

4.1 Desk study**4.1.1 Designated sites**

According to the Multi-Agency Geographic Information for the Countryside website (www.magic.gov.uk), the site lies within Chichester and Langstone Harbours SPA and Ramsar Site and Chichester Harbour SSSI. In addition, the eastern part of the site lies adjacent to the Solent Maritime SAC. There are five further statutory designated sites within 2km of the site. These are listed in *Table 4.1.1.1*.

Table 4.1.1.1. Statutory designated sites within the 5km and 2km search areas of the marquee area.

Level of designation	Designation	Name	Distance & direction from site
International	SPA	Chichester & Langstone Harbours	Within designation
	Ramsar	Chichester & Langstone Harbours	Within designation
	SAC	Solent Maritime	Adjacent to the east & south
National	SSSI	Chichester Harbour	Within designation
		Sinah Common	c.4,031m south-west
		Langstone Harbour	c.2,425m west
	NNR	-	-
County	LNR	Gutner Point	c.2,034m north
		Sandy Point	c.1,843, south-east
		Hayling Billy	c.2,367m west

Tournerbury is designated as a unit of the Chichester Harbour SSSI. It is noted within the SSSI designation as follows:

'Semi-natural broadleaved woodland associated with the harbour is important for breeding birds and supports two heronries. Oak is the major tree species, usually with hazel coppice, as at Old Park Wood, although Tournerbury Wood has well-spaced oaks with the occasional beech, holly and yew with a fairly dense ground flora of bramble and bracken.'

There are two locally designated sites - Sites of Importance for Nature Conservation (SINCs) - within 1km of the marquee. These are listed in *Table 4.1.1.2*. No impacts are anticipated on any SINCs.

Table 4.1.1.2. Locally designated sites within the 1km search area of the site.

Sites of Importance for Nature Conservation Name	Central Grid Ref.	Species supported that meet Section 6 of SINC Selection Criteria
Selsmore Boating Lake	SZ73709880	
Mengham Salterns	SZ73709920	Ononis spinosa (Spiny Restharrow) [CS] Potamogeton pectinatus (Fennel Pondweed) [CS]
s8 = Schedule 8 species; RDB = Red Data Book species; NS = Nationally scarce species; CR = County rare species; CS = County scarce species.		

4.1.2 Notable species records

Of the notable species recorded within 1km of the site, five are amphibians; two are reptiles; 149 are birds; 97 are vascular plants; three are non-vascular plants (liverworts, hornworts & mosses); 121 are invertebrates; nine are terrestrial mammals (including eight species of bat); and two are marine mammals.

A full list of notable species with details of their respective protection and/or designations is provided in *Appendix B*.

4.2 Habitats and plant species

4.2.1 Overview

Tournerbury Wood is a mixture of semi-natural broad-leaved woodland within Saxon earthworks (subsequently referred to as The Bury) with adjoining broad-leaved plantation woodland and secondary woodland (Tournerbury plantation) established on former open ground in the late 19th Century. There is a small area of improved grassland within the woodland.

In the south eastern corner of the site the woodland habitats open out into amenity grassland around Woods Cottage. There is a patch of species-poor semi-improved grassland to the west of the cottage that has been heavily grazed by rabbits. Further to the south-west, the woodland opens out into a small area of saltmarsh. Scattered scrub has established along the south eastern edge of the site.

The following habitats are present on site:

- semi-natural broad-leaved woodland;
- broad-leaved plantation woodland;
- conifer plantation;
- amenity grassland;
- improved grassland;
- species-poor semi-improved grassland;
- scrub; and
- saltmarsh.

A Phase 1 Habitat Map showing the location of the various habitats is given in *Figure 3* in *Section 7*).

A *Rhododendron* species (*Rhododendron*) was originally planted on the western edge of the plantation and along the southern access road to woods cottage. It has expanded its range slightly in that area and is being actively managed by the landowner. No other plant species listed on *Schedules 8 or 9* of the *Wildlife and Countryside Act 1981* were recorded on the site.

Plant species recorded from the site (along with relative abundance) are tabulated in the Phase 1 Habitat Survey report with further species lists in the NVC report (John Wenman Ecological consultancy LLP, 2014 & 2018).

4.2.2 *Semi-natural broad-leaved woodland*

The Bury (at the northern end of the site) is broad-leaved semi-natural woodland dominated by *Quercus robur* (Pedunculate Oak) with occasional *Corylus avellana* (Hazel), *Fagus sylvatica* (Beech), *Ilex aquifolium* (Holly) and *Taxus baccata* (Yew) within and on the embankments of a Saxon settlement. The centre is dominated by *Betula pendula* (Silver Birch) where it colonised after tree fall during the storm of 1987. The field-layer is dominated by *Pteridium aquilinum* (Bracken) with occasional *Galium aparine* (Cleavers) and *Rubus fruticosus* (Bramble). The remains of *Hyacinthoides non-scripta* (Bluebell) flowering stems were visible throughout at the time of the Phase 1 Habitat Survey (John Wenman Ecological Consultancy LLP, 2018).

