LC Ecological Services

BIODIVERSITY ACTION PLAN REPORT

BOURNEMOUTH UNIVERSITY'S TALBOT CAMPUS AND THE WALLISDOWN PAVILION

SEPTEMBER 2022

ON BEHALF OF BOURNEMOUTH UNIVERSITY

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The contents of this report were correct at the time of the last survey visit. The report is provided for the sole use of the named client and is confidential.

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SUMMARY

1. LC Ecological Services Limited were commissioned by Bournemouth University to conduct an ecological appraisal of their Talbot Campus (including the Wallisdown Pavilion area) and to produce a biodiversity action plan for this campus. This work was required to advise the university on how it could maintain and enhance the ecological value of its estate, particularly in view of the current global biodiversity and climate crises.

2. An ecological appraisal is essentially a baseline habitat survey which is extended to include an assessment of a site's potential to support any legally protected, notable and/or invasive species. The survey is conducted with the objective of identifying the baseline ecological conditions on site and any constraints, such as habitats of high nature conservation value, habitats that could potentially support legally protected or notable species, and the presence of invasive species.

3. The Talbot Campus comprised a mostly urbanised site dominated by buildings, infrastructure and hard and soft landscaping, together with some limited areas of semi-natural habitat. The habitats and features recorded on site included buildings and structures, amenity grassland, areas sown with wildflower seed mixtures, rough grassland, ruderal vegetation, ornamental planting, scrub, hedgerows, woodland, scattered trees, hardstanding, and bare ground.

4. The Wallisdown Pavilion mostly comprised an expanse of amenity grassland primarily used as sports pitches. Other habitats and features recorded on the site included ruderal vegetation / rough grassland, ornamental planting, scrub, scattered trees, buildings and structures, bare ground and hardstanding.

5. A series of recommendations are provided in section 5 to enhance the biodiversity value of the Talbot Campus and incorporate nature-based solutions. These include measures to further utilise and enhance the rooftop spaces of the buildings on site, management prescriptions for existing areas of grassland and ruderal vegetation, improvement of the existing ornamental planting on site and associated management approaches, trial heathland restoration / creation in specific locations of potential suitability, native hedgerow planting in specific locations, enhancement and extension of existing woodland habitat, incorporating more broad-leaved tree planting on site in suitable locations, and re-siting of existing bird and bat boxes to more optimal locations.

6. Recommendations to enhance the biodiversity value of the Wallisdown Pavilion area include provision of rough grassland habitat around the margins of the playing fields and native hedgerow planting alongside the western and northern boundaries (refer to section 5.11).

1.0 INTRODUCTION

LC Ecological Services Limited were commissioned by Bournemouth University to conduct an ecological appraisal of their Talbot Campus (including the Wallisdown Pavilion area) and to produce a biodiversity action plan for this campus. This work was required to advise the university on how it could maintain and enhance the ecological value of its estate, particularly in view of the current global biodiversity and climate crises (IPBES, 2019). The Talbot Campus is located within a suburban area to the north of Bournemouth town centre off Wallisdown Road, BH12 5BB (approximate central grid ref: SZ 07417 93628). The Wallisdown Pavilion area is located approximately 0.5 kilometres to the north-west of the Talbot Campus off Talbot Drive, BH10 4HZ (approximate central grid ref: SZ 06700 93925). Plans showing the locations of the sites and the survey boundaries are included as appendix I.

An ecological appraisal is essentially a baseline habitat survey which is extended to include an assessment of a site's potential to support any legally protected, notable and or invasive species. The survey is conducted with the objective of identifying any ecological constraints such as habitats of high nature conservation value, habitats that could potentially support legally protected or notable species, and the presence of invasive species.

Section 2 of the report provides some background information on relevant wildlife legislation and policy. Section 3 details the methodologies adopted for the ecological surveys and assessments that were conducted and section 4 provides an account of the survey results. Section 5 provides a series of recommendations on how the site could be enhanced for biodiversity and incorporate nature-based solutions.

2.0 LEGISLATION AND POLICY

2.1 Legislation

The following legislation may be of relevance to the proposed works. Full details of statutory obligations with respect to biodiversity and the planning system can be found in DCLG Circular 06/2005.

- **The Conservation of Habitats and Species (Amendments) Regulations 2017:** This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into domestic law. The Regulations provide protection for a number of species including:

  - All species of bat
  - Hazel dormouse (*Muscardinus avellanarius*)
  - Otter (*Lutra lutra*)
  - Great crested newt (*Triturus cristatus*)

  This legislation makes it an offence to deliberately capture, kill or injure individuals of these species listed on Schedule 2 and damage or destroy their breeding site or place of shelter. It is also illegal to deliberately disturb these species in such a way as to be likely to significantly affect: (i) the ability of any significant group of the species to survive, breed or rear or nurture their young; or (ii) the local distribution or abundance of the species[1].

  This legal protection means that where development has the potential to impact on bats, or other species of national interest[2], the results of a protected species survey must be submitted with a planning application.

  Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) are also protected under this legislation. These are a network of sites designated for supporting habitats or species of high nature conservation importance in the European context. Any activity that has a detrimental effect on these European sites is made an offence under the Regulations. Where a development is likely to have a significant impact on a European site, the Regulations require a rigorous assessment of the impacts, known as an Appropriate Assessment.

[1] The *Conservation of Habitats and Species (Amendments) Regulations 2017* consolidated the numerous amendments that were made to the Conservation (Natural Habitats, & c.) Regulations 1994. Of particular relevance are amendments made in August 2007 and January 2009 which an increased the threshold of illegal levels of disturbance to European Protected Species (EPS). An offence is only committed if the deliberate disturbance would result in significant impacts to the EPS population. However, it should be noted that activities that cause low levels of disturbance to these species continue to constitute an offence under Section 9 of the Wildlife and Countryside Act (see below).

[2] Species of wild fauna and flora as listed in Annex II, IV or V to the Habitats Directive.

- **The Wildlife and Countryside Act 1981 (and amendments):** Protected fauna and flora are listed under Schedules 1, 5 & 8 of the Act. Species likely to be of relevance include:

  - All species of **bat.** It is an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost.
  - All species of British **reptile** (in particular grass snake (*Natrix helvetica*), common lizard (*Zootoca vivipara*), adder (*Vipera berus*) and slow-worm (*Anguis fragilis*)). It is illegal to kill or injure these species.
  - **Great crested newt.** It is illegal to obstruct access to any structure or place which great crested newts use for shelter or protection or to disturb any great crested newt while it is using such a place.

  This Act also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built). In addition, it is an offence to disturb any nesting bird listed on Schedule 1 or their young.

  Schedule 9 of the Act lists those species for which it is an offence to cause their spread. Schedule 9 species that are most likely to be encountered are Japanese knotweed (*Fallopia japonica*) and New Zealand pigmyweed (*Crassula helmsii)*.

  Sites of Special Scientific Interest (SSSIs) are also protected under the Wildlife and Countryside Act 1981. These are a network of sites identified as being of national nature conservation importance and hence afforded legal protection.

  National Nature Reserves (NNRs) are also protected under the Act (section 35 (1)) and established under the National Parks and Access to the Countryside Act 1949. These are nature reserves which are considered to be of national importance by the relevant statutory bodies i.e. Natural England, Natural Resources Wales.

- **Natural Environment and Rural Communities Act (NERC) 2006**: This Act enforces a duty on the planning authority and local council to conserve biodiversity (section 40). Additionally, section 41 encourages the local councils to be aware of the species and habitats of 'principal importance' and to act accordingly to protect and manage these habitats and species.

- **The Countryside and Rights of Way Act 2000:** This Act strengthens nature conservation and wildlife protection. It places a duty on Government Ministers and Departments to conserve biological diversity, provides police with stronger powers relating to wildlife crimes, and improves protection and management of SSSIs.

- **The Protection of Badgers Act 1992:** This Act makes it an offence to wilfully take, injure or kill a badger (*Meles meles*); cruelly mistreat a badger; interfere with badger setts. A licence is required for work which may damage or disturb a sett.

- **Wild Mammals (Protection) Act 1996:** This Act provides protection for all wild animals from intentional acts of cruelty.

- **Hedgerow Regulations 1997:** These Regulations establish a set of criteria for assessing the importance of hedgerows. Where a hedgerow is deemed to be 'important' its removal is prohibited without consent from the local Planning Authority

2.2 Policy

The following policy is of relevance to the proposed works:

- **National Planning Policy Framework (NPPF):** This sets out the Government's vision for biodiversity in England with the broad aim that planning, construction, development and regeneration should maintain and enhance, restore or add to biodiversity and geological conservation interests. NPPF (2019) includes sections on legally protected species and sites in section 15 (see section 2.1).

- **Local Sites (including Sites of Importance for Nature Conservation (SINCs), Local Nature Reserves (LNR), and Biological Notification Sites (BNSs)/County Wildlife Sites (CWSs)):** These are a network of sites designated for their nature conservation importance in a local context. Although they are not afforded legal protection they contribute towards local and national biodiversity. Where such development is permitted, the local planning authority will use conditions and/or planning obligations to minimise the damage and to provide compensatory and site management measures where appropriate.

- **Natural England Protected Species Standing Advice**: The standing advice is used by local authorities as a fall-back position when in pre-application consultation or during the determination period to define habitat and species survey efforts and mitigation proposals.

- **Biodiversity Action Plans (BAPs):** BAPs set out policy for protecting and restoring priority species and habitats as part of the UK's response as signatories to the Convention on Biological Diversity. BAPs operate at both a national and local level with priority species and habitats identified at a national level and a series of Local BAPs that identify ecological features of particular importance to a particular area of the country. The requirement to consider and contribute towards BAP targets was strengthened through the Countryside and Rights of Way Act 2000.

3.0 METHODOLOGY

3.1 Desk study

Dorset Environmental Records Centre (DERC) provided records of protected, notable and invasive species and details on any non-statutory designated sites for nature conservation within two kilometres of the application site. The Multi-Agency Geographical Information for the Countryside (MAGIC) website was used to provide information on statutory designated sites within two kilometres of the site.

3.2 Field study

3.2.1 Vegetation

The standard phase 1 habitat survey methodology (JNCC, 2016) was adopted whereby habitats are mapped using colour codes (see appendix II). A detailed walkover survey of the site was undertaken on 15th and 16th June 2022 by senior ecologist Andrew Heideman, directly searching for legally protected and invasive species of plant and categorising any habitats of ecological value that were encountered. A general description of the vegetation was also noted, listing species encountered and scoring their abundance using the DAFOR scale shown below.

D Dominant
A Abundant
F Frequent
O Occasional
R Rare
L Local (used as a prefix to any of the above)

In addition to the above, access was also granted to view and assess the roof terraces of the Fusion building on the Talbot Campus.

Limitations

No significant limitations were experienced during the phase 1 habitat survey of the site, the survey was conducted during good weather conditions in mid-June which is within the optimal period for botanical surveys.

3.2.2 Protected species assessment

Badger

A direct search was undertaken for signs of badger. Signs of badger may include setts, dung pits, latrines, paths or hairs caught on fences and vegetation. Any setts encountered were classified according to the number of entrances and the extent of their use.

Bats

Potential for the site to support roosting, foraging and commuting bats was assessed by senior ecologist Andrew Heideman on the 15th and 16th June 2022 in accordance with the Bat Conservation Trust (BCT) *Bat Surveys for Professional Ecologists Good Practice Guidelines* (Collins *et al*., 2016). However, a detailed phase 1 bat roost survey of the buildings and trees on site was outside the scope of this assessment.

Buildings

Bats may roost in various places within buildings e.g. in cracks, crevices, brickwork, under tiles and within timber beam joints. They will often access roosts at key places such as the gable end, soffits, barge-boards, ridge tiles, under broken/lifted tiles, between double lintels, around window frames, through open joints in brickwork, and through open doors or other building entrances.

The presence of roosting bats can be identified by signs such as accumulations of moth or butterfly wings, urine staining, bat droppings or bats themselves. The absence of these signs cannot, however, be treated as conclusive evidence that bats are not using a building. An assessment of the potential for the buildings on site to support roosting bats was carried out using the following scale presented in table 1 below:

Table 1: Classifying the bat roosting potential of buildings

Confirmed Roost	Evidence of bat occupation found.
High roosting potential	Buildings/structures with significant roosting potential, either because they contain a large number of suitable features or the features present appear to be optimal.
Moderate roosting potential	Features with moderate roosting potential. Features that appear less suitable for roosting.
Low / negligible roosting potential	Buildings with few, if any, features suitable for roosting. Features with low suitability for roosting.

