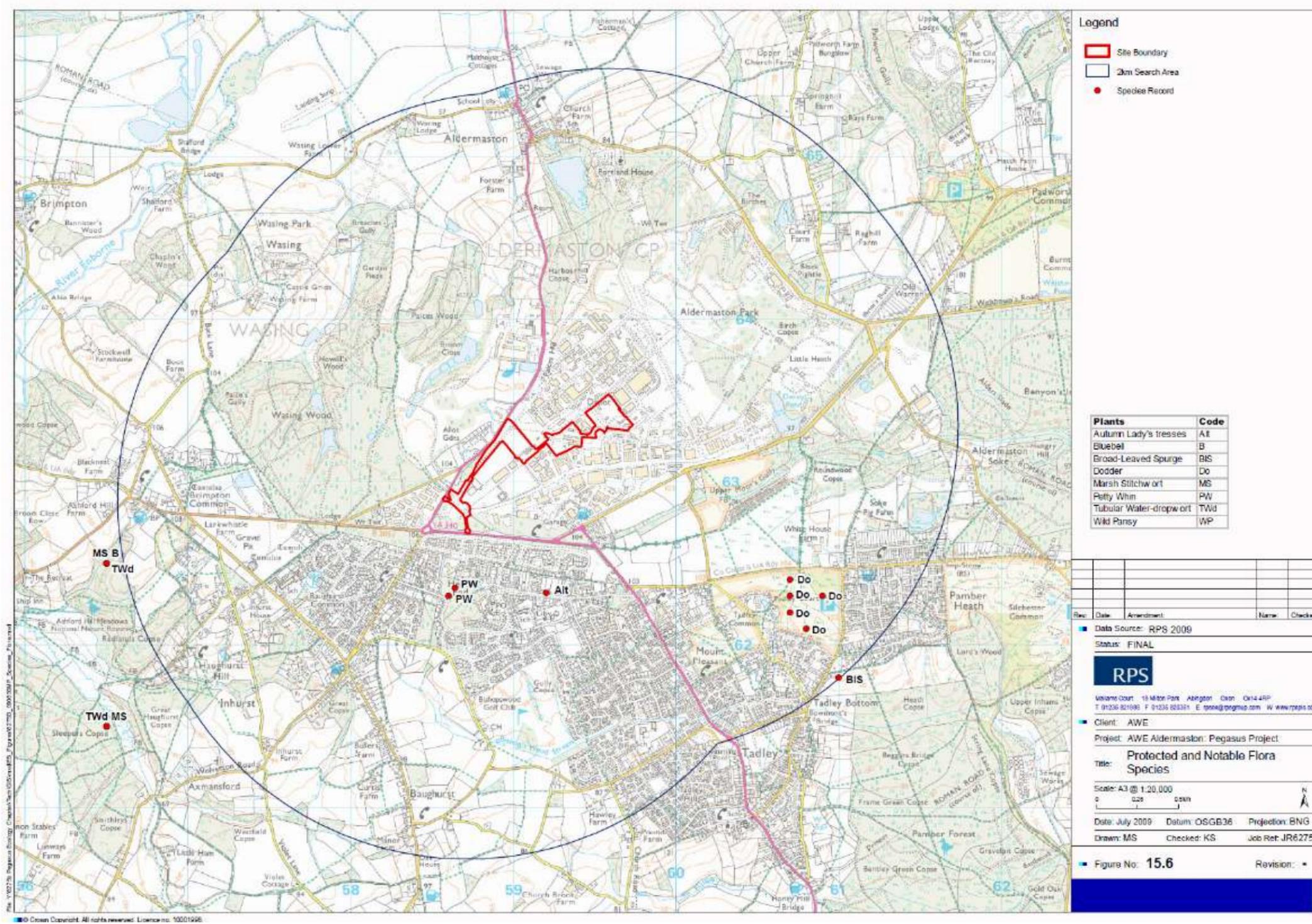


Figure 15-6: Protect and Notable Flora Species



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Amenity Grassland

Small sections of amenity grassland are present along the Application Site boundary. These areas of grassland have been intensively managed and regularly mown due to the close proximity to the security fencing on Site. Species are limited to those that can cope with the mowing regime and often include fescues, perennial rye-grass, meadow grasses and herb species such as daisy, plantains and dandelions.

These areas of amenity grassland appeared well managed and were close-cut at the time of the survey.

Amenity grassland is of limited ecological value but will be used by the birds recorded at the time of the survey for foraging.

Species Poor Semi-improved Grassland

There are two main margins of rough grassland within the Application Site; one along the access road leading up to the West End Car Park and one within the Primary Construction Area. Grasses present included perennial ryegrass, Yorkshire fog, annual meadow grass, cocks-foot, common bent and fescue with birds foot trefoil, dandelion, black medick, creeping cinquefoil, ribwort plantain, common mouse ear, meadow buttercup, creeping buttercup, common daisy, white clover, dove's-foot crane's-bill, bristly ox-tongue, cleavers, broad-leaved dock, curled leaf dock, forget-me-not, yarrow, common field-speedwell and occasional lichen species.

This grassland provides potential habitat for reptiles, invertebrates, foraging bats and cover for small mammals.

Hardstanding

Large areas of hardstanding exist within the Application Site, in the form of car parks, roads, footpaths and a storage building within the WECE.