On the open paths/rides through the woodland the vegetation is grass-dominated with species including the grasses *Agrostis capillaris* (Common Bent), *Agrostis stolonifera* (Creeping Bent), *Holcus lanatus* (Yorkshire-fog) and *Poa trivialis* (Rough Meadow-grass) together with a mixture of common forbs such as *Ranunculus repens* (Creeping Buttercup) and *Stellaria media* (Common Chickweed) and shade-tolerant herbs including *Digitalis purpurea* (Foxglove), *Geranium robertianum* (Herb-Robert), *Geum urbanum* (Wood Avens).

Areas of earlier plantation and secondary woodland in Field Wood and South Wood flank the more recent plantation woodland of North and South Plantations.

South Wood, which skirts the saltmarsh and mudflats, is dominated by *Fraxinus excelsior* (Ash) to the east with frequent *Populus tremula* (Aspen) and occasional *Acer pseudoplatanus* (Sycamore), *Crataegus monogyna* (Hawthorn), *Quercus robur* (Pedunculate Oak) and locally frequent *Salix caprea* (Goat Willow). There were an abundance of *Acer pseudoplatanus* (Sycamore) saplings in the western part of the wood (at the time of survey). The field-layer contained *Brachypodium sylvaticum* (False Brome), *Carex pendula* (Pendulous Sedge), *Carex remota* (Remote Sedge), *Geum urbanum* (Wood Avens), *Juncus effusus* (Soft-rush), *Lonicera periclymenum* (Honeysuckle) and *Rubus fruticosus* agg. (Bramble). This area of woodland has a number of small ponds creating small open areas amongst the otherwise relatively dense understorey.

Field Wood (surrounding the field at the northern edge of the plantation), has a mixture of large mature *Quercus robur* (Pedunculate Oak) trees amongst stands of younger trees and shrubs including *Acer pseudoplatanus* (Sycamore), *Betula pendula* (Silver Birch), *Crataegus monogyna* (Hawthorn), *Fraxinus excelsior* (Ash) and *Populus tremula* (Aspen). The field-layer is dominated by *Hedera helix* (Ivy) with patches of *Pteridium aquilinum* (Bracken), *Rubus fruticosus* agg. (Bramble) and *Urtica dioica* (Common Nettle).

4.2.3 Broad-leaved plantation woodland

The broad-leaved plantation woodland is divided into South Plantation and North Plantation.

South Plantation is a young plantation with species including *Betula pendula* (Silver Birch), *Fagus sylvatica* (Beech), *Fraxinus excelsior* (Ash), *Populus* species (Poplar), *Prunus* species (Cherry) and *Quercus robur* (Pedunculate Oak). A small amount of *Rhododendron* species (Rhododendron) planted on the western edge has expanded into the plantation. There are also a number of mature *Pinus nigra* ssp. *laricio* (Corsican Pine) trees that flank the western entrance to Tournerbury and continue along the southern side of South Plantation, along the access road to Woods Cottage.

North Plantation is similar in composition to South Plantation, but is dominated by *Populus tremula* (Aspen). There is a large patch of *Betula pendula* (Silver Birch) trees at the eastern end of the plantation. The field-layer is dominated by dense *Rubus fruticosus* agg. (Bramble).

4.2.4 Scrub

Scattered scrub with occasional trees has established along the edge of the mudflats at the south eastern edge of the site. This is dominated by *Crataegus monogyna* (Hawthorn), *Ligustrum vulgare* (Wild Privet), *Prunus spinosa* (Blackthorn), *Rosa canina* (Dog-rose) and *Salix* species (Willow) together with *Betula pendula* (Silver Birch) and *Quercus robur* (Pedunculate Oak). The field-layer contains *Brachypodium sylvaticum* (False Brome), *Dipsacus fullonum* (Teasel), *Carex otrubae* (False Fox-sedge), *Dipsacus fullonum* (Teasel), *Iris foetidissima* (Stinking Iris), *Rubus fruticosus* (Bramble), *Senecio jacobaea* (Common Ragwort) and *Urtica dioica* (Common Nettle).

4.2.5 Improved Grassland

A small area of improved grassland in the centre of the plantation has a sward dominated by *Lolium perenne* (Perennial Rye-grass) with occasional patches of *Alopecurus pratensis* (Meadow Foxtail), *Holcus lanatus* (Yorkshire-fog) and *Poa pratensis* (Smooth Meadow-grass). Occasional broad-leaved herbs have established where the ground had been disturbed with species including *Anagallis arvensis* (Scarlet Pimpernel), *Cerastium fontanum* (Common Mouse-ear), *Filago vulgaris* (Common Cudweed), *Lotus corniculatus* (Common Bird's-foot-trefoil), *Ranunculus repens* (Creeping Buttercup), *Stellaria media* (Common Chickweed), *Trifolium repens* (White Clover) and *Veronica serpyllifolia* (Thyme-leaved Speedwell).