Trees

The site was also assessed for its possibility to support bat roosting in trees. Bats often roost in trees. Features such as old woodpecker holes, splits, cavities and rot holes, loose or flaking bark and ivy creepers will be exploited by bats to roost. Any trees present on site were therefore assessed for their potential to support roosting bats by searching for such features. The presence of roosting bats can be spotted through signs such as accumulations of moth or butterfly wings, staining, bat droppings, or bats themselves. The absence of these cannot, however, be treated as conclusive evidence that bats are not present, and therefore an assessment was made of the potential of the trees to support bats based on the scale presented in table 2 below:

Table 2: Criteria for assessing bat roosting potential of trees

High Roosting Potential	Trees with multiple, highly suitable features capable of supporting larger roosts or features with evidence of bat occupation found.
Moderate Roosting Potential	Trees with definite bat potential, supporting fewer suitable features than high roosting potential trees or features with potential for use by single bats only.
Low or Negligible Roosting Potential	Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found or the tree supports some features which may have limited potential to support bats. Trees with no identified potential to support bats.

Foraging and commuting habitat

The habitat on the site was assessed for the quality of potential foraging and commuting habitat for the local bat populations. Bats navigate using linear features in the landscape, such as hedgerows and these can be important features for local roosts. The site itself may also provide important foraging habitat and support local bat roosts. Annex II species of bat may use the site for foraging and commuting. The assessment of the habitats on site will inform the requirement for further survey work.

Breeding and foraging birds

The habitats on site were assessed for their potential to support breeding and foraging birds, including both arboreal and ground-nesting species, any rare, specialised, protected, notable or declining species, as well as more common and widespread species. Recommendations for further action are made where appropriate.

Great crested newt

Suitable breeding ponds are essential to support populations of great crested newt although they actually only spend a relatively short period of the year in the ponds during the spring for breeding. The remainder of the year is spent in suitable 'foraging' terrestrial habitat such as tall grassland and woodland. During the winter, the great crested newt hibernates, often amongst the roots of trees and scrub or in places such as piles of rubble, amongst foundations of buildings or under fallen trees and logs.

Great crested newts are known to forage up to at least five hundred metres from their breeding pond and suitable habitats that fall within two hundred and fifty metres must be considered even in situations where the breeding pond itself will not be affected. The site and surrounding area were therefore assessed for the presence of ponds that may provide suitable breeding habitat for great crested newt. Habitats within the site were also assessed for their suitability as terrestrial great crested newt habitat.

Hazel dormouse

The habitat on the site was assessed for the potential to support the hazel dormouse, which are found in habitats such as woodlands, scrub and hedgerows with good connectivity and suitable food plants. A visual inspection for their distinctive nests was undertaken. Satellite images were used to assess the connectivity of any suitable habitat present on the site to other areas of woodland and hedgerow networks.

Reptiles

Reptiles are widespread in habitats that provide both cover, in the form of scrub or tall vegetation, and basking areas such as areas of hard standing or short grassland communities. Piles of debris or rubble also provide excellent cover and hibernation sites for reptiles. The site was assessed for its potential to support reptile species and recommendations for further action are made where appropriate.

4.0 RESULTS

4.1 Desk study

Statutory and non-statutory sites

Table 3 below lists statutory and non-statutory designated sites for nature conservation located within a two-kilometre radius of the Bournemouth University Talbot Campus.

Table 3: Statutory and non-statutory designated sites within two kilometres of Talbot Campus

Site name	Conservation status	Distance from site	Size (Ha)	Reasons for designation
Dorset Heaths	SAC[3]	0.3km south-west	5719.54	Annex I habitats - Northern Atlantic wet heaths with (*Erica tetralix*), European dry heaths, and Depressions on peat substrates of the Rhynchosporion. Annex II species: the southern damselfly (*Coenagrion mercuriale*).
Dorset Heathlands	SPA[4]	0.3km south-west	8166.97	Qualifies for breeding Dartford warbler (*Sylvia undata*), nightjar (*Caprimulgus europaeus*), and woodlark (*Lullula arborea*), and overwintering hen harrier (*Circus cyaneus*) and merlin (*Falco columbarius*).

[3] SAC: Special Area of Conservation
[4] SPA: Special Protection Area

Site name	Conservation status	Distance from site	Size (Ha)	Reasons for designation
Dorset Heathlands	Ramsar[5]	0.5km south-west	6674.82	This inland wetland contains numerous examples of wet heath (*Erica ciliaris*, *E. tetralix*) and acid valley mire, habitats that are restricted to the Atlantic fringe of Europe. These heath wetlands are amongst the best of their type in lowland Britain. The site supports a large assemblage of nationally rare and scarce wetland plant species and invertebrates.
Bourne Valley	SSSI[6]	0.3km south-west	73.04	An important tract of heathland that has survived within the spread of the Bournemouth-Poole conurbation on the formerly extensive heaths that once bordered Poole Bay. The site comprises heath, mire and woodland vegetation types, as well as the Bourne stream and several ponds. These habitats also support a range of notable and rare plants, birds, reptiles and invertebrates. The assemblage of dragonfly and damselfly species is especially rich.
Turbary and Kinson Commons	SSSI	1.1km north-west	35.94	Areas of relict heathland situated within the urban environs of Bournemouth and Poole. Habitats present include good examples of dry and wet heath, as well as mire, swamp and broadleaved woodland. These habitats in turn support a diverse range of nationally-scarce plants, birds, reptiles and invertebrates.
Pugs Hole	LNR[7]	0.8km south	4.2	The site comprises a mix of mature coniferous and broadleaved trees that have established over old relict heathland. The site is also notable for its assemblages of birds.
Alder Hills	LNR	0.9km south-west	4.31	The site is designated for its dry and humid heath, wildlife pond, and fringing carr woodland habitats. These habitats in turn support notable assemblages of amphibians, invertebrates and birds, as well as the rare reptile species smooth snake (*Coronella austriaca*) and sand lizard

[5] Ramsar: wetlands of international importance designated under the Ramsar convention
[6] SSSI: Site of Special Scientific Interest
[7] LNR: Local Nature Reserve

Site name	Conservation status	Distance from site	Size (Ha)	Reasons for designation
				(*Lacerta agilis*).
Bourne Valley	LNR	1km west	36.6	Habitats of conservation importance, including dry acid dwarf shrub heath, wet heath, valley mire, flush, bog pools, ponds, running water, willow carr, secondary oak/birch woodland, acidic grassland, pasture grassland and amenity grassland. The area is also renowned as one of the best sites in Dorset for dragonflies.
Turbary Common	LNR	1.1km north-west	42.87	The site is primarily designated for its dry and wet heathland habitats which in turn support important flora and fauna, including Dartford warbler, all six species of British reptile, plants including sundew (*Drosera sp*) and bog asphodel (*Narthecium ossifragum*), and insects such as the long-winged conehead (*Conocephalus fuscus*) and the small red damselfly (*Ceriagrion tenellum*). The site is grazed by Exmoor ponies.
Redhill Common	LNR	1.7km north-east	7.13	The site is designated for its mosaic of grassland, heathland, scrub and woodland habitats.
Kinson Common	LNR	2km north	14.91	The site comprises heathland and woodland habitats. The wet heath on site is of particular interest due to its diverse plant community, including several hundred flower spikes of 3 orchid species along with other less common plants typical of this habitat such as pale butterwort (*Pinguicula lusitanica*) and flea sedge (*Carex pulicaris*).
Talbot Slopes and Cutting	SNCI[8]	0.3km south-west	2.14	Remnants of dry heathland with reptile interest.
Winston Avenue	SNCI	0.7km south-west	1.75	Remnant heath.
Meyrick Park	SNCI	1km south-east	54.1	Semi-natural habitat between golf course fairways.
Turbury Common	SNCI	1.4km north-west	4.47	Wood, scrub and heathy areas.
Branksome Junction	SNCI	1.6km south-west	1.22	Wasteland and woodland with a varied flora.

[8] SNCI: Sites of Nature Conservation Interest

All identified designated sites for nature conservation are located at a significant distance from the Talbot Campus and Wallisdown Pavilion and are therefore considered to be of limited relevance to this assessment. However, the significant proportion of nearby designated sites which support heathland habitat is acknowledged and recommendations to trial heathland restoration / creation in certain areas of the site have been outlined in section 5.6.2.

Dorset ecological networks

The data search provided by DERC shows that an area in the far north-west of the Talbot Campus site is highlighted as a 'Higher Potential Network'. The whole of the Wallisdown Pavilion is also highlighted as a 'Higher Potential Network'. Areas of land adjacent to both the north of the Talbot Campus and the east and north-east of the Wallisdown Pavilion are highlighted as 'Existing Networks' and 'Higher Potential Networks'. No other ecological networks of relevance to the site were identified.

It is considered that the enhancement recommendations outlined in section 5 will improve and strengthen the identified Dorset ecological networks in the immediate vicinity of the site, particularly the recommended measures to enhance and expand the existing woodland habitat in the north of the Talbot Campus site as detailed in section 5.8.

Protected, notable and invasive species records

The results of the DERC data search for records of protected, notable and invasive species within a 2-kilometre radius of Talbot Campus are presented in table 4 below.

Table 4: DERC records of protected, notable and invasive species within a 2-kilometre radius of Talbot Campus

Common name	Scientific name	Status	Records
Reptiles and amphibians			
Slow-worm	*Anguis fragilis*	Schedule 5 WCA[9], UK BAP[10]	774 records dated between 2010 and 2019
Common toad	*Bufo bufo*	Schedule 5 WCA, UK BAP	13 records dated between 2010 and 2018
Grass snake	*Natrix helvetica*	Schedule 5 WCA, UK BAP	39 records dated between 2010 and 2018
Adder	*Vipera berus*	Schedule 5 WCA, UK BAP	702 records dated between 2010 and 2018
Common lizard	*Zootoca vivipara*	Schedule 5 WCA, UK BAP	955 records dated between 2010 and 2020
Birds			
Lesser redpoll	*Acanthis cabaret*	UK BAP, Red List BoCC	1 record dated 2018
Sparrowhawk	*Accipiter nisus*	Amber List BoCC[11]	6 records dated between 2012 and 2016

[9] WCA: The Wildlife and Countryside Act 1981 (as amended)
[10] UK BAP: UK Biodiversity Action Plan species
[11] BoCC: Birds of Conservation Concern list

Common name	Scientific name	Status	Records
Meadow pipit	*Anthus pratensis*	Amber List BoCC	3 records dated between 2010 and 2018
Swift	*Apus apus*	Red List BoCC	14 records dated between 2010 and 2015
Greenfinch	*Chloris chloris*	Red List BoCC	9 records dated between 2012 and 2015
Black-headed gull	*Chroicocephalus ridibundus*	Amber List BoCC	4 records dated 2014 and 2015
Reed bunting	*Emberiza schoeniclus*	UK BAP, Amber List BoCC	2 records dated 2011 and 2012
Kestrel	*Falco tinnunculus*	Amber List BoCC	4 records dated between 2014 and 2018
Herring gull	*Larus argentatus*	UK BAP, Red List BoCC	2 records dated 2014
Linnet	*Linaria cannabina*	UK BAP, Red List BoCC	1 record dated 2012
House sparrow	*Passer domesticus*	UK BAP, Red List BoCC	23 records dated between 2011 and 2018
Willow warbler	*Phylloscopus trochilus*	Amber List BoCC	2 records dated 2014 and 2016
Dunnock	*Prunella modularis*	UK BAP, Amber List BoCC	8 records dated between 2013 and 2016
Bullfinch	*Pyrrhula pyrrhula*	UK BAP, Amber List BoCC	4 records dated between 2011 and 2018
Firecrest	*Regulus ignicapilla*	Schedule 1 WCA	2 records dated 2016
Starling	*Sturnus vulgaris*	UK BAP, Red List BoCC	9 records dated between 2012 and 2018
Redwing	*Turdus iliacus*	Schedule 1 WCA, Amber List BoCC	7 records dated between 2016 and 2018
Song thrush	*Turdus philomelos*	UK BAP, Amber List BoCC	6 records dated between 2012 and 2017
Fieldfare	*Turdus pilaris*	Schedule 1 WCA, Red List BoCC	3 records dated 2013 and 2018
Mistle thrush	*Turdus viscivorus*	Red List BoCC	3 records dated 2016 and 2017
Terrestrial mammals			
West European hedgehog	*Erinaceus europaeus*	UK BAP	45 records dated between 2012 and 2020
Eurasian badger	*Meles meles*	PBA[12]	38 records dated between 2010 and 2020
Bats			
Serotine bat	*Eptesicus serotinus*	Schedule 2 Habs Regs, Schedule 5 WCA	19 records dated between 2010 and 2020
Whiskered bat	*Myotis mystacinus*	Schedule 2 Habs Regs, Schedule 5 WCA	1 record dated 2013
Leisler's bat	*Nyctalus leisleri*	Schedule 2 Habs Regs, Schedule 5 WCA	10 records dated between 2011 and 2018

