

9.0 Biodiversity

9.1 Introduction

Ecological Planning & Research (EPR) was appointed to undertake the assessment of the potential for effects on ecology, including in relation to habitats, protected and otherwise notable species, and designated nature conservation sites. The assessment is supported by a series of supplementary reports as listed in the table below.

Figures	Title
Figure 9.1	Statutorily Designated Nature Conservation Sites
Figure 9.2	Sites Protected by Planning Policy
Figure 9.3	Habitats and Vegetation
Appendices	Title
Appendix 9.1	Ecological Baseline
Appendix 9.2	Information for Habitats Regulations Assessment
Appendix 9.3	Biodiversity Net Gain Report

9.2 Scoping, Consultation and Overview of Potential Effects

9.2.1 Consultation

The proposal and this assessment are informed by a series of workshops with Havant Borough Council officers in late 2024 and a walkover conducted in January 2025.

9.2.2 Scope

This Chapter provides an assessment of activities associated with the proposed development that are likely to generate biophysical changes which may lead to significant effects (either positive or negative) upon 'Important Ecological Features' (IEFs) within the respectively applicable Zone of Influence - particularly including designated sites, important habitats, and protected or otherwise notable assemblages of fauna.

An assessment of potential effects on internationally designated nature conservation sites (pursuant to the requirements of Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended; the "Habitats Regulations") is separately provided as *Appendix 9.2*. The statutory requirement for the achievement of measurable biodiversity net gain (BNG) is separately addressed in *Appendix 9.3*.

9.3 Assessment Methodology

9.3.1 Ecological Impact Assessment

The assessment has been carried out in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Impact Assessment (EclA) in the United Kingdom and Ireland (CIEEM, 2024). See *Appendix 9.1* for further details.

In summary, EPR takes the following step-wise approach to EclA.

- Prediction of the activities associated with a proposed scheme that are likely to generate biophysical changes which may lead to significant effects (either positive or negative) upon Important Ecological Features (IEFs);
- Identification of the likely Zone of Influence (ZOI) of those activities;
- Scoping to select the ecological features (habitats, species, ecosystems and their functions/processes) that are likely to fall within the predicted ZOIs and be affected by the activities;
- Evaluation of IEFs likely to be affected – both negatively and positively;
- Identification of likely impacts (positive and negative) on IEFs, together with an assessment of the geographic level at which effects are likely to be significant;
- Application of the mitigation hierarchy - refinement of the proposed scheme to incorporate impact avoidance and/or mitigation measures for negative effects on IEFs, and enhancements in order to deliver net gains;
- Assessment of the significance of residual effects and identification of any policy drivers for additional mitigation or compensation in the event of residual significant negative effects; and
- Advice on conformance with policy and legislation.

As discussed below, this approach has been modified in certain minor respects for consistency with the broader EIA.

Likely Biophysical Changes and Zone of Influence

The Zone of Influence (ZOI) of a proposed development is defined by the EclA Guidelines as “... the area(s) over which ecological features may be affected by the biophysical changes caused by the proposed project and associated activities”.

The activities associated with the Proposed Development which are likely to lead to biophysical changes, and could accordingly give rise to ecological impacts, are set out in *Table 9.1* below, which is drawn from Box 9 of the EclA Guidelines (CIEEM, 2024).

Table 9.1 – Activities and biophysical changes associated with the proposed development which may give rise to ecological impacts, and associated zones of influence		
Activity	Potential Impact	Zone of Influence
Construction Phase		
Access and travel on / off site	Noise / visual / lighting disturbance of vulnerable species	Site and immediate surrounding area
Assembly and storage areas for machines and materials; construction compounds	Loss and fragmentation of habitats Noise / visual / lighting disturbance to vulnerable species	Site and immediate surrounding area
Vegetation clearance, ground excavation and structural works, demolition and alteration operations	Loss and fragmentation of habitats Damage to vulnerable habitats Direct harm to vulnerable species Noise / visual /vibration/ lighting disturbance to vulnerable species	Largely restricted to site and immediate surrounding area although a larger Zoi may apply to wide-ranging species groups such as bats

	Change to surface and ground water flows Dust deposition	
Lighting of work area	Disturbance to vulnerable species	Site and immediate surrounding area
Drainage	Change of surface water/groundwater flows Change of water quality in surface water/groundwater Change in habitats fed by surface water/groundwater flows	Site and immediate surrounding area, functionally linked watercourses
Occupation Phase		
Drainage	Hydrological changes to existing habitats within and beyond the site (drying, flooding, levels of pollution)	Site and immediate surroundings; functionally linked watercourses
Access and travel on / off site	Noise / visual / lighting disturbance to vulnerable species Changes in air quality	Site and immediate surrounding area Up to 200m from roads affected by traffic growth
Occupation of new houses: urban effects	Noise / visual / lighting disturbance to vulnerable species Loss and fragmentation of habitats by trampling Increased risk of cat predation Degradation and pollution of vulnerable habitats through urban effects (such as fly tipping, introduction of non-native species, arson)	Site and immediate surrounding area, most prevalent within 400m
Recreation	Fragmentation of habitats by trampling Noise / visual disturbance to vulnerable species by members of the public and/or dogs	Site and surrounding area out to c10km

Determination of Importance

Ecological 'importance' is determined with reference to legal protection (the level of designation for sites or biodiversity-based protection for species and habitats) and biodiversity value, including rarity, scarcity, function within the ecosystem, and population trends. The value of a feature is assigned by CIEEM to seven levels, from 'international' to 'local'. Valuations in accordance with the geographic frame of reference are provided in *Appendix 9.1*. *Table 9.2* relates the respective geographic importance levels to those applied throughout this ES.

Table 9.2 - Relation of EclA to ES Importance Valuations	
CIEEM EclA	This ES
International	High
National	High
Regional	High
County	Medium
District	Medium
Local	Low
Within ZOI only	Low to Negligible

Characterisation of Impacts

Impacts can be characterised according to their magnitude, duration (whether the length of the effect is short, medium or long term), reversibility (either permanent or temporary), and whether they are beneficial or adverse, and direct or indirect.