4.2.6 Amenity Grassland

The regularly mown grassland in the far south east corner of the site has a sward dominated by *Lolium perenne* (Perennial Rye-grass) interspersed with occasional *Holcus lanatus* (Yorkshire-fog). Other species present include *Chenopodium album* (Fat-hen), *Geranium molle* (Dove's-foot Crane's-bill), *Symphytum* species (Comfrey) and *Trifolium repens* (White Clover). There are scattered trees in the grassland with species including *Betula pendula* (Silver Birch), *Quercus robur* (Pedunculate Oak), *Salix* species (Willow) and *Taxus baccata* (Yew).

The grassland is sparse amongst the scattered trees to the north of the cottage, which is used for parking and as part of the access road on to the site. There are planted trees here comprising a mature *Larix decidua* (European Larch) and a mature *Pinus nigra* ssp. *laricio* (Corsican Pine).

The grassland to the west of the cottage was grazed less frequently by rabbits since the survey in 2013 (John Wenman Ecological Consultancy LLP, 2018) and had a greater diversity of grass species than the other area of amenity grassland including *Agrostis capillaris* (Common Bent), *Festuca rubra* (Red Fescue), *Holcus lanatus* (Yorkshire-fog) and *Poa pratensis* (Smooth Meadow-grass) and broad-leaved herbs including *Cerastium fontanum* (Common Mouse-ear), *Geranium molle* (Dove's-foot Crane's-bill), *Matricaria discoidea* (Pineappleweed), *Picris echioides* (Bristly Oxtongue), *Prunella vulgaris* (Self-heal) and *Senecio jacobaea* (Common Ragwort).

4.2.7 Saltmarsh

The saltmarsh fringe had species typical of mudflats that are able to survive during frequent submergence by saltwater. Species include *Atriplex prostrata* (Spear-leaved Orache), *Elymus athericus* (Sea Couch), *Limonium vulgare* (Common Sea-lavender), *Salicornia europaea* (Common Glasswort), *Bolboschoenus maritimus* (Sea Club-rush) and *Spergularia media* (Greater Sea-spurrey). A brackish waterbody is present in the south east corner of the site. It is connected to a drain on the site.

4.2.8 Waterbodies

In addition to the small woodland ponds scattered through South Wood, a large duck pond is present in the centre of the site. The pond has been heavily disturbed by waterfowl and had no submerged or emergent vegetation. The surrounding ground was damp with species typical of damp soils such as *Juncus effusus* (Soft Rush) and *Salix* species (Willow species).

4.2.9 Built Structures

Woods Cottage is a detached house in the south eastern corner of the site. There is a nearby marquee, and an area of decking with a canopy.

4.3 *Protected vertebrates*

4.3.1 *Bats*

There is suitable habitat for roosting, commuting and foraging bats (woodland, scrub and grassland).

The woodland, ponds and Chichester Harbour all provide good habitat, and there are good connections into the wider landscape.

Bats follow linear landscape features such as lines of trees, hedges, buildings and waterways in order to commute from their roost sites to their feeding grounds. Likewise they use these features to navigate between feeding areas and alternative roosts.

4.3.2 *Dormice*

The woodland provides suitable habitat for nesting, foraging and hibernating dormice. The woodland and scrub contain a mixture of plants producing flowers and berries such as *Crataegus monogyna* (Hawthorn) and *Rubus fruticosus* agg. (Bramble); and plants producing nuts such as *Corylus avellana* (Hazel). This mixture of different species provides food sources throughout the year and as such provides good foraging habitat.

Whilst it cannot be ruled out that there isn't a remnant population present without surveys, Tournerbury Wood is an isolated woodland surrounded by arable land and marine habitats, with no connectivity to further areas of woodland. TWE is also on an island (Hayling Island), further reducing the likelihood of colonisation by dormice. Dormice live at low densities (c.2 adults per ha of woodland). Given the small size of the woodland and lack of connectivity with other areas of suitable habitat, it is unlikely to support a viable population of dormice. There are no records of dormice within 1km of the site in the HBIC data search.

4.3.3 *Great crested newt*

There are several small woodland ponds within the South Wood as well as a large pond at the centre of the site (the duck pond).

The smaller ponds were mostly dried out at the time of the Phase 1 Habitat Survey (John Wenman Ecological Consultancy LLP, 2018) and the duck pond was heavily used and disturbed by large numbers of waterfowl (e.g. Mallard).

4.3.4 *Otter and water vole*

There are no streams or rivers on the site. Although water voles can be found in brackish habitats they are not as common in estuarine habitat or salt marsh except where there are relatively stable, reed-fringed lagoons. Therefore, it is unlikely that water voles are present on site. In addition, there is no suitable water vole habitat within the development footprint.

The proximity of the site to Mengham Rythe and Chichester Harbour, where otters are known to be present, makes it likely that otters will either cross the site or move along its boundaries. If fish or other prey sources (including wildfowl) are present within the ponds, then they may also hunt on site.