[12] PBA: Protection of Badgers Act

Common name	Scientific name	Status	Records
Noctule bat	*Nyctalus noctule*	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	24 records dated between 2010 and 2019
Common pipistrelle	*Pipistrellus pipistrellus*	Schedule 2 Habs Regs, Schedule 5 WCA	65 records dated between 2010 and 2020
Soprano pipistrelle	*Pipistrellus pygmaeus*	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	28 records dated between 2011 and 2020
Pipistrelle bat species	*Pipistrellus sp.*	Schedule 2 Habs Regs, Schedule 5 WCA	4 records dated 2017 and 2018
Brown long-eared bat	*Plecotus auritus*	Schedule 2 Habs Regs, Schedule 5 WCA, UK BAP	4 records dated 2011 and 2020
Long-eared bat species	*Plecotus sp.*	Schedule 2 Habs Regs, Schedule 5 WCA	8 records dated between 2012 and 2018
Invertebrates			
Small heath	*Coenonympha pamphilus*	UK BAP	4 records dated between 2010 and 2014
Wall butterfly	*Lasiommata megera*	UK BAP	6 records dated between 2011 and 2014
Stag beetle	*Lucanus cervus*	Annex II[13], Schedule 5 WCA, UK BAP	283 records dated between 2013 and 2019
Vascular plants			
Mossy stonecrop	*Crassula tillaea*	Nationally-scarce	2 records dated 2012 and 2015
Hairy bird's-foot-trefoil	*Lotus subbiflorus*	Nationally-scarce	1 record dated 2017
Clustered clover	*Trifolium glomeratum*	Nationally-scarce	1 record dated 2012
Invasive non-native plants			
Three-cornered garlic	*Allium triquetrum*	Schedule 9 WCA	5 records dated between 2014 and 2020
Wall cotoneaster	*Cotoneaster horizontalis*	Schedule 9 WCA	1 record dated 2015
Himalayan cotoneaster	*Cotoneaster simonsii*	Schedule 9 WCA	1 record dated 2016
Montbretia	*Crocosmia x crocosmiiflora*	Schedule 9 WCA	2 records dated 2012 and 2017
Variegated yellow archangel	*Lamiastrum galeobdolon ssp. argentatum*	Schedule 9 WCA	1 record dated 2015
Himalayan balsam	*Impatiens glandulifera*	Schedule 9 WCA	2 records dated 2015 and 2018
Rhododendron	*Rhododendron ponticum*	Schedule 9 WCA	8 records dated between 2012 and 2020
Invasive non-native fauna			
American mink	*Neovison vison*	Schedule 9 WCA	1 record dated 2010
Eastern grey squirrel	*Sciurus carolinensis*	Schedule 9 WCA	18 records dated between 2010 and 2020

[13] Annex II: species of conservation importance listed under Annex II of the EC Habitats Directive

These records of protected, notable and invasive species in the vicinity of the site increase the likelihood of them being present where suitable habitat is identified during the walkover field survey.

4.2 Field survey

4.2.1 Vegetation

The accompanying phase 1 habitat maps provided as appendix II depicts the habitats encountered and highlights areas of particular interest with target notes. Photographs of the site are included as appendix III.

Talbot Campus

The Talbot Campus comprised a mostly urbanised site dominated by buildings, infrastructure and hard and soft landscaping, together with some limited areas of semi-natural habitat. The habitats and features recorded on site included buildings and structures, amenity grassland, areas sown with wildflower seed mixtures, rough grassland, ruderal vegetation, ornamental planting, scrub, hedgerows, woodland, scattered trees, hardstanding, and bare ground.

Descriptions of the habitats and features encountered during the survey are provided below:

Buildings and structures (Target notes 1 - 3)

The Talbot Campus includes a wide range of buildings which provide education and research facilities (TN1), as well as student accommodation (TN2), sports facilities, cafeterias, and other facilities associated with the general operations and functioning of the university. All of the buildings on site are modern (with some, such as the Poole Gateway building (TN3), having been very recently constructed) and many consist of large, multi-storeyed structures. Some sections of roofing on the Students Union building and the Fusion building had a green roof covering consisting of a sedum blanket type green roofing layer. The green roofing layer on the Fusion building was observed during the walkover survey and was noted to be in good condition, with only some minor colonisation by weeds.

In addition to the main buildings present on the Talbot Campus site, there were also various ancillary structures recorded, including essential utilities structures, bike storage units, and storage containers.

Further recommendations are provided in section 5.1.

Amenity grassland (Target notes 4 & 5)

Sections of amenity grassland were recorded in various locations across the Talbot Campus (TN4). For the most part, these sections of grassland comprised regularly-mown, species-poor, grass-dominated swards, approximately 2.5 to 4 centimetres in average height with the dominant species typically including red fescue (*Festuca rubra*), perennial rye-grass (*Lolium perenne*), meadow-grass (*Poa sp*), white clover (*Trifolium repens*), yarrow (*Achillea millefolium*), black medick (*Medicago lupulina*) and daisy (*Bellis perennis*). However, there was also an element of unimproved acid grassland noted amongst some sections of the amenity swards, especially one section of amenity grassland located adjacent to the sports courts in the south-east of the main campus (TN5) which supported a number of desirable indicator species such as sheep's sorrel (*Rumex acetosella*), bird's-foot (*Ornithopus perpusillus*), prickly sedge (*Carex muricata ssp pairae*) and corky-fruited water-dropwort (*Oenanthe pimpinelloides*). Of particular interest was the presence of the nationally-scarce species hairy bird's-foot-trefoil (*Lotus subbiflorus*) which was recorded in a number of amenity grassland sections within the main campus area. This species is known to occur locally in south-east Dorset and the DERC data search returned one local record of it. A full summary of the species recorded amongst the amenity grassland on site is provided in table 5 below.

Table 5: species recorded within the amenity grassland

Common name	Latin name	Abundance	Status
Bryophytes			
Feather-moss	*Brachythecium sp*	F-O	-
Common feather-moss	*Kindbergia praelonga*	O-R	Common and widespread
Springy turf-moss	*Rhytidiadelphus squarrosus*	F-O	Common and widespread
Grasses, sedges, rushes and horsetails			
Common bent	*Agrostis capillaris*	LD-O	Common and widespread
Soft brome	*Bromus hordeaceus*	LO-R	Common and widespread
Prickly sedge	*Carex muricata ssp pairae*	R	Typically occurs in unimproved acid grassland
Red fescue	*Festuca rubra*	D-A	Common and widespread
Yorkshire-fog	*Holcus lanatus*	O-R	Common and widespread
Perennial rye-grass	*Lolium perenne*	A-F	Common and widespread
Annual meadow-grass	*Poa annua*	O	Common and widespread
Meadow-grass	*Poa sp*	LD-F	-
Squirreltail fescue	*Vulpia bromoides*	LO-R	Typically occurs in short grasslands and on disturbed ground
Herbaceous plants			
Yarrow	*Achillea millefolium*	F	Common and widespread
Scarlet pimpernel	*Anagalis arvensis*	R	Common and widespread
Daisy	*Bellis perennis*	LA-F	Common and widespread
Wild carrot	*Daucus carota*	O-R	Common and widespread
Hairy tare	*Ervilia hirsuta*	R	Common and widespread

Common name	Latin name	Abundance	Status
Dove's-foot crane's-bill	*Geranium molle*	O-R	Common and widespread
Common ragwort	*Jacobaea vulgaris*	R	Common and widespread
Oxeye daisy	*Leucanthemum vulgare*	R	Common and widespread
Common bird's-foot-trefoil	*Lotus corniculatus*	LO-R	Typically occurs in unimproved grasslands
Hairy bird's-foot-trefoil	*Lotus subbiflorus*	R	A nationally-scarce species that typically occurs in dry, unimproved grasslands near the coast
Corky-fruited water-dropwort	*Oenanthe pimpinelloides*	R	Typically occurs in unimproved grasslands in southern England
Rough hawkbit	*Leontodon hispidus*	LO-R	Typically occurs in unimproved grasslands
Black medick	*Medicago lupulina*	A-F	Common and widespread
Buck's-horn plantain	*Plantago coronopus*	F-O	Typically occurs in short grasslands and on disturbed ground
Ribwort plantain	*Plantago lanceolata*	O	Common and widespread
Greater plantain	*Plantago major*	LO-R	Common and widespread
Creeping cinquefoil	*Potentilla reptans*	R	Common and widespread
Selfheal	*Prunella vulgaris*	R	Common and widespread
Sheep's sorrel	*Rumex acetosella*	LO-R	Typically occurs in dry acid grassland and dry heathland
Field madder	*Sherardia arvensis*	R	Typically occurs in short grasslands, arable and on disturbed ground
Dandelion	*Taraxacum* agg.	O	Common and widespread
Hop trefoil	*Trifolium campestre*	O-R	Typically occurs in unimproved grasslands
Lesser trefoil	*Trifolium dubium*	LO-R	Common and widespread
White clover	*Trifolium repens*	A-F	Common and widespread
Knotted clover	*Trifolium striatum*	R	Typically occurs in short unimproved grassland on free-draining sandy soil
Subterranean clover	*Trifolium subterraneum*	R	Typically occurs in short unimproved grassland on free-draining sandy soil
Wall speedwell	*Veronica arvensis*	LO-R	Typically occurs in short grasslands, arable and on disturbed ground

Further recommendations are provided in section 5.2.

Areas sown with wildflower seed mixtures (Target note 6)

Sections of the soft landscaping on site apparently having been sown with a wildflower seed mixture were recorded around the Poole Gateway building, with some other minor sections of similar vegetation recorded adjacent to the Christchurch House building and in the south of the site adjacent to Gillett Road. These areas of sown wildflower grassland generally comprised mixtures of native calcareous grassland species, including salad burnet (*Poterium sanguisorba*), lady's bedstraw (*Galium verum*), kidney vetch (*Anthylis vulneraria*) and sainfoin (*Onobrychis viciifolia*), together with cornfield annuals, such as cornflower (*Centaurea cyanus*) and corncockle (*Agrostemma githago*), and some non-native herbaceous species, including lucerne (*Medicago sativa*) and non-native toadflax species (*Linaria spp*). A full summary of the species recorded is provided in table 6 below.

Table 6: species recorded within the areas sown with wildflower seed mixtures

Common name	Latin name	Abundance	Status
Grasses, sedges, rushes and horsetails			
Creeping bent	*Agrostis stolonifera*	F-O	Common and widespread
False oat-grass	*Arrhenatherum elatius*	LF-R	Common and widespread
Soft brome	*Bromus hordeaceus*	LF-R	Common and widespread
Crested dog's-tail	*Cynosurus cristatus*	LF-R	Typically occurs in unimproved and richer examples of semi-improved grassland
Cock's-foot	*Dactylis glomerata*	LF-O	Common and widespread
Bearded couch	*Elymus caninus*	LO-R	Common and widespread
Red fescue	*Festuca rubra*	D-F	Common and widespread
Yorkshire-fog	*Holcus lanatus*	LF-O	Common and widespread
Perennial rye-grass	*Lolium perenne*	LD-O	Common and widespread
Timothy	*Phleum sp*	LO-R	-
Meadow-grass	*Poa sp*	LF-O	-
Rough meadow-grass	*Poa trivialis*	LO-R	Common and widespread
Herbaceous plants and scrub seedlings			
Yarrow	*Achillea millefolium*	F	Common and widespread
Corncockle	*Agrostemma githago*	LO-R	A formerly common archaeophyte associated with arable land, now very rare in the wild
Scarlet pimpernel	*Anagalis arvensis*	LF-R	Common and widespread
Kidney vetch	*Anthylis vulneraria*	LO-R	Typically occurs in unimproved calcareous grassland
Cornflower	*Centaurea cyanus*	LO-R	A formerly common archaeophyte associated with arable land
Common knapweed	*Centaurea nigra*	LF-R	Typically occurs in unimproved grasslands
Common mouse-ear	*Cerastium fontanum*	O-R	Common and widespread
Creeping thistle	*Cirsium arvense*	LF-O	Common and widespread

Common name	Latin name	Abundance	Status
Spear thistle	*Cirsium vulgare*	LO-R	Common and widespread
Wild carrot	*Daucus carota*	F	Common and widespread
Viper's-bugloss	*Echium vulgare*	LO-R	Typically occurs in unimproved grasslands and on disturbed ground
Petty spurge	*Euphorbia peplus*	LO-R	Common and widespread
Hedge bedstraw	*Galium mollugo*	O-R	Common and widespread
Lady's bedstraw	*Gallium verum*	LF-R	Typically occurs in unimproved calcareous grassland
Cut-leaved crane's-bill	*Geranium dissectum*	R	Common and widespread
Hedgerow crane's-bill	*Geranium pyranaicum*	R	Common and widespread
Perforate St John's wort	*Hypericum perforatum*	LO-R	Common and widespread
Cat's-ear	*Hypochaeris radicata*	O-R	Common and widespread
Common ragwort	*Jacobaea vulgaris*	O-R	Common and widespread
Nipplewort	*Lapsana communis*	LO-R	Common and widespread
Oxeye daisy	*Leucanthemum vulgare*	O-R	Common and widespread
Common bird's-foot-trefoil	*Lotus corniculatus*	LO-R	Typically occurs in unimproved grasslands
Musk mallow	*Malva moschata*	R	Typically occurs in unimproved calcareous grassland
Common mallow	*Malva sylvestris*	R	Common and widespread
Lucerne	*Medicago sativa*	LO-R	A naturalised neophyte
Sainfoin	*Onobrychis viciifolia*	LO-R	Typically occurs in unimproved calcareous grassland
Corn poppy	*Papaver rhoeas*	F-O	A common and widespread archaeophyte
Bristly oxtongue	*Picris echioides*	R	Common and widespread
Ribwort plantain	*Plantago lanceolata*	O	Common and widespread
Salad burnet	*Poterium sanguisorba*	LO-R	Typically occurs in unimproved calcareous grassland
Selfheal	*Prunella vulgaris*	R	Common and widespread
Meadow buttercup	*Ranunculus acris*	O-R	Common and widespread
Curled dock	*Rumex crispus*	R	Common and widespread
Broad-leaved dock	*Rumex obtusifloius*	LO-R	Common and widespread
Red campion	*Silene dioica*	R	Common and widespread
Hedge mustard	*Sisymbrium officinale*	LO-R	Common and widespread
Dandelion	*Taraxacum* agg.	O	Common and widespread
Red clover	*Trifolium pratense*	LO-R	Common and widespread
White clover	*Trifolium repens*	O-R	Common and widespread
Gorse	*Ulex europaeus*	LO-R	Common and widespread
Tufted vetch	*Vicia cracca*	LO-R	Common and widespread
Common vetch	*Vicia sativa*	LO-R	Common and widespread

Further recommendations are provided in section 5.3.