Construction-phase effects are taken as those for which the source begins and ends during the construction stage prior to the proposed development becoming occupied, including the permanent change in land use. The estimated duration of construction is a period of ten years from 2028. Temporary effects occurring over the full duration of this period are categorised as 'medium term', whereas those occurring over a longer or shorter period are respectively categorised as 'long term' or 'short term'.

Occupation-phase effects include those that start once the proposed development is built and occupied. The duration of the occupation phase is taken to be a period of at least 100 years, or 'in perpetuity'.

Significance of Effects

For the purposes of this assessment, an effect is considered significant if it should be given weight in judging whether to permit the proposed development or whether, if permission is given, it is important enough to warrant conditions, restrictions or further requirements such as monitoring.

In EclA, significant effects are qualified with reference to an appropriate geographic scale. *Table 9.3* relates this geographic scale to the descriptors used throughout this ES.

Table 9.3 - Relation of EclA to ES Significance Valuations	
CIEEM	This ES
International	Substantial
National	Substantial
Regional	Substantial to Moderate
County	Moderate
District	Moderate
Local	Minor
Not significant	Negligible

9.3.2 Data Collection

This assessment has been informed by a comprehensive desktop study and fieldwork programme, the key elements of which are itemised in *Table 9.4* below, with methodological details provided in *Appendix 9.1*.

Table 9.4 - Overview of Survey Programme	
Type	Timeframe
PEA & UK Habitat Classification surveys	December 2022 – January 2023
Detailed habitat & botanical surveys	April – July 2023
Amphibian (GCN eDNA) survey	June 2023
Badger survey	November – December 2023
Bat building inspection	April 2023
Bat building hibernation survey	January – February 2023
Bat building emergence survey	June – August 2023
Bat ground-level tree inspection	April 2023
Bat fixed point activity & tree emergence survey	August – September 2023
Bat activity transects & automated survey	April – October 2023
Bat trapping survey	May – August 2023
Breeding bird survey	April – July 2023
Wintering bird survey	November 2022 – March 2023 November 2025 – February 2026
Dormouse nest-tube survey	April – November 2023
Invertebrate scoping & sampling survey	June 2023
Reptile refugia survey	April – September 2023
Water vole survey	June & September 2023

9.4 Baseline Conditions

9.4.1 Designated Sites

Figures 9.1 and 9.2 respectively indicate the location of statutorily designated sites within 5km of the application site and non-statutory sites within 2km (refer to *Appendix 9.1* for information on the latter).

Table 9.5 lists the internationally and nationally designated nature conservation sites within 5km of the site.

Table 9.5 - Internationally and Nationally Designated Sites within 5km		
Designation	Distance	Summary Description
Solent Maritime Special Area of Conservation (SAC)	1.2km (south)	Designated for Annex 1 habitats: estuaries; <i>Spartina</i> swards; Atlantic salt meadows. Other Annex 1 habitats present as qualifying features: sandbanks which are slightly covered by sea water all the time; mudflats and sandflats not covered by seawater at low tide; coastal lagoons; annual vegetation of drift lines; perennial vegetation of stony banks; <i>salicornia</i> and other annuals colonising mud and sand; shifting dunes along the shoreline with <i>Ammophila arenaria</i> . Annex II species present as a qualifying feature: Desmoulin's whorl snail.
Chichester & Langstone Harbours Special Protection Area (SPA)	1.2km (south)	Designated for Annex I species: dark-bellied brent goose, common shelduck, Eurasian wigeon, northern pintail, northern shoveler, red-breasted merganser, ringed plover, grey plover, sanderling, dunlin, bar-tailed godwit, Eurasian curlew, common redshank, ruddy turnstone, sandwich tern, common tern, little tern; waterbird assemblage.
Chichester & Langstone Harbours Ramsar	1.2km (south)	Designated for waterfowl assemblage including ringed plover, black-tailed godwit, common redshank,

		dark-bellied brent goose, common shelduck, grey plover, dunlin, little tern.
Warblington Meadow Site of Special Scientific Interest (SSSI)	1.2km (south)	Unimproved grazing marsh with notable gradation from freshwater marsh to old reclaimed saltmarsh.
Chichester Harbour SSSI	1.2km (south)	Estuarine basin with mudflats, sandflats, and associated habitat; important waterfowl assemblage.
Langstone Harbour SSSI	2.5km (south-west)	Tidal basin with extensive mudflats, saltmarsh, and eelgrass beds; important waterfowl assemblage.

Summary and Evaluation

The internationally (SACs, SPAs and Ramsar) and nationally (SSSIs) designated sites are of High importance.

Locally designated sites within the ZOI are of Medium importance.

9.4.2 Habitats, Vegetation, and Flora

Table 9.6 presents a summary description and evaluation of the main habitats within the site and its immediate surrounds. The baseline distribution of habitats is represented in Figure 9.3, with further details of survey results provided in Appendix 9.1.

Table 9.6 - Baseline Habitat Summary		
Habitat	Importance	Summary Description
Southleigh Park woodland habitat assemblage ('the parkland')	Medium	<p>Parkland: nineteenth century ornamental parkland landscape of mature and veteran pedunculate oak trees over agriculturally improved grassland layer.</p> <p>Lowland mixed deciduous woodland: 'the spinney', a densely spaced group of mature and veteran oak trees over occasional scrub, within the parkland landscape.</p> <p>Other mixed woodland: belts of nineteenth century mixed ornamental plantation woodland forming a screening fringe to the parkland.</p>
Other broadleaved woodland	Low	<p>'Eastleigh Copse', a triangle of broadleaved woodland at the northern extent of the site – likely planted in phases during the nineteenth century for ornament, screening, and game cover.</p> <p>'Southleigh Copse', a square of post-1950s native broadleaved woodland on made and disturbed ground adjacent to the Southleigh Farm building complex.</p> <p>A belt of 1990s plantation woodland forming part of the site's western boundary.</p> <p>A small mixed tree block within open farmland to the south of Southleigh Farm buildings.</p> <p>Stands of young shelterbelt plantation at the south-western edge of the Southleigh Farm building complex.</p>