The storage building is the only standing structure within the Application Site, during the walkover it was assessed for its potential for roosting bats. The material makeup of the building provided no suitable roosting opportunities for bats, i.e. flat roof, no soffit boards, intact brick work, etc.

No evidence of nesting birds was observed on or within the storage building during the time of the site walkover. House sparrows were observed perching on the building and swallows were recorded foraging across the construction lay down area north of the storage building (TN5 on Figures 15-7a and 15-7b).

These areas of hardstanding are of no ecological value.

Tall Ruderals

Ruderal weeds such as overgrown broadleaved dock and willowherb were present along the embankments of the species poor semi improved grassland and construction laydown areas.

The tall ruderal vegetation is of ecological value as it provides areas of inter-linkage around the AWE site, filling in gaps between woodland and scrub.

Ephemeral/short perennial

The Primary Construction Area is formed of short perennial/ephemeral habitat; this habitat consists of shallow stony soil with scattered plant species such as black medick, willowherb and dock; species typical of derelict urban sites. The bare ground is of ecological value for protected species such as black redstart and foraging for other species of birds.

Other Habitat

Areas of self seeded spoil piles are present within the Application Site (see TN6 and TN8 on Figures 15-7a and 15-7b). These mounds of semi improved grassland have formed from recent spoil piles that have become self seeded with grass and tall ruderals. These provide refuge and foraging areas for birds and small mammals.

Two existing construction laydown areas exist within the Application Site, one at the West Gate and one north of the WECE building (TN1 and TN5 on Figures 15-7a and 15-7b). These areas are active sites, with construction traffic using the storage facilities on Site.

Habitats beyond the Application Site

The Application Site is surrounded by the remainder of the AWE Aldermaston site, of which the majority is hardstanding, with some recreational areas and thick screen planting along the main AWE security boundary.

15.4.4 Potential for protected or otherwise notable species

Plants and Habitats

No habitats covered by Annex I of the European Habitats Directive were recorded from within the study area. Although bluebells were not identified during the site walkover, the woodland edge to the west of the WECE is likely to support them.

Bats

None of the semi mature to mature trees have bat roosting opportunities due to their well intact nature, i.e. no heavy ivy cladding, splits, loose bark or woodpecker holes etc. However, the grassed margins and established tree avenue along the West Gate to the West End Car Park provide suitable foraging and commuting habitat for bats.

The material makeup of the storage building provided no suitable roosting opportunities for bats, i.e. flat roof, no soffit boards, intact brick work, etc.

Badgers

Badgers are known to be within the AWE Aldermaston site but no signs were recorded within the Application Site at the time of the walkover inspection.

Birds

During the site walkover many common bird species were recorded with a full list provided at *Technical Appendix G 15.7*. The scrub and parkland trees within the Application Site provide suitable nesting habitat for birds. Many active nests from this summer were recorded within the trees on the Application Site at the time of the walkover. The semi-mature and mature trees on site were identified as providing suitable habitat for nesting common bird species and also provide, along with the grassland, an important food source for the species utilising the local environment.

Lapwings were recorded taking advantage of the ephemeral habitat on the WECE site in February 2009 during a project site meeting. Lapwings are red-listed species of high conservation concern and are also listed as a UK BAP Priority Species. Lapwings were confirmed not to be breeding at the Application Site during the Black redstart surveys in May to July 2009.

Black redstarts have previously been recorded off site, to the north of the Application Site. A full Black restart survey was undertaken for the Application Site in May to July 2009. No Black redstarts were directly observed or heard singing during any of the survey visits, indicating that this species is not currently present on the Application Site or in the vicinity of the Application Site.

Thirteen other species were recorded during the Black redstart survey visits, some of which were resident on or near the Application Site and some which were observed passing over the Application Site. Two species of conservation concern were recorded breeding on, or in the vicinity of the Application Site.