Rough grassland (Target note 7)

Small sections of rough grassland were recorded in the north of the site between the edges of the hardstanding vehicle parking areas and the northern area of woodland habitat. These sections of rough grassland comprised overgrown, species-poor swards dominated by coarse grass species, including false oat-grass (*Arrhenatherum elatius*), cock's-foot (*Dactylis glomerata*) and perennial rye-grass (*Lolium perenne*), together with common species and ruderals, such as ribwort plantain (*Plantago lanceolata*), black medick (*Medicago lupulina*) and Canadian fleabane (*Erigeron canadensis*), and some encroachment of bramble (*Rubus fruticosus* agg.) and ivy (*Hedera helix*).

Further recommendations relating to expansion of woodland habitat into these areas of rough grassland are provided in section 5.8.2.

Ruderal vegetation (Target notes 8 & 9)

Areas of ruderal vegetation were recorded within the south-east of the campus, the main area dominated by this vegetation type was a fenced-off section of land that was used as part of the construction site for the Poole Gateway building and which is currently being reserved for future development (TN8). The ruderal vegetation comprised dominant Yorkshire-fog (*Holcus lanatus*) and Canadian fleabane, abundant white clover (*Trifolium repens*), common ragwort (*Jacobaea vulgaris*) and ribwort plantain (*Plantago lanceolata*), locally-frequent opium poppy (*Papaver somniferum*), frequent red clover (*Trifolium pratense*), purple toadflax (*Linaria purpurea*), creeping buttercup (*Ranunculus repens*) and scarlet pimpernel (*Anagalis arvensis*), and occasional wall barley (*Hordeum murinum*), corn poppy (*Papaver rhoeas*), shepherd's-purse (*Capsella bursa-pastoris*), dove's-foot crane's-bill (*Geranium molle*), beaked hawk's-beard (*Crepis vesicaria*), smooth sowthistle (*Sonchus olearaceus*), cat's-ear (*Hypochaeris radicata*), ivy-leaved speedwell (*Veronica serplylifolia*), buck's-horn plantain (*Plantago coronopus*), red fescue, perennial rye-grass, black medick, willowherb (*Epilobium sp*), wild carrot (*Daucus carota*), prickly lettuce (*Lactuca serriola*), cock's-foot, dock (*Rumex sp*), yarrow and hop trefoil (*Trifolium campestre*), and rare rough hawkbit (*Leontodon hispidus*) and hedgerow crane's-bill (*Geranium pyranaicum*).

A narrow strip of ruderal vegetation occurring between a gravel parking area and Gillett Road (TN9) was identified to be notable due to the presence of the nationally-scarce species hairy bird's-foot-trefoil in occasional abundance here.

The main area occupied by ruderal vegetation on-site is currently reserved for future development, therefore no further recommendations are made in relation to this area. However, further recommendations are provided in relation to the narrow strip of ruderal vegetation supporting hairy bird's-foot-trefoil in section 5.4.

Ornamental planting (Target note 10 & 11)

A wide variety of ornamental planting was recorded across the site (TN10), the majority of this planting comprised open beds at ground level integrated within the surrounding hard landscaping and infrastructure, although there were also a low number of small, free-standing planters as well. In addition to this, there were a number of metal planters recorded on the accessible roof terrace of the Fusion Building, there was also some evidence of on-site composting and use of a polytunnel and a greenhouse in the north of the site (TN11).

A considerably wide range of ornamental species were recorded amongst the planted areas on site, these included hebe (*Hebe spp*), shrub ragwort (*Brachyglottis* x *jubar* or *Brachyglottis* 'Sunshine'), mahonia (*Mahonia sp*), cinquefoil (*Potentilla sp*), red-hot poker (*Kniphofia spp*), cabbage-palm (*Cordyline australis*), allium (*Allium sp*), moor grass (*Molinia sp*), spurge (*Euphorbia sp*), elephant-ears (*Bergenia sp*), ninebark (*Physocarpus sp*), beech (*Fagus sp*), gorse (*Ulex spp*), broom (*Cytisus sp*), heather (*Erica sp*), roses (*Rosa spp*), dogwood (*Cornus sp*), raspberry (*Rubus idaeus*), gooseberry (*Ribes uva-crispa*), hazel (*Corylus sp*), honeysuckles (*Lonicera spp*), bottlebrush (*Callistemon sp*), stonecrop (*Hylotelephium sp*), sedge (*Carex sp*), elder (*Sambucus sp*), St John's wort (*Hypericum sp*), ivy (*Hedera spp*), phormium (*Phormium sp*), fescue (*Festuca sp*), lavender (*Lavandula sp*), snowberry (*Symphoricarpos sp*), bamboo (*Bambusoideae sp*), rosemary (*Salvia rosmarinus*), maples (*Acer spp*), vervain (*Verbena sp*), ornamental sage (*Salvia sp*), Russian sage (*Perovskia sp*), pampas grass (*Cortaderia sp*), iris (*Iris sp*), agapanthus (*Agapanthus sp*), banana (*Musa sp*), yew (*Taxus sp*), wood fern (*Dryopteris sp*), shield fern (*Polystichum sp*), cotoneaster (*Cotoneaster sp*), montbretia (*Crocosmia sp*), viburnum (*Viburnum sp*), cotton lavender (*Santolina sp*), tansy (*Tanacetum sp*), poppy (*Papaveraceae sp*), coneflower (*Echinacea sp*), hosta (*Hosta sp*), cardoon (*Cynara cardunculus*), persicaria (*Persicaria sp*) and golden oats (*Stipa gigantea*).

Common weeds and scrub recorded amongst the ornamental planting included smooth sowthistle, cleavers (*Galium aparine*), prickly lettuce, ivy, field horsetail (*Equisetum arvense*), greater plantain (*Plantago major*), herb Robert (*Geranium robertianum*), hedge bindweed (*Calystegia sepium*), purple toadflax, corn poppy, black medick, butterfly-bush (*Buddleja davidii*), gorse (*Ulex europaeus*), pedunculate oak seedlings (*Quercus robur*), field maple seedlings (*Acer campestre*), and sweet chestnut seedlings (*Castinea sativa*).

The condition of the ornamental planting on site varied considerably, some planting beds were in very good condition and well-filled with a diverse array of different species, whilst other beds were in distinctly poor condition with substantial gaps in the planting as well as significant colonisation by weeds and scrub. Some planting beds, for example in the southern carpark and in the far east of the site, appeared to have been largely taken over by gorse scrub. It was also noted during the survey that students and other users of the site were regularly walking into and through some of the planting beds. The ornamental planters on the roof terrace of the Fusion Building were in distinctly poor condition and had been largely colonised by weeds.

Further recommendations are provided in section 5.5.

Scrub (Target notes 12 - 15)

A number of scrub stands of limited extent were recorded across the campus, including a narrow, continuous band of mature scrub with scattered trees along the south-western boundary of the site (abutting the boundary fence line to the west of the student accommodation buildings) (TN12), an isolated section of mature scrub with scattered trees adjacent to the south of the student accommodation area (TN13), and stands of dense gorse scrub which appeared to have colonised over ornamental planting beds that were not being regularly maintained both within the far southern carpark area (TN14) and in the east of the site (TN15). Elsewhere on the campus there were only very limited stands of scattered scrub. The scrub species recorded on site included bramble, gorse, butterfly-bush, wild plum (*Prunus domestica*), pedunculate oak, hawthorn (*Crataegus monogyna*), aspen (*Populus temula*), hazel (*Corylus avellana*), dogrose (*Rosa canina*), box-leaved honeysuckle (*Lonicera pileata*), field maple and holm oak (*Quercus ilex*).

A stand of dense gorse scrub in the east of the site (TN15) was notable due to the presence of regenerating bell heather (*Erica cinerea*) on the fringes of the scrub stand.

Further recommendations are provided in section 5.6.

Hedgerows (Target note 16, H1 and H2)

Two short sections of recently planted native hedgerow were recorded in the south of the campus site adjacent to Gillett Road. Hedgerow H1 was relatively well established and was approximately 2 metres in average height and 1 to 1.5 metres in average width. Hawthorn was the dominant constituent of this hedgerow together with lesser amounts of blackthorn (*Prunus spinosa*), hornbeam and gorse. The field layer was largely dominated by ivy, together with some bramble colonisation. Hedgerow H2 comprised a short section of very recently planted native hedgerow, approximately 0.75 metres in average height and 0.5 metres in average width, this hedgerow planting comprised a mix of hawthorn, blackthorn and field maple.

Further recommendations are provided in section 5.7.

Woodland (Target note 17)

Stands of woodland habitat were recorded in the north of the site and these essentially formed a continuous band alongside the majority of the northern boundary. This woodland habitat comprised a species-poor community of mostly broad-leaved tree species (native and non-native species), together with some Scots pine (*Pinus sylvestris*). The canopy was generally dominated by mature pedunculate oaks occurring together with mixtures of sycamore, ash (*Fraxinus excelsior*), aspen, lime, whitebeam, sweet chestnut Norway maple (*Acer platanoides*) and rowan. The understorey comprised a varying mix of woody species, including holly (*Ilex aquifolium*), rowan, hazel, young pedunculate

oaks, cherry (*Prunus sp*), sycamore, aspen and wayfaring tree (*Viburnum lantana*). However, the non-native invasive species cherry laurel (*Prunus laurocerasus*) was noted to be dominant through numerous sections of the woodland understorey and forming dense thickets. The woodland field layer was distinctly species poor throughout, ivy was generally the dominant field layer species occurring together with various common shade tolerant species and ruderals, including bramble, wood avens (*Geum urbanum*), wood dock (*Rumex sanguineus*), herb Robert, bracken (*Pteridium aquilinum*), cock's-foot, cleavers and Yorkshire-fog, as well as a number of garden escapes including cotoneaster (*Cotoneaster sp*), non-native honeysuckles (*Lonicera spp*) and bamboo. A full species list for the woodland habitat is provided in table 7 below.

In addition to the above, it was also noted that sections of cypress (*Cupressus sp*) hedging had been planted along the northern edges of the woodland habitat (presumably to form a natural barrier and prevent access into the woodland areas), however this was largely in poor condition with numerous substantial gaps present. The woodland habitat was also identified to be distinctly gappy and lacking understorey cover in places (particularly in the north-west of the site). Some scattered litter was also recorded through the areas of woodland habitat.