Other neutral and lowland acid grassland	Low	Several small fields occupied by herb-poor permanent pasture, predominantly mesotrophic with localised occurrence of acid grassland indicators. Agricultural headlands dominated by coarse grass species.
Modified grassland	Negligible	Intensively managed agricultural grassland dominated by one or few vigorous grass species.
Cropland	Negligible	Large open fields cultivated for cereal crop production.
Buildings and hardstanding	Negligible	A complex of farm buildings at Southleigh Farm, to the south of Southleigh Road, and a derelict barn to the north-west of the Eastleigh Road junction.
Lines of Trees	Low	Various boundary treelines, dominated by Pedunculate Oak and Ash.
Hedgerows	Low	Various field boundary hedgerows, largely Hawthorn-dominated and species-poor although species-rich sections are present to the north-west side of Eastleigh Road and south side of Southleigh Road.
Watercourses	Low	A series of steeply banked and seasonally wet field boundary ditches with limited aquatic and marginal flora. 'West Brook': a recently rerouted and landscaped 'low flow wet ditch', lying shortly beyond and parallel to the southern part of the site's eastern boundary. Two discrete downstream sections of the brook are designated as Sites of Importance for Nature Conservation.

9.4.3 Amphibians

The records search returned records of individual common toads within 2km but no large breeding populations. The most recent great crested newt (GCN) record dates from 1988.

A single waterbody occurs within the site boundary – a shallow pool within the parkland 'spinney' feature – with a further five ponds located within 250m of the site boundary (excluding those on the distal side of the A27). Negative GCN eDNA sampling results were returned from the on-site pool and two of the off-site ponds (respectively standing to the almost immediate east and west of the site boundary), whereas a third (within Hollybank Woods to the east) was entirely dry.

The two ponds which were not accessible for survey occur in relative mutual proximity near the northern part of the application site. For the nearest of these ponds, negative GCN survey results have separately been reported in relation to the proposed redevelopment of Southleigh Park House (APP/17/00863 and APP/21/01451), most recently in 2022.

GCN are likely absent from the ZOI of the proposed development. The site and broader ZOI are not considered likely to support a significant amphibian assemblage.

9.4.4 Badgers

Two Badger records were returned from within the search area, both dating from 2006 and located in the vicinity of Warblington railway station, to the west of the site.

No badger setts were recorded within the site or its immediate surrounds. Evidence of badger activity was limited to a dung pit found on the south-western boundary and occasional feeding signs – particularly maize husks – recorded within the northern part of the site, and potentially indicative of badgers dispersing to forage from the wooded habitat to the north and north-east.

Evaluation

Badger is not a species of conservation concern, and there is limited evidence of badger activity within the site, although it is likely that the site provides foraging and dispersal habitat for a local badger population. In view of the applicable statutory protection and the relatively limited availability of other grassland and arable foraging opportunities within the vicinity, the habitat opportunities presented to badger are assessed as being of Low importance.

9.4.5 Bats

Records of various bat species were returned from the 2km search area, including the rare species, Bechstein's bat, western barbastelle, and Alcahoie bat.

It is widely recorded that maternity colonies of Bechstein's bat occur within Southleigh Forest, which lies almost immediately to the north-east, and within the broader complex of East Hampshire woodlands to the north. Radiotracking surveys commissioned by Hampshire and Isle of Wight Wildlife Trust in 2024 have recorded Bechstein's bats foraging within the parkland part of the application site, and a barbastelle commuting southward through the site from a maternity roost in Barton's Copse to coastal foraging habitats via underpass crossings of the A27 (*pers. comm.* Ecological Consultancy Services Ltd.). Bechstein's bats have been captured during trapping surveys undertaken (most recently in July 2022) to inform the proposed redevelopment of Southleigh Park House, almost immediately to the north of the application site.

Similar surveys undertaken in 2017 and 2021 to inform proposals for the development of land north of Long Copse Lane, Emsworth (APP/21/00893), determined that Bechstein's bats use the corridor of the River Ems as a key southward commuting route, either crossing the A27 or dispersing to east and west along its wooded corridor – progressing westward from the Ems toward the south-eastern extent of the Southleigh Allocation (but not as far east as the application site itself).

In the course of the 2023 survey programme, several minor common and soprano pipistrelle days roosts were recorded within the external fabric of the main workshop building at Southleigh Farm – which is proposed for retention. Bats are considered likely absent from the other buildings within the site. Activity indicative of hibernation roosting was not recorded during the hibernation surveys.

Only two trees currently proposed for removal are considered to provide potentially suitable opportunities for roosting bats: the roadside oak trees T54 and T218, which are considered to have low suitability for roosting. Various retained trees present such features, particularly within the parkland part of the site, and a single common pipistrelle day roost was identified within the south-western part of the parkland.

At least nine bat species were recorded in the course of activity transects and automated sampling, including the common, soprano, and Nathusius' pipistrelle, noctule, serotine, Leisler's bat, barbastelle, and Myotis and long-eared species. Activity was largely concentrated around boundary features: the greater part of the site has very limited suitability for bats and was subject to low levels of activity.

Observed activity levels during both targeted trapping and fixed-point surveys were low and only four bats were captured: two male Natterer's bats, one male soprano pipistrelle, and one post-lactating female brown long-eared bat.

Evaluation

The greater part of the site has poor suitability for bats and is subject to very limited bat activity. This notwithstanding, the bat assemblage within the ZOI and the habitats and features on which it depends are considered to be of High importance, in view of the utilisation of the site by rare bats associated with important offsite maternity colonies.

9.4.6 Birds

A total of 55 bird species was recorded in the course of breeding bird surveys, of which 42 were considered to be potentially breeding within the site and its relatively close surrounds. These totals respectively included 28 'Birds of Conservation Concern' or other conservation priority species, of which 17 were considered to be potentially breeding within the ZOI. The breeding assemblage largely comprises 'woodland and garden' species, although some farmland birds – particularly including skylark – are also present.

Barn owl was recorded foraging within the parkland on several occasions; no roosting or nesting site was located during surveys, although there are anecdotal records of a tree roost on the site's southern boundary.

Respective totals of 34 and 49 species were recorded during the 2022-23 and 2025-26 wintering bird surveys, of which 24 were 'Birds of Conservation Concern' or other conservation priority species. The winter assemblage is largely typical of open arable farmland and includes reasonably large flocks of corvid and gull species. Counts of up to 72 common snipe were recorded from within the flood relief basin in the south-eastern corner of the site in the context of exceptionally wet weather in early 2026.