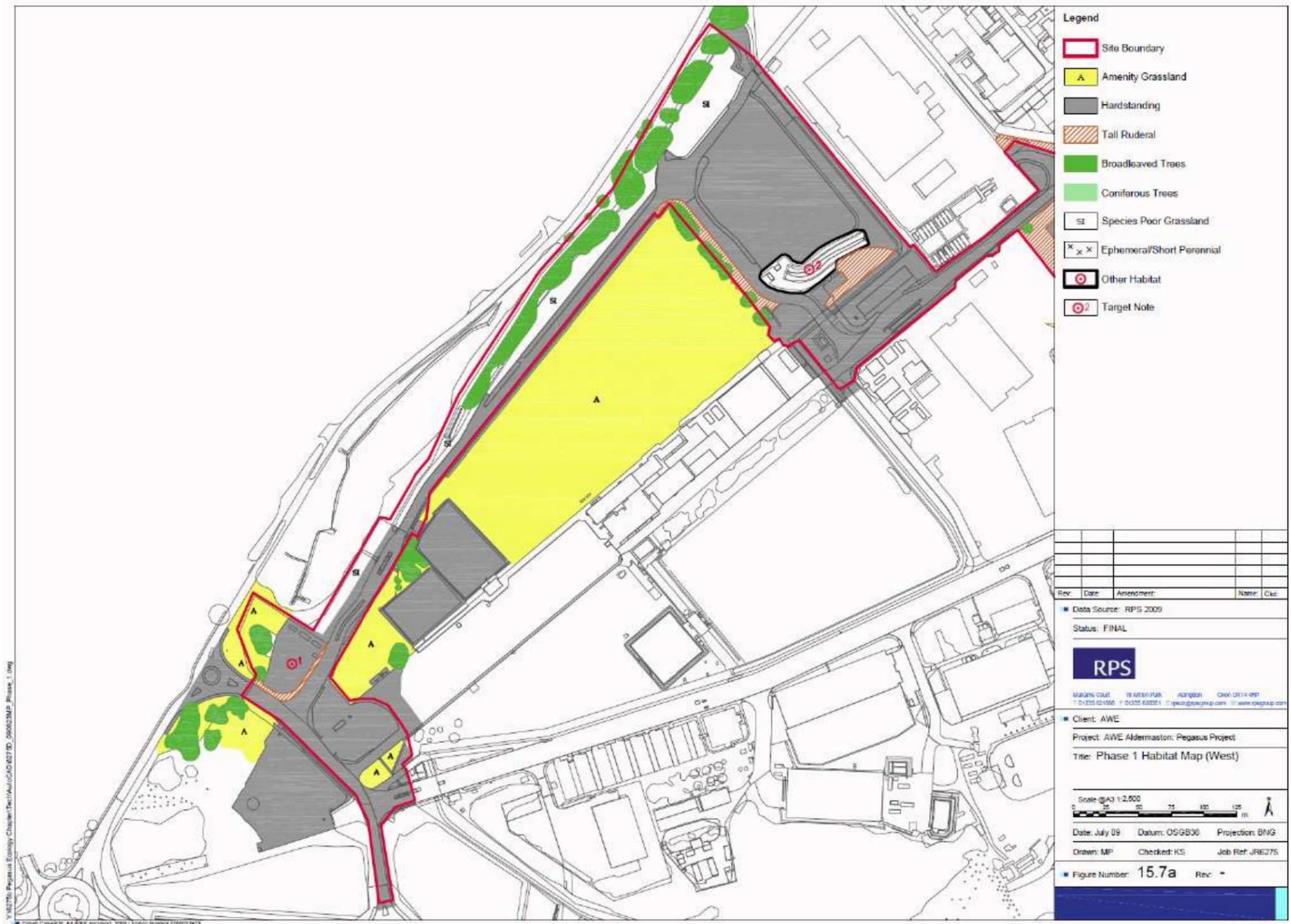
Starlings and song thrushes are red-listed species of high conservation concern. Both species are also listed as UK BAP Priority Species. Starlings were only recorded passing over the Application Site during the 2009 surveys although previously they have been recorded breeding in the adjacent buildings. It is likely that starlings are breeding in close proximity to the Application Site. Song thrushes were heard singing in vegetation within the AWE site, adjacent to the Application Site boundary in the south, especially along the edge of the A340 road. This species is not breeding on the Application Site but may occasionally forage within the boundaries. A full bird list for the surveys is provided in *Technical Appendix G 15.5* (RPS Black Redstart Survey, July 2009).

Herpetofauna

The areas of amenity grassland on the Application Site are deemed unsuitable for reptiles due to their regular mowing regime. However, the rough grassland margins along the WECE access road and adjacent car park do provide suitable basking and commuting habitat for reptiles.

No waterbodies were recorded on the Application site during the walkover survey. A medium population of great crested newts is known to be present within the AWE North Ponds which are situated over 500m north of the Application Site.

Figure 15-7a: Phase 1 Habitat Map (West)



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Invertebrates

During the walkover no invertebrates were recorded within the Application Site.

Invasive weeds

No invasive weeds (Japanese knotweed, Himalayan balsam or Giant hogweed) were recorded within the Application Site boundary at the time of the walkover survey.

Other Species

At the time of the walkover, no evidence of any other protected species was recorded.

However a rabbit warren was recorded on the Application Site during the walkover within the WECE (refer to Figures 15-7a and 15-7b, TN4). Narrow mammal runs (probably foxes) were also recorded along the dense tree avenue and grassland along the WECE access road.

It should be noted that wild rabbits and foxes are protected under The Wild Mammals (Protection) Act 1996. Under this Act it is an offence to inflict unnecessary suffering.

15.4.5 Valued Ecological Receptors (VER)

The VERs comprise valued sites, habitats and species which could be affected by the project are identified in Table 15-4 below.

The methodology for assigning values to sites, habitats and species is described in section 15.3.2. None of the ecological features identified were considered to be of importance at the County, Regional, National or International level. None of the habitats form part of sites designated as of County importance, and none of the species recorded were at levels approaching 1% of the County populations of those species.

As explained in section 15.3.2, evaluation below County level is based on judgement. In this case, the VERs identified below have been assessed as being of District value on the basis that they are the subject of Biodiversity Action Plans an/or are subject to specific legal protection.

Table 15-4: Summary of Valued Ecological Receptors (VERs)

Valued Ecological Receptor (VER)	Status	Geographical Value
<i>Habitats</i>		
Grassland (VER1)	LBBAP Habitat Action Plan	District
Woodland (VER2)	LBBAP & LHBAP Habitat Action Plan	District

Valued Ecological Receptor (VER)	Status	Geographical Value
<i>Species</i>		
Bats (VER3)	HREG, WCA5, some UK BAP	District
Badgers (VER4)	Protection of Badgers Act 1992	District
Herpetofauna (VER5)	WCA5, UK BAP, some LHBAP	District
Breeding birds (song thrush, starling, blackbird, buzzard, carrion crow, feral pigeon, jackdaw, little owl, magpie, pied wagtail, robin, woodpigeon, wren, swallow, blue tit, house sparrow) & overwintering birds (lapwings) (VER6)	Annex 1, WCA1, some BCC Red, some BCC Amber, some UK BAP	District

Key:

European Protected:

Annex 1 – Listed in Annex 1 of the EC Birds Directive.