Table 7: Species recorded within the woodland habitat

Common name	Latin name	Abundance	Status
Canopy species			
Norway maple	*Acer platanoides*	LO-R	A naturalised neophyte
Sycamore	*Acer pseudoplatanus*	F-O	Fully naturalised neophyte
Sweet chestnut	*Castinea sativa*	R	Common and widespread
Ash	*Fraxinus excelsior*	R	Common and widespread
Scots pine	*Pinus sylvestris*	O	Widely naturalised, although not native to southern England
Aspen	*Populus tremula*	F-O	Common and widespread
Pedunculate oak	*Quercus robur*	D	Common and widespread
Whitebeam	*Sorbus aria* agg.	O-R	-
Rowan	*Sorbus aucuparia*	R	Common and widespread
Lime	*Tilia sp*	O-R	-
Understorey species			
Sycamore	*Acer pseudoplatanus*	O-R	Fully naturalised neophyte
Hazel	*Corylus avellana*	O-R	Common and widespread
Cypress	*Cupressus sp*	Hedging along northern edges of the woodland habitat	-
Ash	*Fraxinus excelsior*	R	Common and widespread
Holly	*Ilex aquifolium*	LF-R	Common and widespread
Aspen	*Populus tremula*	LO-R	Common and widespread
Cherry laurel	*Prunus laurocerasus*	LD-O	A non-native invasive species
Cherry	*Prunus sp*	O-R	-
Pedunculate oak	*Quercus robur*	O	Common and widespread

Common name	Latin name	Abundance	Status
saplings			
Whitebeam	*Sorbus aria* agg.	O-R	-
Rowan	*Sorbus aucuparia*	O-R	Common and widespread
Gorse	*Ulex europaeus*	LO-R	Common and widespread
Wayfaring tree	*Viburnum lantana*	R	Common and widespread
Field layer species			
False oat-grass	*Arrhenatherum elatius*	LO-R	Common and widespread
Bamboo	*Bambusoideae sp*	R/L	A non-native garden escape
Rough-stalked feather-moss	*Brachythecium rutabulum*	O	Common and widespread
Cotoneaster	*Cotoneaster sp*	R	A non-native garden escape
Cock's-foot	*Dactylis glomerata*	LO-R	Common and widespread
Red fescue	*Festuca rubra*	LF-R	Common and widespread
Cleavers	*Galium aparine*	O	Common and widespread
Herb Robert	*Geranium robertianum*	O-R	Common and widespread in woodlands
Wood avens	*Geum urbanum*	LF-O	Common and widespread
Ivy	*Hedera helix*	D	Common and widespread
Yorkshire-fog	*Holcus lanatus*	LF-O	Common and widespread
Common feather-moss	*Kindbergia praelonga*	O	Common and widespread
Nipplewort	*Lapsana communis*	O-R	Common and widespread
Honeysuckles	*Lonicera spp*	R	Non-native garden escapes
Rough meadow-grass	*Poa trivialis*	O	Common and widespread
Polypody	*Polypodium sp*	R	-
Bracken	*Pteridium aquilinum*	R	Common and widespread
Bramble	*Rubus fruticosus* agg.	LF-O	Common and widespread
Wood dock	*Rumex sanguineus*	R	Common and widespread
Dandelion	*Taraxacum* agg.	O-R	Common and widespread

Further recommendations are provided in section 5.8.

Scattered trees (Target note 18)

A considerable number of scattered trees were recorded throughout the Talbot Campus, these comprised a mixture of both native and non-native ornamental species of varying growth stages ranging from young to mature. Species recorded included pedunculate oak, hornbeam (*Carpinus betulus*), ash (*Fraxinus sp*), willows (*Salix spp*), conifers (*Pinophyta spp*), palm (*Trachycarpus sp*), sycamore (*Acer pseudoplatanus*), lime (*Tilia sp*), Norway maple (*Acer platinoides*), alder (*Alnus sp*), cherry (*Prunus sp*), beech (*Fagus spp*), field maple, rowan (*Sorbus aucuparia*), silver birch (*Betula pendula*) and hawthorn (*Crataegus sp*).

The scattered trees on site largely comprise unexceptional specimens of common native species and ornamental species, they are considered to be of low ecological value, but

they do offer nature-based solutions within an urban environment. Further recommendations are provided in section 5.9.

Bare ground (Target notes 19 and 20)

Areas of bare ground recorded on site included a bare gravel parking area in the south of the campus, and some minor gravelled margins within the far southern car park area.

No further actions are recommended.

Hardstanding (Target note 21)

The remaining areas of the site all largely comprised hardstanding which formed the site access arrangements and vehicle parking areas, they consisted of tarmac, concrete, brick, and paving slabs.

No further actions are recommended.

Wallisdown Pavilion

The Wallisdown Pavilion mostly comprised an expanse of amenity grassland primarily used as sports pitches. Other habitats and features recorded on the site included ruderal vegetation / rough grassland, ornamental planting, scrub, scattered trees, buildings and structures, bare ground and hardstanding.

As the Wallisdown Pavilion is not owned by the university but is currently leased from the local council, it is therefore not possible to implement a comprehensive suite of ecological enhancement measures on this site. Therefore, only a low number of basic enhancement recommendations have been provided for this site in section 5.11.

Descriptions of the habitats and features encountered during the survey are provided below.

Amenity grassland (Target note 1)

The amenity grassland recorded across the site comprised a regularly-mown, species-poor, grass-dominated sward, approximately 2.5 to 4.5 centimetres in average height. Species recorded included dominant perennial rye-grass and common bent (*Agrostis capillaris*), abundant white clover and meadow-grass (*Poa sp*), frequent red fescue, soft brome (*Bromus hordeaceus*), daisy and greater plantain, frequent to occasional yarrow, ribwort plantain and buck's-horn plantain (*Plantago coronopus*), occasional cat's-ear, dandelion (*Taraxacum* agg.), red clover, wild carrot (*Daucus carota*), hop trefoil (*Trifolium campestre*) and lesser trefoil (*Trifolium dubium*), and rare hare's-foot trefoil (*Trifolium arvense*) and sheep's sorrel.

Further recommendations are provided in section 5.11.

Tall ruderal vegetation / rough grassland (Target note 2)

A small section of tall ruderal vegetation / rough grassland was recorded in the north-west corner of the site. This vegetation generally comprised a rough and overgrown sward dominated by ruderals and coarse grasses, species recorded included dominant wall barley and Yorkshire-fog, frequent cock's-foot, soft brome and common couch (*Elymus repens*), and occasional cleavers, spear thistle (*Cirsium vulgare*), yarrow, dandelion and ribwort plantain.

No further actions are recommended.

Ornamental planting (Target note 3)

A small section of ornamental planting, comprising dense privet (*Ligustrum sp*) hedging, was recorded in the north-west corner of the site.

No further actions are recommended.

Scrub (Target notes 4)

A narrow band of mixed scrub was recorded alongside the majority of the southern boundary of the site. Species recorded amongst this scrub vegetation included bramble, hazel, holly, field maple, ash, false oat-grass, Yorkshire-fog, bracken (*Pteridium aquilinum*), wood avens (*Geum urbanum*) and sterile brome (*Anisantha sterilis*).

No further actions are recommended.

Scattered trees (Target note 5)

Numerous scattered trees were recorded alongside the northern and western boundaries of the site, and within the scrub band alongside the southern boundary. The trees included a mix of both native and non-native species and the majority were semi-mature specimens. Species recorded included pedunculate oak, ash (*Fraxinus excelsior*), sycamore, sweet chestnut and horse chestnut (*Aesculus hippocastanum*).

No further actions are recommended.

Buildings and structures (Target note 6)

Buildings and structures recorded on site included a modern sports pavilion building constructed of bricks and an electricity utilities structure, both located in the north-west corner of the site, and a small storage container located in the south-east of the site.

No further actions are recommended.

Bare ground and hardstanding (Target note 7 & 8)

An area of bare ground forming part of an outdoor children's play area was recorded in the south of the site (TN7), this area of bare ground comprised a layer of bark chippings.

A small section of tarmac hardstanding was recorded adjacent to the east of the children's play area in the south of the site (TN8).

No further actions are recommended.

4.2.2 Protected species assessment

Badger

The Talbot Campus provides some habitat of suitability for badger, including amenity grassland, areas seeded with wildflower mixtures, rough grassland, ruderal vegetation, scrub, hedgerows and woodland. However, these areas of potentially suitable habitat are all limited in extent and have poor connectivity (both on-site and with the surrounding landscape). The site is also a highly urbanised area with high level of anthropogenic activity and this would very likely dissuade badgers from using the site.

The habitats within the Wallisdown Pavilion site, including the open expanse of amenity grassland, tall ruderal vegetation / rough grassland and scrub, provides suboptimal habitat for badgers. It is considered that badgers could potentially use the site on an occasional basis for night-time foraging and/or commuting. However, the high level of public recreational use on this site would likely dissuade badgers from using it more regularly or attempting to construct setts.

No badger setts or any other evidence of badger activity was identified on either site during the walkover survey. The desk study returned 38 records of badger within two kilometres of the site.

No further actions are recommended.

Bats

<u>Buildings / structures</u>

A detailed bat roost assessment of the buildings and structures on both the Talbot Campus and Wallisdown Pavilion was not undertaken as part of this study. It is considered that the majority of the buildings and structures on both sites are most likely to be of negligible bat roosting potential due to them being mostly modern and in very well-maintained condition, although some of the more dated buildings on the peripheries of the Talbot Campus may have a higher level of bat roosting potential.

No further actions are recommended.

Trees

A detailed bat roost assessment of the trees on both the Talbot Campus and Wallisdown Pavilion was not undertaken as part of this study, however it is considered that there may be potential for some trees on both sites to support roosting bats.

During the walkover survey it was noted that a number of bat roosting features had been installed on trees within the areas of woodland in the north of the Talbot Campus site, however almost all of these were considered to have not been well sited, for example most were not installed high enough above ground level, some did not have a clear flight path, and some were installed directly adjacent to pedestrian footpaths and within reach of people using these footpaths (refer to appendix III). These features all appeared to be good quality, long-lasting Schwegler type bat roosting boxes.

Further recommendations are provided in section 5.10.

Foraging and commuting habitat

The Talbot Campus site provides a number of habitat resources of suitability for foraging and commuting bats, including amenity grassland, areas seeded with wildflower mixtures, rough grassland, ruderal vegetation, ornamental planting, scrub, hedgerows, woodland and scattered trees. However, these areas of potentially suitable habitat are all limited in extent and have poor connectivity (both on-site and within the surrounding landscape). The site is also a mostly urbanised area with high levels of street lighting and anthropogenic activity. Nevertheless, the site is relatively open and is not a densely urbanised area, therefore it is considered that the site may potentially be utilised by low numbers of common bat species for foraging and commuting purposes on a regular basis during the summer activity season.

The habitats within the Wallisdown Pavilion site, including the open expanse of amenity grassland, tall ruderal vegetation / rough grassland, ornamental planting, scrub and scattered trees, provides suboptimal habitat for foraging and commuting bats, although this area would be less exposed to the influence of street lighting and anthropogenic activity at night-time. It is considered that the site may potentially be utilised by low numbers of common bat species for foraging and commuting purposes on a regular basis during the summer activity season.

The various recommended measures outlined in section 5 would significantly enhance the site for foraging and commuting bats in the long-term.

Breeding and foraging birds

The Talbot Campus site provides various habitat resources of suitability for breeding and foraging birds including, buildings and structures, amenity grassland, areas sown with

wildflower seed mixtures, rough grassland, ruderal vegetation, ornamental planting, scrub, hedgerows, woodland and scattered trees. In addition to this, a number of bird nesting boxes and feeders had been sited around the main campus area. However, it was noted during the survey that some of the bird nest boxes had been poorly sited in exposed and inappropriate locations, for example one bird nesting feature specifically designed for swifts (*Apus apus*) and to be installed on buildings had been sited within dense woodland habitat in the north of the site (refer to appendix III). The bird nesting features recorded on site appeared to be good quality and included some long-lasting Schwegler type boxes. It is considered that the site may potentially support a range of common and widespread bird species (including both resident and migrant species) all year round. However, due to the mostly urbanised nature of the site and high levels of anthropogenic activity, it is therefore considered unlikely that the site is used extensively by birds for nesting purposes.

The Wallisdown Pavilion site provides a number of habitat resources of suitability for breeding and foraging birds including, buildings and structures, amenity grassland, tall ruderal vegetation / rough grassland, ornamental planting, scrub and scattered trees. However, these habitats are all generally considered to be of low value for breeding and foraging birds due to their limited extent and suboptimal condition. The site is therefore only considered likely to support low numbers of common and widespread bird species.

The various recommended measures outlined in section 5 would significantly enhance the site for nesting and foraging birds in the long-term. More specific recommendations relating to bird nesting features are provided in section 5.10.

Great crested newt

Aquatic habitat

No aquatic habitat that could potentially support great crested newt was identified on either the Talbot Campus or the Wallisdown Pavilion.

A review of online mapping identified one potentially suitable waterbody approximately 260 metres to the north of the Talbot Campus site and one potentially suitable waterbody located approximately 435 metres to the south-west of the Wallisdown Pavilion site. It is considered that there is generally poor connectivity of terrestrial habitat between the sites and these identified waterbodies due to the presence of substantial urban development and infrastructure across the local area.

Terrestrial habitat

The Talbot Campus site provides potentially suitable terrestrial habitat for great crested newt, including amenity grassland, areas seeded with wildflower mixtures, rough grassland, ruderal vegetation, ornamental planting, scrub, hedgerows and woodland. However, these areas of potentially suitable habitat are all limited in extent and have poor connectivity (both on-site and with the surrounding landscape).

The Wallisdown Pavilion site also provides suitable terrestrial habitat for great crested newt in the form of amenity grassland, tall ruderal vegetation / rough grassland, ornamental planting and scrub. However, these habitats are all generally considered to be suboptimal as terrestrial habitat for great crested newt and the site is largely surrounded by urban development and infrastructure.

Data search

No records of great crested newt were returned in the DERC data search for the area and a review of the MAGIC website identified no mitigation licences or Class Survey licence returns for the species within the study area and zone of influence.

It is considered unlikely that great crested newt is present within the study area, no further action is recommended.