4.3.5 *Badger*

During the Phase 1 Habitat Survey (John Wenman Ecological Consultancy LLP, 2018) a pathway through the wood and 3-4 mammal burrow entrances were found within the earthworks of the former hill fort (The Bury). No further information provided as to the species of mammal.

4.3.6 *Birds*

General

All the woodland, scrub, shrubs and trees on the site have the potential to support nesting birds during the breeding season.

There are many bird species classified as species of principal importance under *Section 41* of the *NERC Act 2006* (or in the *RSPB Birds of Conservation Concern*) that could be using this area of the site for nesting and foraging.

The breeding bird surveys carried out in 2014 (Hampshire Ecological Services Ltd, 2015) found that a total of 27 bird species were using the site. Seven of these are on the Amber List of Birds of Conservation Concern, whilst two species (song thrush and starling) are on the Red List of Birds of Conservation Concern. Of the 27 species recorded, seven were confirmed as breeding on site and this included two Amber List species (little egret and stock dove) and one Red List species (starling).

Heronry

A heronry is present within the woodland to the north of the site. It has been counted as part of the British Trust for Ornithology (BTO) heronry census since 1966. It has been suggested that the heronry was a qualifying feature for the inclusion of the wider Tournembury Woods Estate in the Chichester Harbour SSSI. However, the heronry is not listed among the 30 notified features of the SSSI.

Two other heronries are present in the wider landscape. One is located within Old Park Wood, on the eastern side of Chichester Harbour. The second is located within Fort Elson Wood on the western side of Portsmouth Harbour. The heron (active nest) count data for the Tournembury Wood Estate, Old Park Wood and Fort Elson are shown in *Table 4.3.6.1*. The table shows the raw data as supplied by the British Trust for Ornithology (BTO), Heronries Census. Please note that -6 denotes occupied nests but no count, and blank data boxes are where no data has been supplied.

Table 4.3.6.1. BTO Heronry census count data 1966 to 2019 (source: BTO).

Year	Tournerbury Wood	Old Park Wood	Fort Elson
1966	14	21	-
1967	18	25	-
1968	18	22	-
1969	21	25	-
1970	16	27	-
1971	15	25	-
1972	16	31	-
1973	21	27	-
1974	17	33	-
1975	17	40	-
1976	19	37	8
1977	21	33	8
1978	18	30	12
1979	15	26	8
1980	10	28	9
1981	14	22	9
1982	12	18	-6
1983	19	15	29
1984	14	19	52
1985	13	17	75
1986	-	15	49
1987	9	16	41
1988	10	-6	-6
1989	-6	-6	-6
1990	17	-	11
1991	9	-	-
1992	15	17	25
1993	12	19	19
1994	13	15	25
1995	11	10	80
1996	9	19	80
1997	11	12	80
1998	11	13	110
1999	12	12	65
2000	10	12	73
2001	-	10	59
2002	-	14	65
2003	15	13	82
2004	18	13	85
2005	6	10	50

2006	12	13	52
2007	8	13	45
2008	4	10	44
2009	10	10	52
2010	-	8	70
2011	-	5	44
2012	-	5	52
2013	14	5	24
2014	11	0	7
2015	7	4	18
2016	6	2	14
2017	2	4	-6
2018	-	7	-
2019	4	4	-

Hampshire Ecological Services were commissioned by the Tournbury Woods Estate to monitor the heronry within the estate during 2015 and 2019 (Hampshire Ecological Services Ltd, 2015 & 2019). While the majority of the nests observed were occupied by grey heron (a Green List species) one nest was occupied by little egret (Amber List species). The total number of little egret nests was expected to increase later in the breeding season as more birds begin to nest.

During surveys carried out in 2015 (Hampshire Ecological Services Ltd, 2015), a total of nine nests were recorded. This included eight grey heron nests and one little egret nest. The number of grey heron nests had therefore halved between 2015 and 2019. However, the geographical extent of the colony remains similar to that previously recorded. The presence of a rookery in the woodland, to the south-east of the heronry, may discourage the heronry from becoming bigger.

The heronry is believed to have originated from a larger colony formerly present on the nearby Thorney Island (Eyre, 2015). As a small secondary colony, it is likely to be subject to natural fluctuations in population size.

The number of little egret nests has remained the same since 2015. Little egret are recent colonisers to Britain, which lies at the northern limit of their European breeding range. It was estimated that between 2006 and 2010, there were approximately 660-740 breeding pairs annually in the UK (Musgrove *et al.*, 2013).

4.3.7 *Widespread species of reptiles*

There is suitable foraging and hibernation habitat for widespread species of reptile (such as slow-worms) on the site. However, the majority of the development footprint is short mown amenity grassland and as such is unsuitable for reptiles due to the lack of cover and risk of predation.

4.3.8 *Other mammals*

Rabbits are known to be present on site and therefore it is highly likely their predators such as foxes are also present on or near the site.

Given the habitats present it is likely that there are other small mammals present such as voles and shrews, as well as larger mammals such as roe deer.