HREG – Listed Schedule 2 of the Habitat Regulations 1994.

UK Protected:

WCA1 – Listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).

WCA5 – Listed in Schedule 2 of the Wildlife and Countryside Act 1981 (as amended).

CROW – Countryside and Rights of Way Act 2000.

Other designations:

UK BAP – Listed as a Priority Species in the UK Biodiversity Action Plan.

LBBAP – Listed in the Berkshire Biodiversity Action Plan.

LHBAP – Listed in the Hampshire Biodiversity Action Plan.

BCC Red – Listed as “red” on the Birds of Conservation Concern List.

BCC Amber – Listed as “amber” on the Birds of Conservation Concern List.

15.5 Potential Impacts and Mitigation Measures

This section addresses the potential ecological impacts associated with the Proposed Development and the proposed mitigation measures. Table 15-5 details the impacts relating to each of the ecological receptors identified within the Application Site.

The impacts of runoff from the Proposed Development has been considered in *Chapter 8: Waste Resources*.

15.5.1 Construction Impacts

Potential construction impacts of the Proposed Development on the identified VERs could arise from:

- Contamination during construction (including dust);
- Direct loss of wildlife habitats through land-take;
- Severance and/or fragmentation where a scheme may create a barrier and divide existing habitats or affect the continuity of wildlife corridors such as hedgerows;
- Lighting can adversely affect invertebrates and disorientate birds and change bat behaviour; and
- Disturbance of habitats and species (physical or related to increased human activity and/or noise).

Construction works can result in disturbance of sensitive species. Although the works are temporary, the potential impacts can be significant.

Habitats and Species

VER1 & VER2: Grassland & Woodland

The Proposed Development will involve the construction of a replacement facility with associated office accommodation. The redevelopment will involve the removal of derelict open ground and some grassland however the individual trees and woodland boundaries will not be affected by the proposals. The woodland edges and tree avenues on the Application Site are to be retained within the development and will remain unlit, as these features are of ecological value and will add maturity to the Proposed Development’s planting scheme.

The whole of the AWE Aldermaston site is currently managed with the grassland and other habitat cut back on a regular basis due to security requirements. Therefore the habitat species diversity within the Application Site is limited.

Best practice guidelines will be adhered to during construction, including material storage and handling, siting of construction plant and restricted vehicular movements away from the woodland boundaries, retained grassland verges and tree root systems, plus covering of construction materials and operational control.

All works on the Application Site near trees to be retained will be carried out in-line with British Standard BS 5837: 2005 (Ref. 15-22) and managed during the construction period to ensure they remain safe, i.e. tree protective fencing to BS 5837: 2005 specifications. This will ensure that incidental construction impacts such as machine tracking and laydown of spoil or materials are avoided. The significance of avoiding impacts on tree protective fencing will be included within a toolbox talk to all contractors, prior to commencing work on the Application Site.

The magnitude of the construction impacts on grassland and woodland habitats within the Application Site are assessed as negligible. Therefore the significance of any impact would also be negligible.

VER3: Bats

No buildings or structures exist on the Application Site have the potential to support roosting bats. Equally no bat roosts have been identified within any of the trees on the Application Site.

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Potential foraging and commuting habitats are present within the Application Site for bats, i.e. species poor grassland and the mature tree avenue along the WECE access road and the adjacent West End Car Park. These areas of potential habitats will not be affected directly or indirectly by the development proposals due to their distance from the proposed activities.

All construction works will be undertaken during the hours of 7am-7pm on weekdays and 7am-4pm on Saturdays i.e. predominantly daylight hours throughout much of year, except in winter when bats are hibernating. As such, no impact is envisaged on these nocturnal animals. Therefore, both the magnitude and significance of the construction impacts on these species is assessed as negligible.

VER4: Badgers

No badger setts have been recorded within the Application Site or 10 to 30m from the development boundary. A Natural England licence for disturbance is not required for the construction phase.

However, badgers have been recorded foraging and commuting within the wider AWE Aldermaston site. Disturbance during the construction phase will be minimised by the following measures:

- Construction to be limited to the hours outlined above; and
- Care will be taken when constructing deep vertical sided trenches (>1.5m), as these could act as 'pitfall traps'. Therefore, daily inspection of such trenches will be carried out. Where possible deep trenches will be covered at night and points of exit will be installed by laying a plank from the bottom of the trench to ground level.

As badgers frequently move setts, a badger resurvey of the species poor grassland and the mature tree avenue along the WECE access road and the adjacent West End Car Park will be undertaken before site clearance or construction commences.

Therefore, the construction impact on badgers is assessed as short-term and of a minor negative magnitude. In terms of significance, a slight negative impact is therefore expected.

VER5: Herpetofauna

Reptiles are known to be present within the wider AWE Aldermaston site. Reptiles could use species poor grassland and the mature tree avenue along the WECE access road and the adjacent West End Car Park during the summer months and for hibernation through the winter. However, this area is to be fully retained as part of the landscape strategy and will not be directly or indirectly affected by the development proposals.