Hazel dormouse

The Talbot Campus provides a limited amount of suboptimal habitat for hazel dormouse, including stands of scrub, native hedgerow planting and stands of woodland. However, these areas of potentially suitable habitat are all limited in extent and have poor connectivity (both on-site and within the surrounding landscape).

The Wallisdown Pavilion site is considered to be largely unsuitable for hazel dormouse, with only a very limited amount of scrub alongside the southern boundary offering any potentially suitable habitat.

The DERC data search returned no records of dormice within two kilometres of the site and a review of the MAGIC website revealed no mitigation licences for the species in the local surrounding area.

It is considered highly unlikely that hazel dormouse is present within the study area, no further action is recommended.

Invertebrates

The Talbot Campus and Wallisdown Pavilion may potentially support a wide range of invertebrate species, although it is considered that these would mostly be common and widespread species and it is unlikely that any particularly rare species would be present due to the lack of any especially high value habitats. During the walkover survey of the Talbot Campus two bug hotels were recorded in the north of the site, these were constructed of timber pallets with the gaps filled in with various materials including sticks, logs, garden canes, cardboard, straw and pinecones. It is considered that these bug hotels provide a valuable feature for invertebrates on site offering a refuge and hibernation resource that could be utilised by many different species, particularly winged insect species.

The various recommendations outlined in section 5 would provide substantial long-term benefits and increased habitat resources on site for invertebrates. A number of more specific recommendations to incorporate features for invertebrates within the ornamental planting areas on site are detailed in section 5.5.2.

Reptiles

The Talbot Campus site provides potentially suitable habitat for common UK reptile species, including amenity grassland, areas seeded with wildflower mixtures, rough grassland, ruderal vegetation, ornamental planting, scrub, hedgerows and woodland. These habitats would offer potential foraging resources, basking locations and potential hibernacula. However, these areas of potentially suitable habitat are all generally limited in extent and have poor connectivity (both on-site and within the surrounding landscape).

The Wallisdown Pavilion site offers only a limited amount of very sub-optimal habitat for reptiles, including amenity grassland, tall ruderal vegetation / rough grassland, ornamental planting and scrub.

The DERC data search returned 774 records of slow-worm, 39 records of grass snake, 955 records of common lizard and 702 records of adder, within two kilometres of the site.

It is considered that the Talbot Campus has low potential to support reptiles, whilst the Wallisdown Pavilion is considered to hold negligible potential to support reptiles. The various recommended measures outlined in section 5 would significantly enhance the site for reptiles and provide more areas of suitable habitat in the long-term.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Buildings and structures

5.1.1 Summary of findings

The Talbot Campus includes a wide range of buildings which provide education and research facilities, as well as student accommodation and various other facilities associated with the general operations and functioning of the university. All of the buildings on site are modern and many consist of large, multi-storeyed structures. Some sections of roofing on the Students Union building and the Fusion building had a green roof covering consisting of a sedum blanket type green roofing layer. In addition to the main buildings present on the Campus, there were also various other ancillary structures.

5.1.2 Conclusions and further recommendations

The mostly urbanised nature of the Talbot Campus presents obvious challenges and restrictions in terms of implementing biodiversity enhancement measures, particularly

habitat creation. However, it is considered that the existing buildings and structures on site could present opportunities for biodiversity enhancement, and this has already been demonstrated by the successful implementation of green roofing on two of the buildings.

It is recommended that the potential to install more green roofing on the campus buildings should be explored in detail. It is considered that existing buildings with extensive bare sections of flat roofing would be ideal for further installation of sedum blanket type green roofing (Bauder, 2020).

The further installation of sedum blanket green roofing on the campus buildings is considered to be a good enhancement option for the site as this feature is simple to install and maintain, whilst also providing a range of long-term benefits and nature-based solutions, including increased protection of the existing roof waterproofing, acoustic insulation, aesthetic value, interception/retention of rainwater, improvement of local air quality, mitigation against the urban heat island effect, and an urban habitat resource for invertebrates and birds.

5.2 Amenity grassland

5.2.1 Summary of findings

Sections of amenity grassland were recorded in various locations across the Talbot Campus. For the most part, these sections of grassland comprised regularly-mown, species-poor, grass-dominated swards. However, there was also an element of unimproved acid grassland noted amongst some sections of the amenity swards, especially one section of amenity grassland located adjacent to the sports courts in the south-east of the main campus which supported a number of desirable indicator species. Of particular interest was the presence of the nationally-scarce species hairy bird's-foot-trefoil which was recorded in a number of amenity grassland sections within the main campus area.

5.2.2 Conclusions and further recommendations

It is considered that the existing sections of amenity grassland on site are of botanical value due to the presence of elements of unimproved acid grassland and the nationally-scarce species hairy bird's-foot trefoil. The following recommendations are made to maintain, enhance and maximise the biodiversity value of this habitat resource on site:

- The area of amenity grassland adjacent to the sports courts in the south-east of the main campus (refer to the plan included as appendix IV) should be managed as an unimproved meadow of acid grassland, rather than as an amenity sward. Management of this area should comprise only a single annual hay cut to ground level together with a thorough collection and removal of all arisings in late summer (late August / early September). A second cut and removal of arising should also be considered in early spring (late March / early April) if the sward condition is judged to be sub-optimal and overgrown. This management approach will allow the sward to grow to

its full height during the summer months and enable the desirable indicator species to flower, set seed and proliferate. This management approach will also benefit invertebrates by providing a better sward structure and greater variety of nectar sources throughout the summer season, which in turn would also benefit other fauna that prey on invertebrates, including bats, birds and reptiles.

- It is recommended that the narrow strip of poor amenity grassland located alongside the far eastern boundary of the site should be managed as an area of rough grassland habitat. This would provide a considerably more valuable year-round rough grassland habitat resource for wild fauna, such as bats, birds, invertebrates and reptiles, compared with the existing regularly mown short sward present in this location. Management of rough grassland in this location would consist of a single biannual cut to ground level together with the removal of all arisings in order to maintain the rough sward and prevent scrub establishment.

- It is considered that the areas of poor amenity grassland in the far north of the site, directly adjacent to the stands of woodland, could potentially be replaced with native woodland planting in order to increase the extent of the existing woodland habitat which is considered to be a more valuable feature across the northern areas of the site (refer to section 5.8 and appendix IV).

- All other sections of amenity grassland across the campus should be generally managed as a short sward of between 1 and 3.5 centimetres height and mown at regular intervals using a conventional garden lawn mower with collection bag (this is likely the approach that is currently employed on site and it is recommended that this should continue). This management approach is advised in order to maintain the population of the nationally-scarce species hairy bird's-foot-trefoil on site. This species is an annual which typically favours short, regularly-grazed swards and disturbed ground on well-drained soils as these conditions enable its seeds to establish.

5.3 Areas sown with wildflower seed mixtures

5.3.1 Summary of findings

There were sections of the soft landscaping on site that had apparently been sown with a wildflower seed mixture, these were recorded around the Poole Gateway building, with some other minor sections of similar vegetation recorded adjacent to the Christchurch House building and in the south of the site adjacent to Gillett Road. These areas of sown wildflower grassland generally comprised mixtures of native calcareous grassland species together with cornfield annuals and some non-native herbaceous species.

5.3.2 Conclusions and further recommendations

It is considered that these areas provide a valuable habitat resource on site for wild fauna, including invertebrates, bats, birds, small mammals and possibly reptiles, and make a positive addition to the overall habitat heterogeneity on site.

It is recommended that these areas should be managed via a single annual hay cut to ground level together with a thorough collection and removal of all arisings in late summer (late August / early September). A second cut and removal of arising should also be considered in early spring (late March / early April) if the sward condition is judged to be sub-optimal and overgrown. This management approach will allow the sward to grow to its full height during the summer months which will benefit invertebrates by providing a better sward structure and greater variety of nectar sources throughout the summer season, and this in turn would also benefit other fauna that prey on invertebrates, including bats, birds and reptiles. It will also maintain an attractive natural feature on site with an abundance of wildflowers which users of the site can enjoy each summer season, thereby offering potential well-being and productivity benefits.

5.4 Ruderal vegetation

5.4.1 Summary of findings

A narrow strip of ruderal vegetation occurring between a gravel parking area and Gillett Road was identified to be notable due to the presence of the nationally-scarce species hairy bird's-foot-trefoil in occasional abundance here.

5.4.2 Conclusions and further recommendations

It is recommended that this section of ruderal vegetation should be managed as a short sward of between 1 and 3.5 centimetres height and mown at regular intervals using a conventional garden lawn mower with collection bag. This management approach is advised in order to maintain the population of the nationally-scarce species hairy bird's-foot-trefoil in this particular location. This species is an annual which typically favours short, regularly-grazed swards and disturbed ground on well-drained soils as these conditions enable its seeds to establish.

5.5 Ornamental planting

5.5.1 Summary of findings

A wide variety of ornamental planting was recorded across the site, the majority of this planting comprised open beds at ground level integrated within the surrounding hard landscaping and infrastructure, although there were also a low number of small, free-standing planters as well. In addition to this, there were a number of metal planters on the accessible roof terrace of the Fusion Building and there was also some evidence of on-site composting and use of a polytunnel and a greenhouse in the north of the site.

The condition of the ornamental planting on site varied considerably, some planting beds were in very good condition, whilst other beds were in distinctly poor condition with substantial gaps in the planting and significant colonisation by weeds and scrub. It was also noted that students and other users of the site were regularly walking into and through some of the planting beds. The ornamental planters on the roof terrace of the Fusion Building were in distinctly poor condition and largely colonised by weeds.

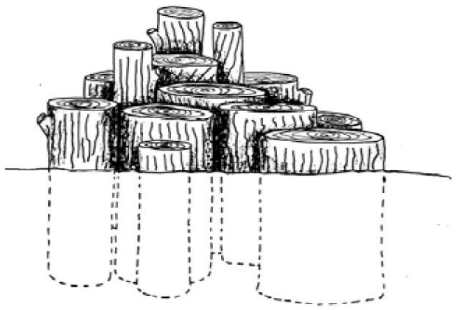
5.5.2 Conclusions and further recommendations

It is considered that the existing ornamental planting on site is a valuable natural feature, however its biodiversity potential is not being fully realised. The following recommendations are made to enhance and maximise the biodiversity value of this habitat resource on site:

- Improved, ongoing maintenance of all the ornamental planting on site by professional gardeners, including care and maintenance of existing ornamental plants, weeding, watering, improving the soil by adding compost and mulching, filling up bare spaces by lifting and dividing existing plants, growing plants from cuttings, and introducing suitable new plants.

- Additional enhancements to the existing ornamental planting on site, including installation of protective edging (e.g. timber, steel or bricks) around the edges of the ground-level planting beds to deter people from walking across them and to increase soil holding capacity, and installation of features amongst the ornamental planting to benefit invertebrates including log / brushwood stacks, loggeries (a group of partially buried logs, refer to diagram 1 below), bug hotels, and/or gabion baskets filled with logs and sticks.

Diagram 1: a 'loggery' or 'log pyramid'



- It is considered that there may be potential for expansion of composting and use of polytunnels and greenhouses on site. This could link with and support the ongoing maintenance of the ornamental planting on site, providing potential sustainability and cost-saving benefits, for example by recycling plant material and producing compost on site, and by using polytunnels and greenhouses for growing seeds and cuttings collected on site rather than having to purchase new plants.

- Although there is already a considerable extent of ornamental planting on site, it is also recommended that opportunities to increase the extent of the ornamental planting within the hard landscaping and infrastructure of the Talbot Campus should be explored, for example by extending existing ornamental beds, creating new beds and/or adding more planters. A greater level of good quality ornamental planting can provide a range of long-term benefits and nature-based solutions, including interception/retention of rainwater, improvement of local air quality, mitigation against the urban heat island effect, increased well-being and productivity of people using the sites, and an urban habitat resource for invertebrates and birds.

Another specific recommendation is that a section of poor condition ornamental planting in the far east of the site should be cleared and used instead for a trial heathland habitat restoration / creation (refer to section 5.6.2 and appendix IV). This will provide a more valuable replacement habitat in this specific location and will help to increase habitat heterogeneity on site.

5.6 Scrub

5.6.1 Summary of findings

A number of scrub stands of limited extent were recorded across the site, including a narrow, continuous band of mature scrub with scattered trees along the south-western boundary of the site (abutting the boundary fence line to the west of the student accommodation buildings), an isolated section of mature scrub with scattered trees adjacent to the south of the student accommodation area, and stands of dense gorse scrub which appeared to have colonised over ornamental planting beds that were not being regularly maintained both within the far southern carpark area and in the east of the site. Elsewhere on the campus there were only very limited stands of scattered scrub.

A stand of dense gorse scrub in the east of the site was notable due to the presence of regenerating bell heather on the fringes of the scrub stand.

5.6.2 Conclusions and further recommendations

It is considered that the existing stands of mature scrub with scattered trees, located both alongside the south-west boundary and to the south of the student accommodation area, are well established habitat features that would certainly provide a valuable resource for various fauna, including bats, birds, invertebrates and small mammals. It is recommended that these mature scrub stands should be retained with only minor maintenance (consisting of trimming and pruning) implemented when required to maintain habitat condition and pedestrian accessways.