4.4 *Summary assessment of nature conservation value*

The nature conservation importance assigned to each valued ecological receptor is listed in *Table 4.4.1.* and includes the protected species, species of nature conservation concern together with valuable habitats. For example, the assessment of importance for species associated with woodland has been included in the assessment of the importance of the relevant woodland features. The exceptions to this are the more widespread species and groups for example badger, which have been identified as separate ecological receptors, as they are less obviously associated with individual habitat types or specific habitat features. The impact on each ecological receptor without mitigation is given in *Table 4.4.2.*

Table 4.4.1. Summary of ecological importance and receptor sensitivity.

Ecological Receptor	Importance	Sensitivity	Comments
Chichester & Langstone Harbours SPA & Ramsar	International	Very High	Statutory designated site including the site within its boundaries. Designated for its overwintering birds.
Solent Maritime SAC	International	Very High	Statutory designated site adjacent (to the east & south) to the site.
Chichester Harbour SSSI	National	High	Statutory designated site with boundary encompassing the site, including the development footprint.
Semi-natural broad-leaved woodland	National	Negligible	Deciduous woodland is classified as a UK Priority Habitat – a habitat of conservation importance under the NERC Act 2006. In addition, it provides habitat for different species <i>e.g.</i> foraging habitat for bats that have a higher importance.
Broad-leaved plantation woodland	Site	Negligible	As a plantation it has negligible importance. However, it forms a complex of open and wooded habitats and extends the woodland of The Bury. In addition, it provides habitat for different species <i>e.g.</i> foraging habitat for bats that have a higher importance.
Scrub	Site	Negligible	Although of negligible importance (given the species are common and typical of this habitat) it provides habitat for different species <i>e.g.</i> foraging habitat for bats that have a higher importance.
Amenity grassland	Site	Negligible	The grassland is subject to regular cutting and disturbance. It supports widespread plant species typical of regularly managed grasslands throughout lowland England.
Improved grassland	Site	Negligible	The grassland is subject to regular cutting and disturbance. It supports widespread plant species typical of regularly managed grasslands throughout lowland England.
Species-poor semi-improved grassland	Site	Negligible	The grassland is subject to regular cutting and disturbance. It supports widespread plant species typical of regularly managed grasslands throughout lowland England.

Ecological Receptor	Importance	Sensitivity	Comments
Bats	National	High	European Protected Species and likely to forage on site. Roost(s) may be present within the woodland and/ or Woods Cottage.
Dormice	National	Low	European Protected Species and suitable habitat present on site, but no suitable habitat within the development footprint.
Otters	National	High	European Protected Species and known nearby. Unlikely to use the development footprint, but may travel across it.
Water voles	County	Low	Protected species, but unlikely to be present on site and certainly not within the development footprint.
Badgers	Local	Low	Protected species with suitable habitat setts in the woodland on site. However, although the amenity grassland is suitable foraging habitat it will be unaffected by the proposals. Protection is mainly an animal welfare issue
Birds	County	Medium	Suitable habitat for a variety of woodland species. 27 bird species heard during breeding bird surveys. Seven are on the Amber List of Birds of Conservation Concern, whilst two species (song thrush and starling) are on the Red List of Birds of Conservation Concern. Little egret and stock dove are breeding on site. Both are on the Amber List of Birds of Conservation Concern. Starling is breeding on site and is on the Red List of Birds of Conservation Concern.
Great Crested Newts	National	Low	European Protected Species. If present unlikely to use the development footprint.
Reptiles	Local	Medium	Protected species with suitable habitat around the edges of the development footprint.

Ecological Receptor	Importance	Sensitivity	Comments
Other mammals e.g. water shrews & harvest mice	District	Negligible	May use the site, but unlikely to be present within the development footprint.

Table 4.4.2. Summary of impacts without mitigation - broad habitat types and species groups.

Ecological Receptor	Nature Conservation Importance of Receptor	Residual Impact			Complexity and Magnitude / Extent	Duration	Significance
		Impact	Confidence	+ve / -ve / none			
Chichester & Langstone Harbours SPA & Ramsar	Very High	Small	Probable	-ve	Potential disturbance to overwintering birds when event is held in winter, early spring, or late autumn	During events	Moderately significant
Solent Maritime SAC	Very High	Negligible	Probable	None	Unlikely to impact	-	Not significant
Chichester Harbour SSSI	High	Negligible	Certain	None	Unlikely to impact	-	Not significant
Semi-natural broad-leaved woodland	Negligible	Negligible	Certain	None	Unlikely to impact	-	Not significant
Broad-leaved plantation woodland	Medium	Negligible	Certain	None	Unlikely to impact	-	Not significant
Scrub	Negligible	Negligible	Certain	None	Unlikely to impact	-	Not significant
Amenity grassland	Negligible	Negligible	Certain	None	Unlikely to impact	-	Not significant