Great crested newts are known to be present over 500m from the Application Site within the AWE North Ponds. As with the reptiles, all suitable terrestrial habitats along the WECE access road are to be retained as part of the development.

Newt fencing will be installed around the temporary construction SuDS ponds, to prevent colonization of these temporary ponds during the construction phase.

Provided these measures are followed the construction impact on these species is assessed as negligible. Therefore the significance of any impact would also be negligible.

VER6: Breeding and Overwintering Birds

The grassland, ephemeral habitat and trees on the Application Site support nesting birds and provide shelter and connectivity for small mammals. Common species of birds have been recorded nesting in the trees and woodland edges on the Application Site. Rarer birds have also been using the habitats on and immediately off the Application Site for feeding, breeding and overwintering, including song thrush, house sparrow, starling and lapwings. All of the woodland edges and the majority of the grassland will be retained as part of the development proposals but some ephemeral habitat will be lost during the main construction works.

Wintering lapwings have taken advantage of the WECE and have been using this area for foraging in the winter months. The short ephemeral habitat on the Application Site creates good foraging habitat for this species and other bird species recorded on site to date.

In order to avoid disturbance of nesting birds, vegetation clearance will be undertaken outside of the bird-nesting season where practicable (mid-February to mid-September inclusive). Twelve tree bird boxes will be positioned around the site as compensation for the clearance of suitable bird breeding habitat during the site establishment phase.

The construction laydown site will be left in-situ for a number of years as this area will be utilised for other AWE redevelopment projects in the future. The WECE is an active construction enclave; this has not deterred the lapwings from using the grounds during the 2008/2009 winter period.

Black redstarts have historically been recorded at AWE Aldermaston. Natural England has advised that building work should not commence during the breeding bird season (*Chapter 2: EA Methodology*). No black redstarts were directly observed or heard singing during any of the survey visits, indicating that this species is not currently present on the Application Site or in the vicinity of the Application Site. However, as a precaution, vegetation clearance will be undertaken outside of the bird-nesting season where practicable (mid-February to mid-September inclusive).

The construction phase may increase the Application Site's suitability for species such as Black redstarts. Aggregate piles will be covered over with plastic sheeting to discourage this species from using these areas as nesting sites.

The increase in people, traffic and noise within the vicinity of the Application Site during the construction period may result in increased disturbance of birds where they utilise nearby features. However, this is likely to be of little significance given that the works will take place within the active AWE Aldermaston site.

The construction impact on these species is assessed as short-term and of a minor negative magnitude. In terms of significance, a slight negative impact is therefore expected.

15.5.2 Operational Impacts

Potential impacts of the Proposed Development on the identified VERs could arise from:

- Direct loss of wildlife habitats through land-take;
- Severance and/or fragmentation where a scheme may create a barrier and divide existing habitats or affect the continuity of wildlife corridors such as hedgerows;
- Lighting can adversely affect invertebrates and disorientate birds and change bat behaviour; and
- Disturbance of habitats and species (physical or related to increased human activity and/or noise).

Habitats and Species

VER1 & VER2: Grassland & Woodland

The construction of the Proposed Development does involve some loss of grassland with limited species diversity. However, the landscape proposals for the Proposed Development aim to mitigate for this habitat loss through replacement with wildflower seed mixes.

There will be two types of grassland within the redevelopment, amenity grassland for easy of maintenance around the Proposed Facility and areas of species rich meadow grassland for wildlife enhancement. Areas of new grassland planting will be monitored following construction and any bare earth patches should be re-seeded as soon as possible.

The landscape proposals for the facility will use native planting to provide high quality landscaping and to promote nature conservation by attracting local wildlife. Native planting will also tie in with the existing vegetation on the Application Site. 90% of all new planting on the Application Site will be native and beneficial to wildlife. The full landscape proposals can be seen at *Chapter 13: Landscape and Visual*.

The operational impacts of the Proposed Development on grasslands and woodlands within the Application Site is considered to be long-term and of a minor positive magnitude. Therefore the significance of this impact is expected to be slight positive.

VER3: Bats

The site currently experiences moderate levels of background lighting at night within the Primary Construction Area due to security requirements and lower levels of lighting along the Construction Support Area (including the WECE). The

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species most likely to be affected by any changes in lighting include birds, bats, moths and insects, i.e. species that are nocturnal.

No bats have been recorded utilising the Application Site. The Proposed Facility will be lit in areas to meet security requirements. The lighting along the WECE access road and associated woodland and grassland will remain unchanged. Therefore, the operational impacts of the Proposed Development to these species, in terms of magnitude and significance is considered to be negligible.

VER4: Badgers

The following badger mitigation measures have been incorporated into the development proposals for the operational phase of the Proposed Facility.

- An assemblage of fruit- and nut-bearing shrubs (mainly native and local provenance stock) will be planted in appropriate parts of the Application Site to which the badgers will still have access, to help mitigate the loss of foraging habitat. Species and cultivars will be selected which fruit at slightly different times of the year, in order that the badgers are supplied with food for the longest period possible;
- Links will be retained along the WECE access road woodland with the provision of new grassland planting, thus allowing the badgers to move around the Site and have access to off Site habitats; and
- Traffic speed restrictions and traffic calming measures exist throughout the wider AWE Aldermaston site which already allows badgers to move safely across the site. The speed restriction of 10mph will also be applicable to the Application Site.

The operational impacts of the Proposed Development on badgers, in terms of both magnitude and significance, are assessed as being negligible.