Due to the presence of regenerating bell heather on the fringes of the gorse scrub in the east of the site, it is therefore considered worthwhile to trial restoration / creation of dry heathland habitat in areas currently occupied by dense gorse scrub, both within the far southern carpark and in the east of the site. It is recommended that this could be achieved

by initially clearing the existing gorse and any scattered young tree planting in these locations, whilst ensuring that any existing heather growth is retained and preserved, and then rotovating the soil. This would then be followed by ongoing managed regeneration of dry heathland habitat and monitoring for regrowth of heathers (principally ling (*Calluna vulgaris*) and bell heather). The regeneration process would be supplemented by regular weeding and removal of scrub seedlings, as well as plug planting of ling and bell heather to assist in the process. It is considered that other constituent species of dry heathland vegetation, such as bristle bent (*Agrostis curtisii*), bilberry (*Vaccinium myrtillus*), dwarf gorse (*Ulex minor*), wavy hair-grass (*Deschampsia flexuosa*), heath plait-moss (*Hypnum jutlandicum*) and juniper haircap (*Polytrichum juniperinum*), will likely colonise the areas where ling and bell heather are establishing successfully and contribute to the development of a recognisable dry heathland community. If successful, this measure to create heathland would provide a replacement habitat to the existing gorse scrub of substantially higher biodiversity value and would be a significant addition to the overall habitat heterogeneity on the campus. Dry heathland is also known to be a naturally occurring vegetation type on the local sandy soils within the Bournemouth and Poole area, with the desk study identifying numerous designated sites in the area that support heathland habitat.

It is recommended that the narrow band of scrub adjacent to the north of hedgerow H1 should be replaced with native hedgerow planting as outlined in section 5.7 below. This will provide a substantially better-quality habitat feature in the long-term compared with the existing species-poor scrub in this location.

5.7 Hedgerows

5.7.1 Summary of findings

Two short sections of recently planted native hedgerow were recorded in the south of the campus site adjacent to Gillett Road. Hedgerow H1 was relatively well established and was approximately 2 metres in average height and 1 to 1.5 metres in average width. Hedgerow H2 comprised a short section of recently planted native hedgerow, approximately 0.75 metres in average height and 0.5 metres in average width.

5.7.2 Conclusions and further recommendations

It is recommended that when these existing hedgerows on site have become well-established, then a low intensity management regime should be applied. This should comprise light flailing on a biannual basis with the hedgerows sculpted into a rounded A-shape during flailing. It is also recommended that the hedgerows should be pleached by a professional hedge-layer once they have sufficiently matured in order to enhance their long-term structure and connectivity and to prevent the hedgerows from becoming ‘leggy’.

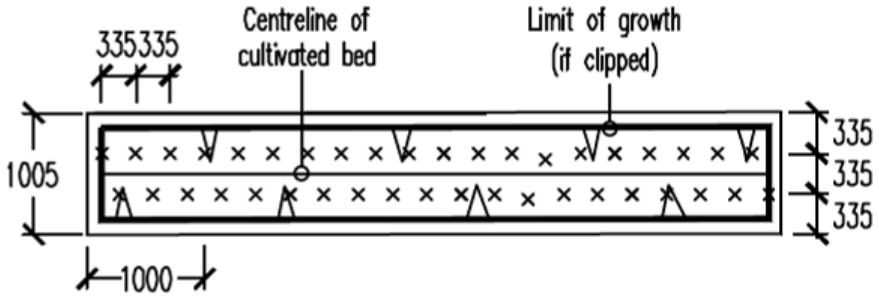
It is recommended that hedgerow H1 should be extended to the north by replacing the existing band of poor scrub with new species-rich, native hedgerow planting. This

hedgerow planting will provide a better-quality and more robust long-term habitat feature to replace the existing low value scrub (refer to appendix IV). It is also recommended that a new native hedgerow should be planted along a section of the far eastern site boundary which is currently marked by only a stock-proof fence line with an adjacent strip of amenity grassland (refer to appendix IV). This would provide an additional high-value habitat feature on site in the long term once it has established. Any new hedgerow planting on site should be in accordance with the recommended species and planting proportions detailed in table 8 below and following the planting pattern illustrated in diagram 2. Once this hedgerow planting has become well-established, it is advised that the same management methods detailed in the above paragraph should be implemented.

Table 8: Species to be included in hedgerow planting

Species	Proportion within hedgerow
Spindle (*Euonymous europaea*)	10%
Hawthorn (*Crataegus monogyna*)	15%
Blackthorn (*Prunus spinosa*)	15%
Field maple (*Acer campestre*)	15%
Dog rose (*Rosa canina*)	5%
Hazel (*Corylus avellana*)	20%
Elder (*Sambucus nigra*)	10%
Crab apple (*Malus sylvestris*)	5%
Guelder-rose (*Viburnum opulus*)	5%

Diagram 2: Planting Pattern



5.8 Woodland

5.8.1 Summary of findings

Stands of woodland habitat were recorded in the north of the site and these essentially formed a continuous band alongside the majority of the northern boundary. This woodland habitat comprised a species-poor community of mostly broad-leaved tree species (native and non-native species), together with some Scots pine. The understorey comprised a varying mix of both native and non-native woody species, however the non-native invasive species cherry laurel was noted to be dominant through numerous

sections of the woodland understorey and forming dense thickets. The woodland field layer was distinctly species poor throughout.

In addition to the above, it was also noted that sections of cypress hedging had been planted along the northern edges of the woodland habitat (presumably to form a natural barrier and prevent access into the woodland areas), however this was largely in poor condition. The woodland habitat was also identified to be distinctly gappy and lacking understorey cover in places (particularly in the north-west of the site).

5.8.2 Conclusions and further recommendations

It is considered that the existing woodland habitat on site is of value as an ecological resource for wild fauna, such as bats, birds and invertebrates, as well as providing a natural buffer against the adjacent busy A3049 Wallisdown Road highway. The condition of the woodland habitat on site is generally very poor, although it is considered that there is significant potential for it to be enhanced and extended.

It is recommended that the existing woodland habitat on site should be enhanced via a number of measures, which includes the following:

- Clearance and removal of all cherry laurel from the understorey layer, including stump grinding and/or treatment with eco plugs. Once this initial clearance is complete, replacement planting should then be undertaken at the earliest opportunity using a suitable mix of native understorey species, including hazel, hawthorn, rowan, silver birch, holly and wayfaring tree. The woodland area should also be monitored on an annual basis to check for any regrowth of cherry laurel, where any regrowth of cherry laurel is encountered this should be removed.

- Planting up gaps within the existing woodland cover using a suitable mix of native woodland species that are typical of a lowland oak woodland community, including pedunculate oak, silver birch, rowan, wild service tree (*Sorbus torminalis*), hazel, hawthorn, holly and wayfaring tree.

- Removal of the existing cypress hedging along the northern edges of the woodland and replacement with native hedgerow planting in accordance with the recommended species and planting proportions detailed in table 8 above and following the planting pattern illustrated in diagram 2 above. Once this hedgerow has sufficiently established after a period of 5 to 7 years, it should then be pleached by a professional hedge-layer to form a natural barrier to protect the northern edge of the woodland and provide a more dense natural buffer against the busy roadside.

- Extension of the existing woodland habitat into adjacent areas of poor amenity grassland and rough grassland to the south. Such planting should use a suitable mix of native woodland species that are typical of a lowland oak woodland community, including pedunculate oak, silver birch, rowan, wild service tree, hazel, hawthorn, holly and wayfaring tree.

- Implementing a suitable low-intensity management regime comprising selective coppicing of up to 5% of understorey growth (only where appropriate and focussing on areas where understorey growth is particularly dense and species-poor), thinning around establishing pedunculate oak trees wherever there is space to promote new canopy standards, as well as repeated clearance and removal of any young specimens of non-native shrub and tree species wherever encountered (the existing mature specimens of non-native trees should be retained). A proportion of any felled woody growth during management should be used to create a number of habitat piles within the woodland area to provide refuges and hibernacula for invertebrates and small mammals. All of the above management measures should improve the overall habitat structure within these woodland stands, increase botanical diversity, and should also facilitate the development of the field layer vegetation by clearing space and allowing greater light penetration to ground level.

It is considered that the successful implementation of the above measures will result in a greatly enhanced woodland habitat resource on site in the long-term, offering more opportunities for wild fauna and providing a more substantial buffer against the adjacent highway. A better quality and extended woodland habitat on site will also offer a higher level of nature based solutions, woodlands are particularly important in terms of the ecosystem services they provide, including interception/retention of rainwater, improvement of local air quality, carbon sequestration, nutrient recycling, improving soil stability, and mitigation against the urban heat island effect.

5.9 Scattered trees

5.9.1 Summary of findings

A considerable number of scattered trees were recorded throughout the Talbot Campus, these comprised a mixture of both native and non-native ornamental species of varying growth stages ranging from young to mature.

5.9.2 Conclusions and further recommendations

It is recommended that more trees should be planted across the Talbot Campus where appropriate, particularly within areas dominated by hard infrastructure. This will increase the level of tree cover across the site which in turn will provide long-term benefits and nature-based solutions, including increased soil stabilisation, interception/retention of rainwater, improvement of local air quality, mitigation against the urban heat island effect, increased well-being and productivity of people using the sites, and increased urban habitat resources for invertebrates, bats and birds.

Potential locations for more tree planting on site should be explored in detail. It is considered that the existing carparking areas on site, particularly the parking areas in the south of the campus, may offer scope to incorporate more tree planting by breaking through small sections of existing hardstanding or bare gravel to create openings to plant

trees into, and by using existing small sections of poor ornamental planting within parking areas to plant more trees into. It is recommended that any new tree planting should utilise a variety of native tree species such as pedunculate oak, beech, hornbeam, field maple, wild cherry (*Prunus avium*), small-leaved lime (*Tilia cordata*), large-leaved lime (*Tilia platyphyllos*), silver birch, wild service tree, crab apple and rowan.

Another specific recommendation is that the group of scattered trees within a strip of amenity grassland in the far east of the site should either be cleared or relocated into proposed hedgerow planting or other suitable locations on site, any planted coniferous trees in this location should be disposed of as these are of limited biodiversity value. The purpose of this measure is to clear this specific area for the creation of rough grassland habitat and native hedgerow planting (refer to sections 5.2.2 and 5.7.2 and appendix IV) which is considered to be a more optimal use of this space in terms of biodiversity.

5.10 Bats and birds (roosting and nesting features)

5.10.1 Summary of findings

During the walkover survey it was noted that a number of bat roosting features had been installed on trees within the areas of woodland in the north of the Talbot Campus site, however almost all of these were considered to have not been well sited. These features appeared to be good quality, long-lasting Schwegler type bat roosting boxes.

During the walkover survey it was also noted that a number of bird nesting boxes and feeders had been sited around the main campus area. However, some of the bird nest boxes had been poorly sited in exposed and/or inappropriate locations. The bird nesting features recorded on site appeared to be good quality and included some long-lasting Schwegler type boxes.

5.10.2 Conclusions and further recommendations

It is considered that both the bat roosting features and bird nesting features identified on site have been mostly installed in poorly chosen, sub-optimal locations/positions and are therefore unlikely to be utilised for their intended purposes. To improve this situation, it is recommended that a licenced bat ecologist should attend site and first check these features for any presence of bats, then (if roosting bats are absent) remove the features from their current locations, clean out the interiors of any debris using a brush, and then re-site them in more optimal, carefully chosen locations. Bat roosting boxes should be sited on suitable mature trees at a substantial height above ground level and with a clear flight path. Bird nesting features should generally be sited in sheltered locations with less disturbance from human activity, at a substantial height above ground level, and with a clear access flight path. The swift nesting feature recorded within the woodland on site should be re-installed on a suitable building as explained in the paragraph below.

N.B implementation of the above recommendations will require a licenced bat ecologist to attend site in order to avoid the risk of any offences relating to European protected species being committed.

Another recommendation to consider in terms of nesting birds is the installation of nesting features for swift (*Apus apus*) on existing buildings within the campus. Swifts will utilise urban environments and it is a nationally declining summer migrant listed as Red in the latest Birds of Conservation Concern (Stanbury et al., 2021). Any swift nesting features should be installed at a minimum height of 5 metres above ground level, on an unobstructed and shaded elevation of a building (beneath eaves or an overhang is ideal). Occupation of installed nesting features for swifts can be greatly speeded up if a recording of Swifts' attraction calls is played in the vicinity of the installed feature early in the nesting season (May – June) and again later on, in the latter part of July, when the juveniles are looking for places to nest in the following year (Swift Conservation, 2013). It would be advisable to consult a professional ecologist to help identify suitable locations to install any swift nesting features.