Ecological Receptor	Nature Conservation	Residual Impact					
		Negligible	Certain	None	Unlikely to impact	-	Not significant
Improved grassland	Negligible	Negligible	Certain	None	Unlikely to impact	-	Not significant
Species-poor semi-improved grassland	Negligible	Negligible	Certain	None	Unlikely to impact	-	Not significant
Bats	High	Large	Probable	-ve	Impact on commuting and foraging bats, and any roost(s) near the footprint &/ or in Woods Cottage	Permanent	Significant
Dormice	Low	Negligible	Probable	None	Unlikely to impact	-	Not significant
Otters	High	Negligible	Probable	None	Unlikely to impact	-	Not significant
Water voles	Low	Negligible	Probable	None	Unlikely to impact	-	Not significant
Badgers	Low	Negligible	Probable	None	Unlikely to impact	-	Not significant
Birds (on site)	Medium	Low	Probable	-ve	Disturbance/ displacement to breeding birds in the trees within the development footprint and in woodland on the edges of the event area footprint.	During events	Moderately significant
Great Crested Newts	Low	Negligible	Probable	None	Unlikely to impact as development footprint is unsuitable due to lack of cover and risk of predation.	-	Not significant
Reptiles	Medium	Negligible	Probable	None	Unlikely to impact as development footprint is unsuitable due to lack of cover and risk of predation.	-	Not significant
Other mammals <i>e.g.</i> shrews & voles	Negligible	Negligible	Probable	None	Unlikely to impact as development footprint is unsuitable due to lack of cover and risk of predation.	-	Not significant

5.1 Desk study

5.1.1 Statutory and non-statutory designations

No impacts are anticipated on Solent Maritime SAC or Chichester and Langstone Harbours SPA and Ramsar Site.

No habitat is due to be removed and therefore there will be no impact on the habitats for which Chichester Harbour SSSI has been designated. In addition, condition assessments have been regularly carried out by Natural England on the Chichester Harbour SSSI. The SSSI is divided into 45 units. The Tournembury Woods Estate is unit '003 Tournembury Plantation', which has been assessed as being in 'Favourable Condition' since 1997. The northern area of the Tournembury Woods Estate, adjacent to the access track, is the only part of the estate with habitat for which the SSSI was designated for: W10 *Quercus robur*–*Pteridium aquilinum*–*Rubus fruticosus* woodland. This is outside of the footprint of the development (the wedding & events venue area). Therefore, there will be no impact on the SSSI.

No impacts are anticipated on the other nearby SSSIs, Sinah Common SSSI and Langstone Harbour SSSI; or the LNRs within 2km and SINC's within 1km (see *Section 4.1.1*).

5.1.2 Habitats Regulations Assessment (HRA)

As the site is within the boundary of the Chichester and Langstone Harbours SPA and Ramsar Site a shadow HRA has been produced. This is a separate document – see *Wedding & Event Venue, Tournembury Woods, Tournembury Woods Estate, Tournembury Lane, Hayling Island, Hampshire PO11 9DL. Shadow Habitat Regulations Assessment Report* (Hampshire Ecological Services Ltd, 2020). This concluded that there would be no impact on the SPA.

5.2 Habitats and plants

5.2.1 Habitats

The survey findings show that the majority of the vegetation communities within Tournembury Woods Estate do not satisfactorily match any NVC communities. This is true for the woodland communities within the north and south plantations, north and south pond and north and south field woodlands. The Phase 1 Habitat Survey indicated that these habitats comprised secondary woodland that had established on former agricultural land during the last decade of the 19th Century. The inability to adequately match these habitats to NVC communities is considered to be a reflection of the relatively young age of the secondary woodland habitats and on-going site management practices *e.g.* planting trees, which has resulted in diverse, non-uniform stands frequently dominated by species more typical of disturbed habitats such as *Acer pseudoplatanus* (Sycamore).

The Bury was classified as the NVC W10 *Quercus robur*-*Pteridium aquilinum*-*Rubus fruticosus* woodland community. This woodland community is widely distributed and common throughout lowland England. It is typically relatively species poor with *Quercus robur* (Pedunculate Oak) the prominent species in the canopy, but with *Betula pendula* (Silver Birch) prominent in places where the *Quercus robur* (Pedunculate Oak) canopy has become more open, and with a field-layer dominated by *Hyacinthoides non-scripta* (Bluebell) in the spring with *Lonicera periclymenum* (Honeysuckle), *Pteridium aquilinum* (Bracken) and *Rubus fruticosus* agg. (Bramble) the dominant species. The density of *Quercus robur* (Pedunculate Oak) within the woodland is relatively low creating fairly open areas and the suggestion of W25 *Pteridium aquilinum*-*Rubus fruticosus* underscrub community. This is largely as a consequence of the loss of several canopy trees during storms in the late 20th Century.