Despite the relative proximity of the SPA and 'Primary Support Areas' identified in the Solent Wader and Brent Goose Strategy (SWBGS), no brent geese were recorded in the course of this survey. The southern half of the site was previously surveyed to inform the SWBGS and resultantly categorised as a 'negative records only' area.

Low numbers of the SPA-qualifying species Teal and Little Egret were recorded during the 2022-23 survey programme: the former in a group of three on a single occasion, the latter, singly or in pairs, on three of the ten survey visits. Both species occurred within the corridor of West Brook toward the southern extent of the site's eastern boundary.

Summary and Evaluation

The bird assemblage includes a variety of woodland, garden, and farmland species, with seasonal wetland bird interest largely restricted to recently created flood management features in the south-eastern corner of the site. On the basis of its overall diversity and the

abundance and rarity of the species recorded, the local assemblage is assessed as being of Medium importance.

9.4.7 Dormice

A single hazel dormouse record was returned from the vicinity of Rowlands Castle to the north.

No evidence of dormice was recorded during the 2023 nest-tube survey: dormice are considered to be absent from the ZOI of the proposed development – although, in view of its occurrence within the broader landscape, further consideration of this species should not be excluded from future project stages.

9.4.8 Invertebrates

Given the prevalence of deadwood, the parkland area, and particularly the spinney, were identified as the features of principal importance for invertebrate conservation on the basis of an 'Invertebrate Habitat Potential' rapid assessment. The arable and grassland fields have very low value for invertebrates.

'Pantheon' analysis of a total of 248 invertebrate taxa recorded during the 2023 survey attributed the 'bark and sapwood decay' assemblage with 'favourable' condition. Other assemblage types represented within the site were assessed as being in 'unfavourable' condition.

Summary and Evaluation

The site is largely occupied by agricultural habitats with negligible value for important invertebrates, although some features of more elevated value, particularly for saproxylic species, occur. The invertebrate assemblage is considered to be of Medium importance.

9.4.9 Reptiles

The distribution of potentially suitable reptile habitat is largely limited to field margins, grassy headlands, small areas of rank neglected pasture, and localised areas of grassland-scrub interface within the parkland. Populations of slow worm (peak count of 43 adults) and common lizard (one record) were recorded within these areas.

Summary and Evaluation

The ZOI supports populations of two common and widespread reptile species, slow worm and common lizard, and is also likely utilised by a third, grass snake, on at least a transient basis. The reptile assemblage is considered to be of Low importance.

9.4.10 Water Voles

Numerous water vole records were returned, particularly from within the catchment of the River Ems, beyond Emsworth.

The watercourses within the site have limited suitability to support water vole as they do not remain wet throughout the year. No evidence of water vole was recorded during the survey programme and the species is considered absent from the ZOI.

9.4.11 Summary of Important Ecological Features

Table 9.7 below provides a summary of the Important Ecological Features within the potential ZOI of the proposed development.

Table 9.7 - Important Ecological Features	
Feature	Importance
Internationally Designated Sites	High
Warblington Meadow Site of Special Scientific Interest (SSSI)	High
Chichester Harbour SSSI	High
Langstone Harbour SSSI	High
Suite of Locally Designated Sites (LNRs, SINCs, LWSs)	Medium
Parkland (and associated wooded habitats)	Medium
Other broadleaved woodland	Low
Other neutral and lowland acid grassland	Low
Lines of trees	Low
Hedgerows	Low
Watercourses	Low
Badgers	Low
Bat Assemblage	High
Bird Assemblage	Medium
Invertebrate Assemblage	Medium
Reptile Assemblage	Low

9.5 Embedded and Standard Mitigation Measures

9.5.1 Embedded Mitigation Measures

The following mitigation measures have been incorporated into the design of the proposals to avoid and minimise ecological impacts as far as possible in the first instance:

- Siting residential-led development within areas of low ecological sensitivity, such as arable land and modified or otherwise herb-poor grassland;
- Retention and buffering of valuable ecological features, principally including the parkland, which is proposed to be retained and enhanced as a community park, and other wooded habitat resources throughout the site;
- Provision of green infrastructure across approximately 40% of the site area and including continuous expanses thereof along the eastern and southern edges of the proposed development.

9.5.2 Standard Mitigation Measures

Construction Phase

As per Sections 5 and 6 of *Appendix 4.1: Framework Construction Environmental Management Plan*, standard measures that will be undertaken to avoid and mitigate impacts during the construction phase include:

- The siting of compounds, storage areas, and haul routes to avoid direct effects on retained habitats;
- The exclusion of construction activities from retained habitats and the root protection areas of retained trees and hedgerows;
- Measures to control surface water runoff and the emission of noise and dust;
- Pollution prevention measures;
- Restrictions on working hours and the use of external lighting;
- Appropriate seasonal prescriptions for the clearance of potential nesting bird habitat;
- Measures to avoid the entrapment of terrestrial mammals within excavations and the fragmentation of their dispersal routes by fencing or hoarding;
- A suite of update and pre-commencement protected species surveys to be conducted at subsequent project stages.

Occupation Phase

Standard mitigation measures to be implemented during the occupation phase of the proposed development will include suitable schemes for external lighting, the drainage of surface water runoff, and the management of public open space (*i.e.*, Landscape Ecological Management Plans (LEMP)).

9.6 Assessment of Environmental Impacts

9.6.1 Construction Phase

Designated Sites

Construction-phase effects upon hydrologically linked (downstream) nature conservation sites will be avoided and mitigated through the adoption of standard best measures for pollution prevention and the control of surface water runoff. Any residual direct effect would be temporary (short term) and of **negligible** significance.

Parkland – Habitat Loss and Enhancement

The intrusion of built development into the parkland is limited to the proposed provision of recreational infrastructure such as path routes and a play area.

The resulting habitat loss would affect the grassland component of the parkland only and is not considered significant in ecological terms. It is in any case offset by the benefits of proposed habitat restoration and enhancement, particularly including the introduction of species-rich grassland and scrub layers and the planting of future cohorts of veteran parkland trees in accordance with Local Nature Recovery Strategy objectives. The net impact would constitute a direct permanent effect of **minor beneficial** significance.