5.11 Wallisdown Pavilion

5.11.1 Summary of findings

The Wallisdown Pavilion mostly comprised an expanse of amenity grassland primarily used as sports pitches. Other habitats and features recorded on the site included ruderal vegetation / rough grassland, ornamental planting, scrub, scattered trees, buildings and structures, bare ground and hardstanding. The habitats and features recorded on this site were all common and widespread examples of mostly low ecological value.

5.11.2 Conclusions and further recommendations

As the Wallisdown Pavilion area is not currently owned by the university but is only leased from the local council, it is therefore not possible to make a significant recommendations to enhance the biodiversity value of this site. However, two potential enhancement options that may be feasible are detailed below:

- It is recommended that the margins of amenity grassland around the perimeter of the playing fields should managed as areas of rough grassland habitat. This would provide a considerably more valuable year-round rough grassland habitat resource for wild fauna, such as bats, birds, invertebrates and reptiles, compared with the existing regularly mown short sward that is present. Management of any rough grassland margins would consist of a single biannual cut to ground level together with the removal of all arisings in order to maintain the rough sward and prevent scrub establishment.

- Planting of species-rich native hedgerows along the northern and western boundaries which would also incorporate the existing scattered trees along these boundaries. This measure would provide an additional high-value habitat feature on site in the long-

term once it has established. Any such hedgerow creation on this site should follow the planting and management recommendations detailed in section 5.7.2.

6.0 REFERENCES

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APPENDIX I: Site location plans

Talbot Campus

Wallisdown Pavilion

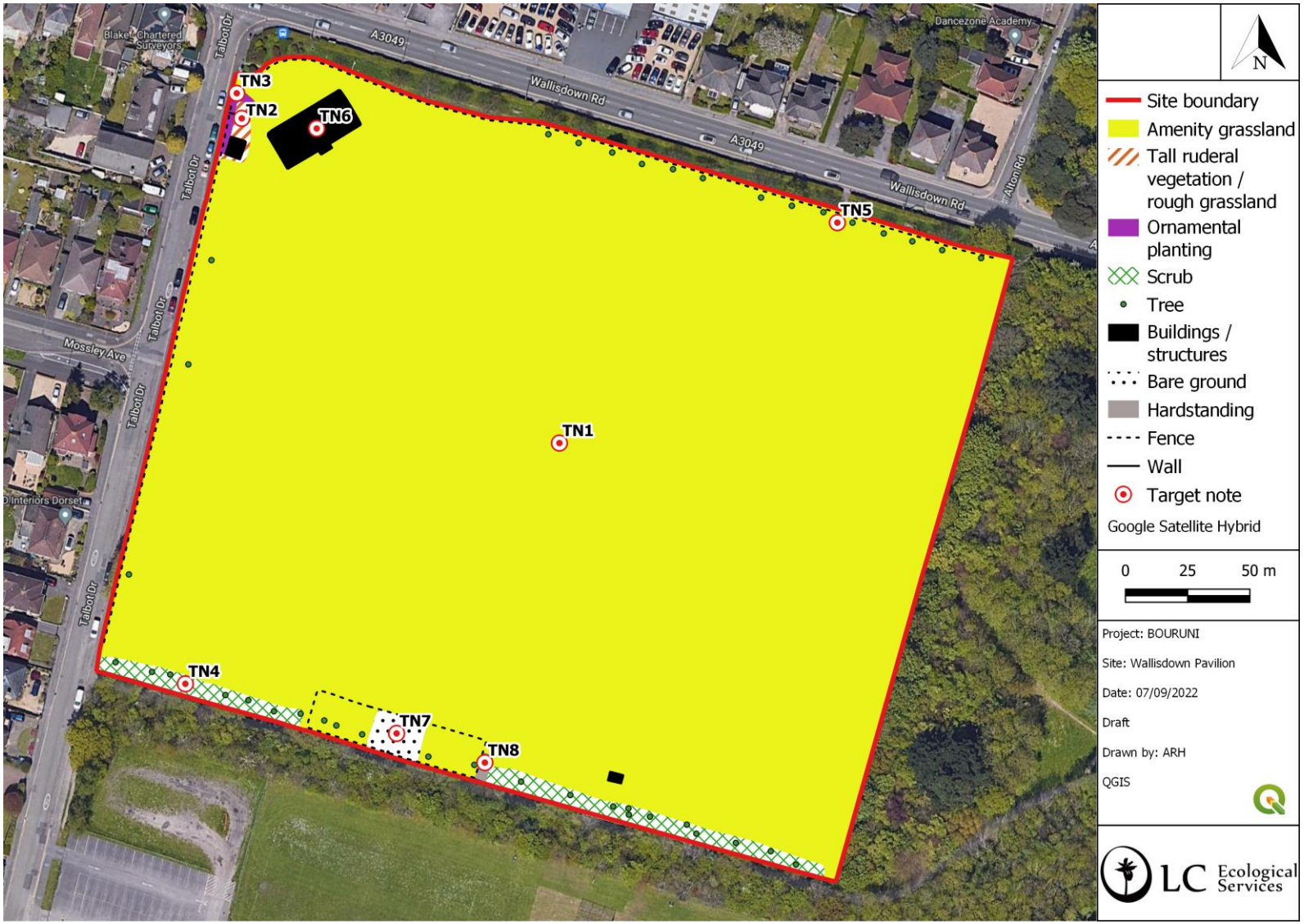
APPENDIX II: Phase 1 habitat plans

Talbot campus

Target Notes to accompany Phase 1 habitat map

Target note	Description
TN1	Education and research buildings within the main area of the Talbot Campus.
TN2	Student accommodation buildings.
TN3	The recently constructed Poole Gateway building (opened in spring 2020).
TN4	Amenity grassland within the main campus area comprising a short, regularly-mown and grass-dominated sward.
TN5	A section of amenity grassland in the south-east of the campus which comprised a strong element of unimproved acid grassland.
TN6	Sections of the soft landscaping on site apparently having been sown with a wildflower seed mixture.
TN7	Small sections of rough grassland in the north of the site between the edges of the hardstanding vehicle parking areas and the northern area of woodland habitat.
TN8	A fenced-off section of land being reserved for future development which was largely colonised by ruderal vegetation.
TN9	A narrow strip of ruderal vegetation occurring between a gravel parking area and Gillett Road which was identified to be notable due to the presence of the nationally-scarce species hairy bird's-foot-trefoil (*Lotus subbiflorus*).
TN10	Various examples of ornamental planting recorded across the site.
TN11	Evidence of on-site composting and use of a polytunnel and a greenhouse in the north of the site.
TN12	A continuous band of mature scrub with scattered trees along the south-western boundary of the site abutting the boundary fence line to the west of the student accommodation buildings.
TN13	An isolated section of mature scrub with scattered trees adjacent to the south of the student accommodation area.
TN14	Stands of dense gorse (*Ulex europaeus*) scrub which appeared to have colonised over ornamental planting beds that were not being regularly maintained within the far southern carpark area.
TN15	A stand of dense gorse scrub in the east of the site was notable due to the presence of regenerating bell heather (*Erica cinerea*) on the fringes of the scrub stand.
TN16	Sections of recently planted native hedgerow.
TN17	Stands of woodland habitat recorded in the north of the site.
TN18	Scattered trees.
TN19	A bare gravel parking area.
TN20	Minor gravelled margins within the far southern car park area.
TN21	Areas of hardstanding.

Wallisdown Pavilion



Target Notes to accompany Phase 1 habitat map

Target note	Description
TN1	An expanse of amenity grassland primarily used as sports pitches.
TN2	A small section of tall ruderal vegetation / rough grassland.
TN3	A small section of ornamental planting comprising privet hedging (*Ligustrum sp*).
TN4	A narrow band of mixed native scrub alongside the majority of the southern boundary of the site.
TN5	Scattered trees mostly comprising semi-mature specimens. Species recorded included pedunculate oak (*Quercus robur*), ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), sweet chestnut (*Castinea sativa*) and horse chestnut (*Aesculus hippocastanum*).
TN6	Buildings and structures included a modern sports pavilion building constructed of bricks, an electricity utilities structure, and a small storage container.
TN7	A small section of bare ground within a children's play area comprising a layer of bark chippings.
TN8	A small section of tarmac hardstanding.

APPENDIX III: Site photographs

Talbot Campus

Photo 1: a view within the main area of the Talbot Campus depicting various large modern buildings, together with hard and soft landscaping

Photo 2: a view within a student accommodation area in the west of the site depicting accommodation buildings, vehicle parking areas, ornamental planting and scattered trees

Photo 3: a section of sedum blanket type green roofing on part of the Fusion building which was in good condition with some minor colonisation by weeds

Photo 4: a section of amenity grassland within the main campus area comprising a short, regularly-mown and grass-dominated sward

Photo 5: a section of amenity grassland in the south-east of the campus which comprised a strong element of unimproved acid grassland

Photo 6: the nationally-scarce species hairy bird's-foot-trefoil (*Lotus subbiflorus*) photographed on-site

Photo 7: an area sown with a wildflower seed mixture adjacent to the Poole Gateway building

Photo 8: another area sown with a wildflower seed mixture located in the south of the campus adjacent to Gillett Road

Photo 9: a small section of rough grassland between a car parking area and woodland habitat in the north of the site

Photo 10: an area of land in the south-east of the campus reserved for future development which has largely been colonised by ruderal vegetation

Photo 11: a strip of ruderal vegetation located in the south of the campus adjacent to Gillet Road, this was notable due to the presence of the nationally-scarce species hairy bird's-foot-trefoil

Photo 12: an example of the ornamental planting on site, this photo depicts a planting bed that was in relatively good condition and well-filled with a variety of different species

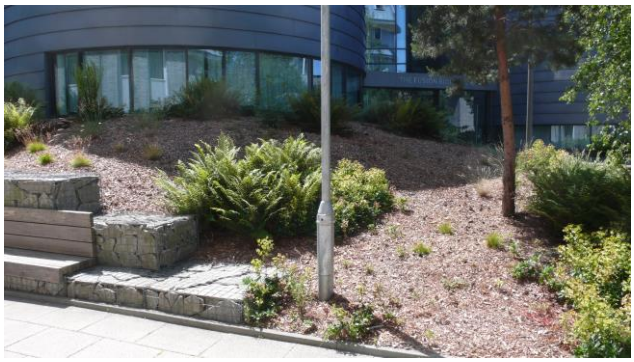


Photo 13: another example of an ornamental planting bed on site, this example was considered to be in poor condition due to the substantial bare gaps in the planting and some colonisation by weeds

Photo 14: metal planters on the accesible roof terrace of the Fusion building which were in distinctly poor condition and mostly colonised by weeds

Photo 15: an actively used polytunnel and some evidence of on-site composting in the north of the site

Photo 16: an actively used greenhouse in the north of the site

Photo 17: a continuous band of mature scrub with scattered trees along the south-western boundary of the site abutting the boundary fence line to the west of the student accommodation buildings

Photo 18: areas largely colonised by dense gorse (*Ulex europaeus*) scrub in the far east of the site, it is considered that these areas are potentially suitable for heathland habitat creation

Photo 19: regenerating bell heather (*Erica cinerea*) on the fringes of gorse scrub in the east of the site which suggest there is potential for heathland habitat creation

Photo 20: hedgerow H1 comprising a short section of native hedgerow planting, mostly consisting of hawthorn (*Crataegus monogyna*)

Photo 21: hedgerow H2 comprising a short section of recently planted native hedgerow consisting of a mix of hawthorn, blackthorn (*Prunus spinosa*) and field maple (*Acer campestre*)

Photo 22: an example view within the woodland habitat located in the north of the site

Photo 23: another example view within the woodland habitat showing dense thickets of the non-native invasive species cherry laurel (*Prunus laurocerasus*)

Photo 24: depicts substantial gaps in the woodland canopy and understorey cover in the north-west of the site, the photo also shows a row of poor condition cypress (*Cupressus sp*) hedging (background) along the northern edge of the woodland band

Photo 25: scattered trees and poor amenity grassland in the far north-west of the site adjacent to the main campus entrance area

Photo 26: two bat roost boxes and a bird nest box installed in the woodland habitat in the north-east of the site, the bat roost boxes are considered to be too near to ground level and the bird nest box positioning is also suboptimal

Photo 27: a very poorly sited bat roost box with cover removed, this was positioned next to a pedestrian walkway and very near to ground level

Photo 28: a poorly sited swift (*Apus apus*) nesting box which is designed to be installed within the masonry of buildings

Photo 29: a poorly sited bird nest box in an exposed position close to a pedestrian walkway

Photo 30: a well-made bug hotel feature recorded in the north-west of the site

Wallisdown Pavilion

	
Photo 1: overview of the Wallisdown Pavilion area looking westwards, the photo depicts an expanse of amenity grassland mainly used as sports pitches (foreground) and the sports pavilion building (background)	**Photo 2:** tall ruderal vegetation / rough grassland and a section of ornamental privet (*Ligustrum sp*) hedging in the north-west corner of the site
	
Photo 3: scrub and scattered trees alongside the southern boundary of the site	**Photo 4:** a row of trees alongside the northern boundary of the site

APPENDIX IV: Site enhancement plan

Talbot Campus