The NVC report (John Wenman Ecological consultancy LLP, 2014) states “*Broad-leaved woodland covers 2241 hectares in the South Coast Plain National Character Area (NCA) – accounting for 4% of the NCA (Natural England 2014); the woodland of Tournerbury forms 0.4% of the total area of broadleaved woodland within the NCA. Ancient woodland accounts for 1% of the NCA (780 hectares) and therefore the woodland of the Bury at Tournerbury forms 0.47% of this cover. Within this context, however, it should be noted that Hampshire overall is one of the heaviest wooded counties in England and that the above statistics from Natural England do not include any woodland that is smaller than 2 hectares.*”

The grassland communities are associated with those that are largely species-poor such as MG7 *Lolium perenne* leys and related grasslands, MG10 *Holcus lanatus*-*Juncus effusus* rush-pasture and MG11 *Festuca rubra*-*Agrostis stolonifera*-*Potentilla anserina* grassland. They are subject to regular management (mowing, re-seeding etc).

The saltmarsh communities and margins of brackish water close to the harbour are not readily assignable to an NVC community. This was considered to be due to naturally occurring very small-scale variation in the communities at Tournerbury, which form part of the wilder saltmarsh communities surrounding Chichester harbour. Its size makes it of little significance within the overall area of the Chichester Harbour SSSI.

The majority of the habitats and plant species observed were widespread and common. The habitats are of no particular nature conservation value from a botanical perspective. The exception is the woodland of The Bury, which would be impossible to recreate once felled. In addition, deciduous woodland is classified as a UK Priority Habitat – a habitat of conservation importance under the *NERC Act 2006*.

In addition, some of the habitats have value from the perspective of the species they support e.g. the saltmarsh that contributes to the wider habitat of Chichester harbour that are used by overwintering birds.

No notable plant species were recorded.

As all the habitat on site will be retained under the proposals there is no impact on the habitat or the plant species that they contain. As such there is no need for mitigation or compensation measures.

5.2.2 *Plant species*

A *Rhododendron* species (*Rhododendron*) was originally planted on the western edge of the plantation and along the southern access road to woods cottage. It has expanded in that area only slightly and is being actively managed by the landowner. No other plant species listed on Schedules 8 or 9 of the *Wildlife and Countryside Act 1981* were recorded on the site.

5.3 *Bats*

There is good quality habitat for roosting, commuting and foraging bats on the development site; in the adjacent woodlands, especially given they contain ponds; and along the edges of the site.

Lighting, especially increased lighting, can affect commuting, foraging and roosting bats. Therefore, no artificial lighting should be directed onto the trees and woodland. Security lights should be avoided wherever possible and should operate on a timer and/ or motion sensor where they are necessary, to reduce negative impacts on bats.

Lighting will have been present on site throughout its use, particularly as a residential dwelling. Lighting has increased slightly during the sites use as a wedding and events location, although this has been minimised as much as possible.

Any external lighting should avoid spillage of greater than 1 lux onto the trees and woodland. The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.

Where lighting is necessary, downlighting/ hoods or similar devices should be used to allow the light to be directed onto where it is needed and avoid any light spill into the adjacent woodland. Alternatively, low-level lighting could be used instead..

There are records for the following bats within 1km of the site: common pipistrelle, soprano pipistrelle, brown long-eared bat, serotine, noctule, Leisler's bat, Daubenton's bat, whiskered/ Brandt's bat and *Myotis* species.

There is currently no information on what bat species are present on the site, including whether Woods Cottage is a bat roost. Therefore, bat surveys should be carried out in accordance with *Bat Surveys – Good Practice Guidelines, 3rd edition* (Bat Conservation Trust, 2016) to establish if there are any roosts either in Woods Cottage or in trees on or around the development footprint, as well as what species are using the site.

The site will be enhanced through the provision of bat boxes, especially in the plantation woodland where the younger trees mean that there are likely to be fewer trees with bat roost suitability.

5.4 *Dormice*

There is suitable habitat for dormice on the site with several broad-leaved woodlands and plantations on the site. However, there are no records of dormice within 1km of the site and the suitable habitat will be unaffected by the proposals. Therefore, there should be no impact on dormice should they turn out to be present.

5.5 *Great crested newt*

There are several small ponds within South Wood as well as the larger duck pond and the woodland provides good terrestrial foraging habitat. However, the footprint of the development is sub-optimal terrestrial habitat due to its close mown amenity grassland providing no cover and hence a risk of predation.

As the ponds are all to be retained and no terrestrial habitat is to be removed, there should be no impact on great crested newts, should they prove to be present.

5.6 *Otter and water vole*

There are no streams or rivers on the site. Although water voles can be found in brackish habitats they are uncommon in estuarine or saltmarsh habitats except where there are relatively stable, reed-fringed lagoons. In addition, there are no records for water vole within 1km of the site. Therefore, it is unlikely that water voles are present on site.

In addition, there is no suitable water vole habitat within the development footprint.

Otters are known to be present in the wider landscape and therefore, it cannot be ruled out that otters would cross the site. However they would be unlikely to cross the area of the development footprint, especially during an event.

There is no impediment to otters crossing any part the site at any time. As such there should be negligible impact on otters.

5.7 *Badger*

The mammal burrows are associated with The Bury. This is outside of the development footprint and as such will not be affected.