VER5: Herpetofauna

No species of herpetofauna have been recorded on the Application Site but they are known to be present within the wider AWE Aldermaston site. All of the woodland edges and the majority of the grassland on the Application Site will be retained as part of the redevelopment proposals. Any grassland that will be lost to the development will be replaced with wildflower seed mixes.

There will be two types of grassland within the redevelopment, amenity grassland for easy of maintenance around the Proposed Facility, and areas of species rich meadow grassland for wildlife enhancement. The amenity grassland will need to be heavily maintained to keep it fit for purpose. However, areas of meadow grassland to be incorporated into the landscape strategy will undergo a reduced mowing regime to allow the grassland to flower (twice early – early spring and autumn), especially around the proposed pond to increase the Application Sites value to invertebrates, small mammals and birds for shelter and foraging. This management would help maintain and develop the diversity of the grassland.

The operational impacts of the Proposed Development on these species are assessed as being of minor positive magnitude and therefore of slight positive significance.

VER6: Breeding and Overwintering Birds

The Application Site's woodland, individual stand alone trees, ephemeral habitat and grassed margins are used by a number of bird species. The retention of the woodland and trees on the Application Site, creation of wildflower grassland, along with the proposed landscape strategy will strengthen existing nesting habitats, provide additional food sources and provide new green corridors across the Application Site and wider AWE site for foraging and nesting birds.

The operational impacts of the development proposals on these species are assessed as being of minor positive magnitude and therefore of slight positive significance.

15.6 Ecological Enhancement Measures

AWE plc is seeking to enhance habitats throughout the AWE Aldermaston site in relation to the Proposed Development. Both mitigation and enhancement measures have been provided for the protected species that have been recorded on the Application Site, both on and off site (but still within the AWE Aldermaston site). These measures will create habitats, provide connectivity, and safeguard the longevity of the existing wildlife on site but also attract other species to the Application Site from the surrounding area. AWE has developed a nature conservation management plan which covers the first five years after project completion. Ecological enhancements included as part of the plan are as follows:

- A small pond is to be constructed as part of the development proposals. The pond will be 'wildlife friendly' designed and planted with native flora species to provide additional habitat on-site for birds, bats, invertebrates, amphibians and reptiles.
- Five hibernaculas will be created in suitable locations that will benefit herpetofauna. These will be located within the wooded vegetation around the new wildlife pond of the AWE site.
- Ten bat boxes will be attached to the suitable semi-mature/mature trees, in unlit locations within the Application Site.
- Native planting will also tie in with the existing vegetation on the Application Site and attract seed eating birds, foraging bats and butterflies. Night-scented flowers attract night flying insects, which will provide an important food source for bats.
- Two sparrow terraces (will provide homes for six pairs of sparrow families) will be erected on the Proposed Facility by the office accommodation.
- The incorporation of a sedum roof will also provided as part of the redevelopment proposals as black redstarts were known to forage within the area up until 2006.

All ecological enhancement measures are part of the Pegasus project redevelopment can be seen on Figures 15.8a and 15.8b.

15.7 Residual Impacts

Table 15-5 summarises the likely impacts of the Proposed Development during construction and operation. No negative impacts on any of the VERs are expected. Indeed the inclusion of a number of ecological enhancement measures means that a number of ecological receptors will benefit from the Proposed Development.

15.8 Cumulative Impacts

A number of other developments are planned within the wider AWE Aldermaston site the 2km study area and are listed in *Chapter 2: EA Methodology* and *Chapter 17: Cumulative Impacts*.

An Illustrated Framework Plan (Ref. 15-23) has been produced which identifies areas of the AWE site where development is proposed, and other areas where semi-natural habitats would be retained or created during the period 2005 and 2015. The AWE Framework Plan incorporates a large proportion of the features of biodiversity value that have been identified.

An Ecological Constraints Plan was produced for AWE by Atkins in 2006 (Ref. 15-24) for the AWE site which identifies habitats and species of biodiversity value. The plan identifies actions required to maintain and where possible enhance features of value. The public information leaflet 'Sites Development Strategy Update 2005' also stated that: "*natural habitats will remain protected as havens for wildlife*".

Providing an appropriate level of ecological assessment is carried out for future projects at AWE, and the Biodiversity Strategy is implemented, it is anticipated that the cumulative impacts of proposed developments across the AWE site would be of negligible significance in the medium to long-term.