Woodland – Habitat Loss and Enhancement

The extent of woodland habitat loss required to accommodate the proposed development is limited to the removal of occasional small tree groups, most notably including small stands of

young (twenty-first century) shelterbelt plantation to the immediate west of the Southleigh Farm building complex.

The proposals would result in a degree of disruption to Southleigh Copse, including as a result of the removal and remediation of derelict structures, rubble, and Japanese Knotweed, and the indicatively proposed provision of a 'bike skills trail' – although these interventions would net necessarily conduce toward an overall adverse effect in nature conservation terms.

The minor impacts arising from the proposed development will be offset by the adoption of conservation-led management and the benefits of native species planting undertaken across the proposed green infrastructure provision, including a currently (indicatively) estimated quantity of 2.7ha of new mixed native woodland and scrub. The net effect is beneficial but of **negligible** significance.

Grassland – Habitat Loss and Creation

The greater part (approximately 4.5ha or 68%) of the existing resource of herb-poor permanent grassland will be lost to accommodate residential development and associated infrastructure. This will be offset by the enhancement of the retained grassland and creation of a currently estimated quantity of 13.43ha of 'native wildflower' grassland across the proposed green infrastructure provision - excluding enhancements to the parkland area and additional grassland creation within the extensive area of proposed blue infrastructure. The net impact would constitute a direct permanent effect of **minor beneficial** significance.

Trees and Hedgerows – Habitat Loss and Creation

The proposed development will result in the wholesale removal of hedgerows H12, a defunct outgrown native hedgerow, which partly bisects the pasture north of Southleigh farmyard; H15, a line of unmanaged scrub between this pasture and the rear of the Southleigh farm buildings; and H22, a low privet hedge planted alongside a concrete farm track extending south from the farmyard. A further approximate aggregate quantity of 0.5km of field boundary hedgerow and treeline habitat is proposed for removal to provide access, as summarised in *Table 9.8* below.

Ref	Classification	Baseline length (km)	Removed (km)
H01	Native hedgerow	0.11	0
H02	Ecologically valuable line of trees	0.27	0.02
H03	Ecologically valuable line of trees	0.07	0
H04	Species-rich native hedgerow - with bank or ditch	0.20	0.04
H05	Native hedgerow with trees	0.24	0.04
H06	Native hedgerow with trees	0.32	0.04
H07	Native hedgerow with trees	0.11	0.02
H08	Native hedgerow with trees	0.39	0.01
H09	Ecologically valuable line of trees	0.06	0
H10	Species-rich native hedgerow with trees	0.36	0.07
H11	Species-rich native hedgerow	0.22	0.03
H12	Native hedgerow - with bank or ditch	0.13	0.13
H13	Native hedgerow with trees	0.05	0
H14	Native hedgerow	0.26	0.13
H15	Native hedgerow	0.10	0.10
H16	Ecologically valuable line of trees	0.08	0.08
H17	Native hedgerow - with bank or ditch	0.19	0
H18	Native hedgerow with trees - with bank or ditch	0.34	0.05

H19	Native hedgerow with trees - with bank or ditch	0.22	0.02
H20	Native hedgerow with trees - with bank or ditch	0.22	0.07
H21	Native hedgerow with trees - with bank or ditch	0.25	0
H22	Native hedgerow	0.30	0.30

This will be offset by the creation of a currently estimated quantity of 1.9km of new native species-rich hedgerow habitat across the proposed green infrastructure provision. The net effect is beneficial but of **negligible** significance.

Watercourses – Habitat Loss and Enhancement

The impact of the proposed development upon existing watercourses will be limited to the provision of a small number of additional culvert crossings over the existing field boundary ditches. This will be offset both by direct enhancement of the retained ditch habitat, as part of the combined blue-green infrastructure provision, and indirect benefits arising from the provision of riparian habitat buffers and the discontinuation of the adjacent arable use. The net effect is beneficial but of **negligible** significance.

Retained Habitats – Damage and Degradation

Potential damage to or pollution of retained habitats as a result of site clearance and construction activities will be avoided by the implementation of the standard mitigation measures described above.

Badgers – Habitat Loss and Fragmentation

In the absence of mitigation, the proposed development will result in a reduction in the local availability of grassland and arable foraging habitat. The resultant direct effect would be permanent and adverse, but is considered to be of **negligible** significance in view of the embedded mitigation measures described above – particularly including the retention and enhancement of the parkland area and the provision of a continuous expanse of green infrastructure along the site's southern and eastern boundaries.

Badgers – Harm to or Disturbance by Construction Activity

Harm to or disturbance of badgers (including the risk of a legal offence) will be avoided and mitigated by the implementation of standard mitigation measures as described above. The residual effect would be temporary, short term, and of **negligible** ecological significance.

Bats – Harm to Individuals and Loss of Roosts

The proposals provide for the retention of the main workshop building at Southleigh Farm; it is unknown at present whether the repurposing of this building is likely to affect the minor bat roosts recorded within the external fabric thereof. If such an effect is identified at subsequent planning stages, it would be offset through the provision of alternative roosting opportunities pursuant to the requirements of a protected species mitigation licence.

Impacts upon any hitherto unidentified bat roosts (including the risk of a legal offence) will be avoided by the implementation of the standard mitigation measures described above –

particularly including update and pre-commencement surveys. The effects are therefore **negligible**.

Bats – Disturbance by Construction Activity

The effects of construction phase lighting and other disturbance on bats will be avoided and mitigated by the implementation of standard mitigation measures as described above. The residual effect would be direct, temporary, short term, and of **negligible** ecological significance.

Bats – Loss and Creation of Foraging Habitat

Foraging activity within the ZOI was found to be largely concentrated along boundary and linear habitats. As summarised in *Table 9.8* above, only a relatively limited proportion (approximately 31%) of the baseline hedgerow habitat resource is proposed for removal to facilitate the proposed development.

The proposed development will also result in the loss of approximately 10ha of modified grassland and 5ha of herb-poor permanent grassland, which may present foraging opportunities for species associated with more open habitats – although only very limited levels of bat activity were recorded within such habitats during the assessment programme.