Figure 15-8a: Ecological Enhancement Measures Part 1

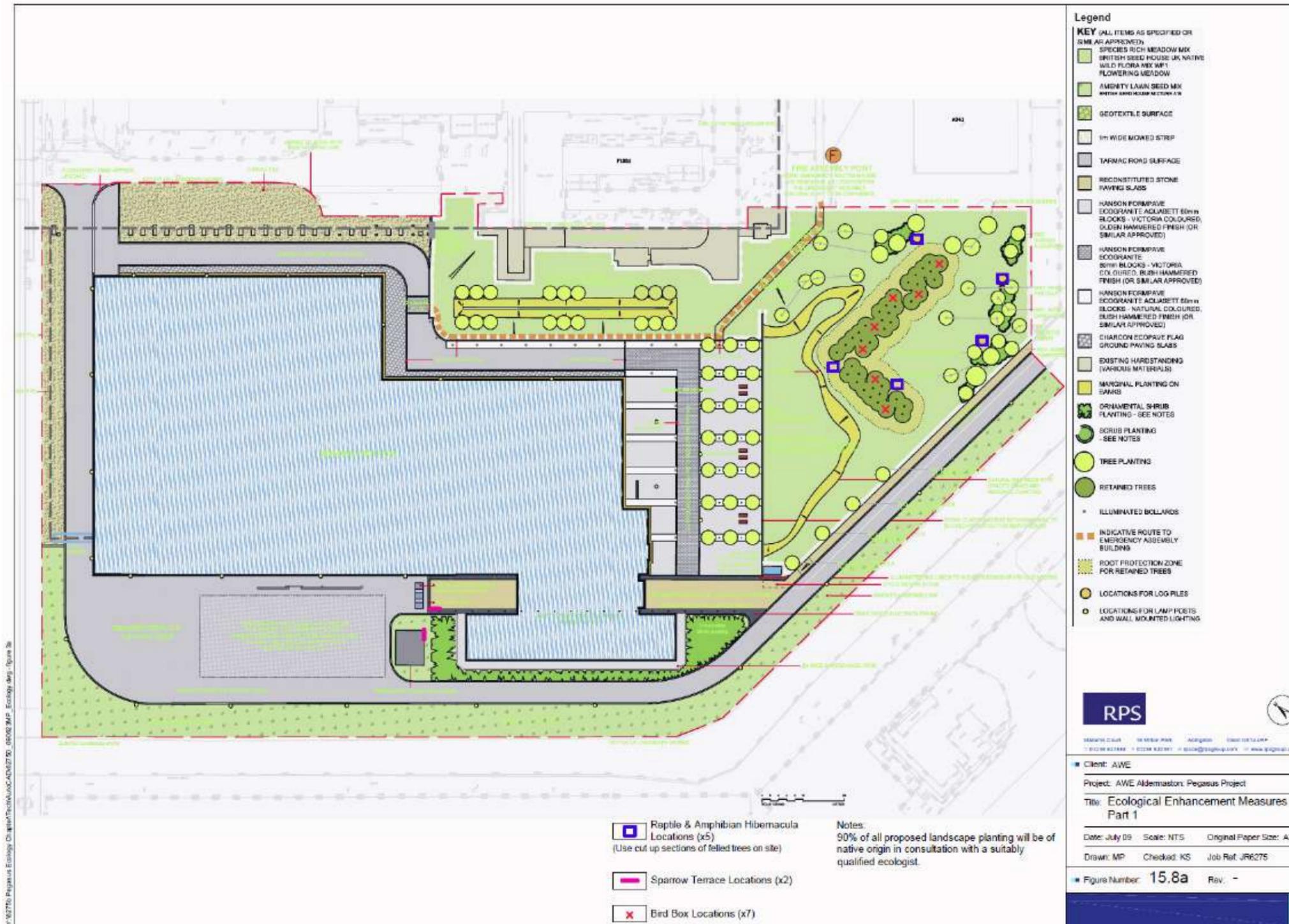
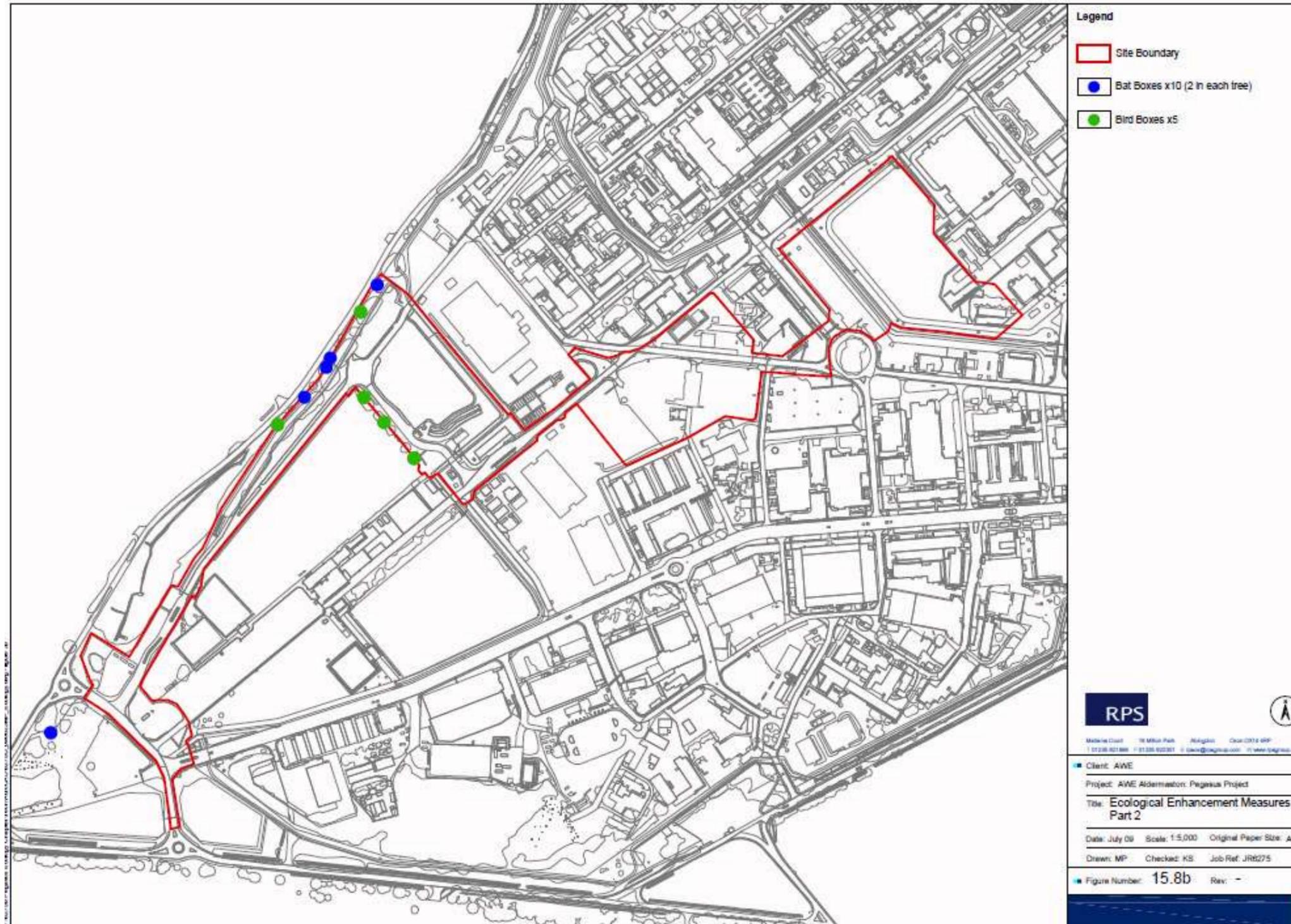


Figure 15-8b: Ecological Enhancement Measures Part 2



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Table 15-5: Summary of Residual Impacts

Feature/VER	Value	Potential Impact Characteristics	Mitigation Measures	Enhancement Measures	Residual Impact Significance
HABITATS					
Grassland (VER1)	District	Some loss of grassland but of low ecological value. Negligible impact.	Replacement grassland will be created through the landscaping proposals using wildflower seed mixes. Areas of new grassland planting will be monitored following construction and any bare earth patches should be re-seeded as soon as possible.	Areas of species rich meadow grassland for wildlife enhancement will be created in addition to the replacement amenity grassland.	Slight beneficial
Woodland (VER2)	District	Risk of damage to the root systems and canopies of retained trees during construction through movement of plant. Negligible impact.	The establishment of exclusion zones around retained trees accordance with British Standard 5837:2005 to safeguard remaining trees.	N/A	Slight beneficial
SPECIES					
Bats (VER3)	District	Temporary, reversible disturbance to foraging bats through lighting and noise. Negligible impact.	Limited use of artificial lighting during construction and operation, where possible. The implementation of directional lighting and light caps during construction and operation.	Ten bat boxes will be attached to the suitable semi-mature/mature trees, in unlit locations within the Application Site.	Slight beneficial
Badgers (VER4)	District	Temporary, reversible disturbance to foraging badgers. Minor negative magnitude.	Disturbance during the construction phase will be minimised by limiting working hours to 7am-7pm on weekdays and 7am-4pm on Saturdays, daily inspections of any trenches and ensuring that access out of the trenches is available. The species poor grassland and the mature tree avenue along the WECE access road will be resurveyed before any Site clearance or construction commences. Fruit- and nut-bearing shrubs (mainly native and local provenance stock) will be planted in appropriate parts of the Application Site to which the badgers will still have access, to help mitigate the loss of foraging habitat. Species and cultivars will be selected which fruit at slightly different times of the year, in order that the badgers are supplied with food for the longest period possible; Links will be retained along the WECE access road woodland with the provision of new grassland planting, thus allowing the badgers to move around the Site and have access to off Site habitats; and The speed restriction of 10mph will also be applicable to the Proposed Development site.	N/A	Negligible
Herpetofauna (VER5)	District	Temporary, reversible disturbance to reptiles and Great crested newts. Negligible impact.	Areas of meadow grassland will undergo a reduced mowing regime to allow the grassland to flower (twice early – early spring and autumn), especially around the proposed pond to increase the site's value to invertebrates for foraging. Newt fencing will be installed around the temporary construction SuDS ponds, to prevent colonisation of these temporary ponds during the construction phase.	Five hibernacula's will be created in suitable locations that will benefit herpetofauna, namely within the wooded vegetation around the new wildlife pond of the AWE site.	Slight beneficial
Breeding birds and overwintering birds (VER6)	District	Disturbance to nesting birds through lighting and noise. Minor negative magnitude.	The creation of wildflower grassland, along with the proposed landscape strategy will strengthen existing nesting habitats, provide additional food sources and provide new green corridors, plus linkage on and off site for foraging and nesting birds. In order to avoid disturbance of nesting birds, vegetation clearance will be undertaken outside of the bird-nesting season where practicable (mid February to mid September inclusive).	Two sparrow terraces (will provide homes for 6 pairs of sparrow families) will be erected on the Proposed Facility by the office accommodation. The incorporation of a sedum roof will also provided as part of the redevelopment proposals as Black redstarts were known to forage within the area up until 2006.	Slight beneficial

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15.9 References

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- Ref. 15-21 Joint Nature Conservation Committee (1990). *Handbook for Phase1 Habitat Survey: A Technique for Environmental Audit*
- Ref. 15-22 British Standard 5837:2005 - *Trees in relation to construction*.
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- Ref. 15-24 Atkins Consultants Ltd 'Ecological Assessment of proposed Pegasus Project at AWE Aldermaston' (November 2006).