These impacts will be offset by the beneficial effects of habitat creation and enhancement within the green infrastructure provision, including approximately 1.9km of hedgerow planting; 3ha of native scrub and woodland; 13ha of ‘wildflower grassland’; and a further 6.9ha of grassland/wetland habitat within the proposed blue infrastructure provision. Most materially, the proposals will significantly enhance the value of the parkland area as a foraging resource for rare bat species – particularly through the introduction of species-rich grassland and scrub layers.

The net effect is predicted to be direct, permanent, and of **minor beneficial** significance.

Bats – Fragmentation and Enhancement of Habitat Connectivity

Although the extensive introduction of built development and the localised removal of boundary vegetation to facilitate access have the potential to reduce the permeability of the landscape to bats, fragmentation effects are largely considered to have been avoided by design. With the exception of small breaches required for the provision of pedestrian or vehicular access, existing boundary treelines and hedgerows will largely be retained within the proposed development.

Habitat connectivity along the north-south axis will be strengthened by the provision of a continuous semi-natural habitat corridor, exceeding 50m in minimum width, along the full length of the site’s eastern boundary to the south of Southleigh Road, forming an enhanced habitat buffer to the existing riparian corridor of West Brook. This will provide a substantial habitat link between the parkland, Southleigh Forest, and the broader complex of East Hampshire woodlands to the north, and further foraging and dispersal opportunities to the south – including West Brook, the adjacent ‘Land West of Emsworth Recreation Ground’ (or “Little Meadow”) SINC, the wooded A27 corridor, and underpass crossings of the A27 south of Emsworth.

The proposals also allow for a >100m semi-natural habitat buffer to the wooded corridor of the A27, where this lies adjacent to the central part of the site's southern boundary. It is anticipated that, along with other land within the draft allocation to the east and west, this is likely to form part of a broader green infrastructure corridor running parallel to the A27, thereby facilitating continued bat dispersal along the east-west axis and between underpass locations.

The net effect is considered to be beneficial but of **negligible** significance.

Birds – Loss of Breeding Habitat

The proposed development will not cause a significant diminution in the availability of arboreal habitat nesting opportunities, but will result in the loss of open arable habitat - of otherwise very limited value for nature conservation – which supported up to ten skylark territories in 2023. Skylark is not threatened by a lack of potentially suitable farmland habitat but rather by the adoption of unsympathetic land management practices – this notwithstanding, the loss of skylark breeding habitat would constitute a direct, permanent, effect of **minor adverse** significance.

Birds – Loss of Foraging Habitat and Habitat Creation

The loss of open grassland and arable land will reduce the availability of foraging habitat for certain bird species, particularly the winter bird assemblage, which included moderate flocks of largely common and widespread species such as black-headed and herring gull, rook and jackdaw, and woodpigeon. However, this impact will be offset by the beneficial effects of habitat creation undertaken on an extensive scale within proposed green infrastructure, including the provision of relatively species-rich grassland, scrub, and wetland features. The proposed restoration and conservation-led management of the parkland is likely to enhance its capacity to support foraging barn owl.

The residual impact will vary between species and species groups; the overall effect is predicted to be broadly neutral and consequently of **negligible** significance.

Birds – Harm to or Disturbance by Construction Activity

Harm to or disturbance of nesting birds (including the risk of a legal offence) will be avoided and mitigated by the implementation of standard measures pursuant to the CEMP. The residual adverse effect would be temporary, short term, and of **negligible** ecological significance.

Invertebrates - Loss and Creation of Habitat

Given the retention of key invertebrate habitat features within the parkland part of the site, the habitat loss required to accommodate the proposed development is unlikely to have significant implications for invertebrate conservation and will in any case be offset by the effects of habitat creation and enhancement within the proposed green infrastructure provision. The overall effect is predicted to be permanent and beneficial, but of **negligible** significance.

Reptiles - Loss and Creation of Habitat

The pre-development distribution of reptile habitat and populations is limited to localised areas on the margins of the current agricultural use: a proportion of this habitat will be lost to accommodate the proposed development, including a narrow grass headland, to the south of Southleigh Farm, from which both slow worm and common lizard were recorded. Such losses will however be the offset by the effects of habitat creation and enhancement within the proposed green infrastructure provision, which are projected, subject to suitable design and management prescriptions, to cause an overall increase in the quantity and quality of habitat opportunities. The overall effect is predicted to be permanent and beneficial, but of **negligible** significance.

Reptiles – Killing or Injury

Unmitigated site clearance activities may cause harm to individual reptiles, potentially resulting in a legal offence and temporary, short-term effect of **minor adverse** significance.

Table 9.9 - Summary of Impact Assessment – Construction Phase						
Receptor	Sensitivity/Importance/Value	Description of Impact	Embedded & Standard Mitigation Measures	Magnitude of Effect	Type of Effect	Significance of Effect
Downstream SINCs	Medium	Changes in water quality arising from pollution or uncontrolled runoff	Implementation of CEMP	Negligible	Temporary Short-term Direct	Negligible
Parkland	Medium	Habitat loss and enhancement	Retention and enhancement of parkland as community park	Low Beneficial	Permanent Direct	Minor Beneficial
Woodland	Low	Habitat loss and creation	Green infrastructure provision	Negligible	Permanent Direct	Negligible
Grassland	Low	Habitat loss and creation	Green infrastructure provision	Low Beneficial	Permanent Direct	Minor Beneficial
Trees and Hedgerows	Low	Habitat loss and creation	Green infrastructure provision	Negligible	Permanent Direct	Negligible
Watercourses	Low	Habitat loss and enhancement	Retention and enhancement of watercourses within open space	Negligible	Permanent Direct	Negligible
Retained habitats	Medium – Low	Damage or pollution	Implementation of CEMP	Negligible	Temporary Short-term Direct	Negligible
Badgers	Low	Habitat Loss or Fragmentation	Green infrastructure provision	Negligible	Permanent Direct	Negligible
Badgers	Low	Harm to or disturbance by	Implementation of CEMP; update surveys	Negligible	Temporary Short-term	Negligible

		construction activity			Direct	
Bats	High	Harm to individuals / loss of roosts	Retention of known tree and building roosts; implementation of CEMP; update surveys	Negligible	Temporary Short-term Direct	Negligible
Bats	High	Disturbance by construction activity	Implementation of CEMP	Negligible	Temporary Short-term Direct	Negligible
Bats	High	Loss and creation of foraging habitat	Green infrastructure provision	Low Beneficial	Permanent Direct	Minor Beneficial
Bats	High	Fragmentation & enhancement of habitat connectivity	Green infrastructure provision	Negligible	Permanent Direct	Negligible
Birds	Medium	Loss of arboreal nesting habitat	Green infrastructure provision	Negligible	Permanent Direct	Negligible
Birds	Medium	Loss of skylark breeding habitat	Not proposed	Low adverse	Permanent Direct	Minor adverse
Birds	Medium	Loss of foraging habitat and habitat creation	Green infrastructure provision	Negligible	Permanent Direct	Negligible
Birds	Medium	Harm to or disturbance by construction activity	Implementation of CEMP	Negligible	Temporary Short-term Direct	Negligible
Invertebrates	Medium	Loss and creation of habitat	Retention of key habitat; green infrastructure provision	Negligible	Permanent Direct	Negligible

Reptiles	Low	Loss and creation of habitat	Green infrastructure provision	Negligible	Permanent Direct	Negligible
Reptiles	Low	Killing or injury	Implementation of CEMP	Low adverse	Temporary Short-term Direct	Minor adverse

9.6.2 Occupation Phase

Designated Sites – Increased Recreational Pressure

Potential effects on internationally designated nature conservation sites are considered in *Appendix 9.2* and briefly summarised here. Recreational pressure exerted by residents of the proposed development would, when taken alone, have a **negligible** effect on the Chichester and Langstone Harbours SPA and Ramsar site, the broader suite of Solent SPAs and Ramsar sites, and by extension the underlying SSSI designations – although proportionate mitigation is nevertheless required, in accordance with the extant strategic mitigation framework, to avoid a broader in-combination effect.

In view of the respective interest features and separation distances, and given that the proposals allow for the provision of approximately 50ha of green infrastructure, including an extensive new community park which will attract recreational visits from both new and existing dwellings, the proposed development is not predicted to cause adverse recreational pressure effects on locally designated sites. The effect is therefore **negligible**.

Designated Sites – Changes in Water Quality

Water quality changes arising from wastewater generated by residents of the proposed development would, when taken alone, have a **negligible** effect on the Chichester and Langstone Harbours SPA and Ramsar site, the broader suite of Solent SPAs and Ramsar sites, and by extension the underlying SSSI designations – although proportionate mitigation is nevertheless required to avoid a broader in-combination effect.

Other potential water quality effects upon hydrologically linked (downstream) sites will be avoided and mitigated through the development of a suitable surface water drainage strategy. The effect is therefore **negligible**.

Designated Sites – Changes in Air Quality

As described in *Appendix 9.2*, the proposed development is not projected to result in an adverse air quality-related effect on internationally designated nature conservation sites. The relative quantity of additional traffic growth is also unlikely to occasion a significant air quality effect on the suite of locally designated sites. The effects are therefore **negligible**.

Retained Habitats – Recreational Use

Although the proposed development will generate a significant increase in recreational activity within retained semi-natural habitats such as the parkland and other woodland areas, it is considered that significant effects will be mitigated through design – such as the provision of suitably routed and surfaced path routes – and offset by the effects of active, conservation-led management, pursuant to a LEMP. The residual effect would be broadly neutral and consequently of **negligible** significance.

Bats – Disturbance by Recreational Activity

The proposed development will generate a significant increase in recreational activity within retained semi-natural habitats of importance to bats, particularly including the parkland, which

will be retained as a community park. Such recreation is likely to be largely diurnal and passive in nature, which inherently moderates its potential effect on bats.

Although the parkland presents potentially suitable roosting opportunities for bats, no roosts of high conservation importance have been identified to date. Potential disturbance effects on roosting bats will be avoided by design – including by the sensitive location of proposed path routes and other amenity infrastructure.

In the absence of mitigation, health and safety considerations may conduce to an increase in the intensity of arboricultural management during the occupation phase. Resultant effects will be avoided and mitigated by a conservation-led approach to management, as prescribed within a LEMP, which will prioritise the retention of standing deadwood and veteran features wherever possible, and require ecological input to any arboricultural intervention.

The residual effect is predicted to be direct, permanent, and adverse, but of **negligible** significance.

Bats – External Lighting

The proposed development will result in the relatively widespread introduction of artificial light from sources including both internal and external lighting of dwellings, and lighting of new roads and footways. To a substantial degree, however, effects on bats are considered to be avoided by design: extensive areas of unlit semi-natural habitat will be maintained within the parkland, the >50m buffer along the southern part of the eastern boundary, and the >100m buffer to the A27 corridor.

Further mitigation will be provided through the development of a suitably sensitive external lighting strategy. The residual effect is predicted to be direct, permanent, and adverse, but of **negligible** significance.

Birds – Disturbance and Predation

The recreational use of new and retained habitats within the proposed development will result in increased disturbance of birds, and will increase the number of domestic pets within the ZOI. Relevant studies have been unable to determine whether cat predation imposes additional mortality on garden bird populations, or whether the numbers of deaths caused by cat predation are similar to those that would have occurred anyway (Gibbons *et al.*, 2007). The use of new and retained seasonal wetland features by wetland species which may be more sensitive to disturbance is likely to be limited to periods of winter flooding – which will inherently moderate the extent of any concurrent recreational use.

The residual effect is predicted to be direct, permanent, and adverse, but of **negligible** significance.

Reptiles – Disturbance and Predation

The reptile assemblage within the ZOI will be subject to increased risk of disturbance due to the recreational use of new and retained habitats and predation pressure arising from an increase in the local pet population. However, slow worm, by the far the most widespread and numerous species within the ZOI, commonly occurs in domestic gardens, and the spatial extent of the proposed green infrastructure provision is likely to have a diluting effect on the

impact of recreational activity, particularly within marginal areas that are more likely to support reptile populations.

The residual effect is predicted to be direct, permanent, and adverse, but of **negligible** significance.

Table 9.10 - Summary of Impact Assessment – Occupation Phase						
Receptor	Sensitivity/Importance/Value	Description of Impact	Embedded & Standard Mitigation Measures	Magnitude of Effect	Type of Effect	Significance of Effect
Chichester and Langstone Harbours SPA and Ramsar site (and underlying SSSIs)	High	Increased recreational pressure	n/a	Negligible	Permanent Indirect	Negligible (but mitigation required for Habitats Regulations compliance)
Chichester and Langstone Harbours SPA and Ramsar site, and Solent Maritime SAC (and underlying SSSIs)	High	Increased wastewater generation	n/a	Negligible	Permanent Indirect	Negligible (but mitigation required for Habitats Regulations compliance)
Downstream SINCs	Medium	Surface water runoff	SuDS Strategy	Negligible	Permanent Direct	Negligible
Designated sites	High – Medium	Air quality changes	n/a	Negligible	Semi-permanent Indirect	Negligible
Retained habitats	Medium – Low	Recreational use	LEMP	Negligible	Permanent Direct	Negligible
Bats	High	Recreational activity: disturbance and implications for arboricultural management	LEMP	Negligible	Permanent Direct	Negligible

Bats	High	External lighting	Green infrastructure provision and lighting strategy	Negligible	Permanent Direct	Negligible
Birds	Medium	Disturbance and predation	Green infrastructure provision	Negligible	Permanent Direct	Negligible
Reptiles	Low	Disturbance and predation	Green infrastructure provision	Negligible	Permanent Direct	Negligible

9.7 Additional Mitigation Measures

Birds - Loss of Skylark Breeding Habitat

The loss of skylark nesting habitat cannot be avoided or mitigated within the parameters of the proposed development, but will be offset by the payment of a proportionate contribution (as secured by condition or obligation) toward offsite conservation measures such as the maintenance of skylark plots.

Reptiles – Killing or Injury

Harm to reptiles – and a potentially resultant legal offence – will be avoided by the implementation of a reptile mitigation strategy in accordance with applicable good practice, to include the use of phased habitat manipulation in order to exclude reptiles from areas where they may otherwise be at risk and, where this is not practicable, translocation to suitably enhanced on-site receptor areas within the expansive green infrastructure provision.

Designated Sites – Increased Recreational Pressure

Recreational pressure effects upon the Chichester and Langstone Harbours SPA and Ramsar site, the broader suite of Solent SPAs and Ramsar sites, and by extension the underlying SSSI designations will be mitigated in accordance with the Solent Recreational Mitigation Strategy.

Designated Sites – Changes in Water Quality

Water quality effects upon the Chichester and Langstone Harbours SPA and Ramsar site, the broader suite of Solent SPAs and Ramsar sites, and by extension the underlying SSSI designations will be avoided by the achievement of nutrient neutrality through a combination of on-site measures and proportionate offsetting, or pursuant to an approved Environmental Delivery Plan.

Enhancements for Biodiversity

In accordance with national and local policy and Havant Borough Council's Biodiversity Strategy, the proposed development will deliver biodiversity enhancements that exceed the measures required to avoid, mitigate, and/or compensate for the potential effects described above, thereby delivering net gains for biodiversity.

In addition to the 'measurable' effects upon habitats and vegetation related in *Appendix 9.3*, such enhancements will include the provision of 'hedgehog highway' gaps within closeboard garden fencing, loggeries, integrated bat roosting and bird nesting features at minimum rates of one each per dwelling, and other such features installed on suitable retained trees.

9.8 Residual Impact Assessment

Subject to the implementation of the impact avoidance and mitigation measures described in *Sections 9.6 and 9.7*, the proposed development is not projected to result in significant

adverse effects on any Important Ecological Features, and is considered capable of complying with all relevant legislative and policy requirements.

9.9 Cumulative Impact Assessment

The developments considered with respect to cumulative impact assessment are characterised in *Chapter 4* of this ES.

Three of these - Southleigh Park House; Camp Field (land to the west of Havant Crematorium), Bartons Road; and Land north of Long Copse Lane, Emsworth – lie to the north or east of the application site and will (if the latter is consented) also have the effect of introducing new residential development in proximity to offsite woodlands known to support maternity roosts of rare bat species. However, given the spatial relationship between the three projects, and the mitigation and enhancements proposed within both the currently proposed development and these ‘cumulative’ schemes, no significant in-combination or inter-project effect is predicted to arise.

The other cumulative schemes lie to the south of the application site: land within the broader emerging Southleigh Allocation; Land West of Coldharbour Farm Road, Emsworth; and Land east of St Georges Avenue, Havant. Particularly in view of the presence of the West Brook riparian corridor and ‘Land West of Emsworth Recreation Ground’ SINC, these schemes are not considered likely to significantly impinge on the ability of rare bats to disperse southward through the current application site in order to access the A27 corridor and underpass crossing opportunities. Subject to the adoption of suitable impact avoidance and mitigation measures, no significant cumulative or inter-project effect is anticipated.

9.10 Summary

The remnant parkland of Southleigh Park House, together with other associated wooded habitat in the north-eastern part of the site, is the main locus of ecological importance within the immediate ZOI - both in terms of its inherent importance and in view of its suitability as a foraging resource for rare woodland bat species, particularly Bechstein’s bat, which occupy Southleigh Forest, in close proximity to this part of the site, and the broader complex of East Hampshire woodlands to the north.

The proposals allow for the parkland to be retained as a community park and enhanced through a suite of positive habitat interventions and the adoption of ongoing conservation-led management. The continued dispersal of bat species and other fauna will be facilitated by the provision of a semi-natural habitat corridor, exceeding 50m in minimum width, along the full length of the site’s eastern boundary.

The remainder of the site is largely subject to intensive agricultural use and presents a relatively modest degree of ecological constraint to development. Standard and tested measures are proposed to avoid and mitigate effects on receptors including common and widespread reptile species, and farmland birds.

The EcIA set out in this Chapter has predicted that, subject to the implementation of the impact avoidance and mitigation measures set out above, the proposed development will not have significant adverse residual effects on Important Ecological Features, and is capable of conforming to all applicable nature conservation-related legislation and policy, as set out in *Appendix 9.1*.