It is possible that badgers may forage on the amenity grassland within the development footprint. However, there are alternative foraging areas close by that the badgers could use if an event is taking place *e.g.* the improved grassland within the plantation woodland, and the horse-grazed paddocks adjacent to the site. Therefore, there should be negligible impact on badgers.

5.8 *Birds*

General

The breeding bird survey (Hampshire Ecological Services Ltd, 2015) identified the value of the site to birds as relatively low with only small numbers of the more common woodland birds being recorded. The majority of the species assemblage is typical of lowland woodland, but with a low number (in both species count and number of birds) of wetland species (e.g. grey heron, little egret and moorhen) recorded. Low numbers of non-breeding tufted duck were also recorded. With the exception of moorhen, this is almost certainly due to the presence of trees suitable for nesting and roosting combined with the coastal location of the woodland, rather than the site offering large areas of suitable wetland foraging habitat.

The habitat at the site is fairly uniform in value for birds with no notable difference in species composition or assemblage across the site. The species recorded on site are typical of the main habitats available on the site, which is characterised by species of woodland, but with a few wetland/coastal species also recorded.

Due to the presence of seven amber list species and two red list species recorded occurring at the site in locally sustainable populations the site is classed as having 'Local Nature Conservation Value' for birds. However, it should be noted that no significant numbers or flocks of notable species were recorded during the surveys and all species occurring on site are either common or fairly common within Hampshire and the surrounding area.

No vegetation is to be removed and as such there should be minimal impact on nesting birds.

The only potential impact would be to birds that may choose to nest near on in the trees and bushes in the development footprint. Many species easily become habituated to the presence of humans and readily nest in close proximity, as such is it not anticipated that there will be a significant impact on nesting birds. However, the site will be enhanced through the provision of bird boxes. The proposed bird boxes are summarised in *Table 5.8.1*.

Wintering birds

According to the Phase 1 report (Wenman, 2018), there is scattered [deciduous] scrub between the venue and the shoreline. This may provide some screening. If wedding or other events are to occur between autumn and early spring, access to the shoreline will need to be restricted temporarily to minimise disturbance to wintering birds. In addition, the existing screening should be further enhanced by additional planting (including evergreen species tolerant of coastal conditions).

Table.5.8.1. Bird boxes to be erected within the site with additional details on positioning to increase chances of occupancy.

Type (example)	Typical species	No.	Height	Additional information
Vivara Pro Seville 32mm Woodstone Nest Box 	Blue tits, great tits	2+	2-4m	- Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly. - Chances of occupation can be increased by positioning boxes near vegetation.
Vivara Pro Barcelona WoodStone Open Nest Box 	Robins, wrens	2+	≤ 2m	- Mount on a tree or large shrub - Conceal amongst foliage to keep well-hidden from predators.
Eco Starling nest box 	Starlings	2+	≤ 2m	Should be fixed onto a sturdy building, not onto fences or garden sheds due to its weight.

Heronry

The heronry and little egret nest are outside the development footprint.

Whilst it appears the number of grey heron nests has halved since 2015, this heronry is believed to have originated from a larger colony formerly present on the nearby Thorney Island (Eyre, 2015). As a small secondary colony, it is likely to be subject to natural fluctuations in population size. In addition, the presence of a rookery in the woodland to the south-east of the heronry may discourage the heronry from becoming bigger.

Little egret were confirmed breeding within the heronry during 2015 and 2019, with 2015 being the first record of little egrets at this location. They have continued breeding in the heronry despite the wedding and events traffic on the entrance track during their breeding season (April to June). Therefore, there is no impact on these species.

5.9 Widespread species of reptiles

Although there is suitable foraging and hibernation habitat for widespread species of reptile (such as slow-worms) on the site, the majority of the development footprint is short, mown amenity grassland and as such is unsuitable for reptiles due to the lack of cover and risk of predation.

In addition, no vegetation will be removed. Therefore although reptiles may be present at the edges of the development footprint, they will be unaffected by the proposals.

5.10 Other mammals

Rabbits are known to be present on site and it is likely other mammals such as foxes and deer are present, along with small mammals such as voles and shrews. No vegetation is to be removed, therefore any present will be unaffected by the proposals.

SUMMARY OF RESIDUAL IMPACTS AND SIGNIFICANCE

Following mitigation/ in absence of survey information the ecological receptors that may still be impacted if present are as follows:

- commuting and foraging bats;
- bat roost(s), if present within the development footprint; and
- a small number of birds nesting within the development footprint.

The residual impacts for habitats and species groups are summarised in *Table 6.1*.

Table 6.1. Summary of residual impacts – broad habitat types and species groups.

Ecological Receptor	Nature Conservation Importance of Receptor	Residual Impact			Complexity and Magnitude / Extent	Duration	Significance
		Impact	Confidence	+ve / -ve / none			
Bats	High	Moderate	Probable	-ve	Impact on commuting and foraging bats, and any roost(s) near the footprint &/ or in Woods Cottage	Permanent	Significant
Birds	Medium	Low	Probable	-ve	Disturbance/ displacement to breeding birds in the trees within the development footprint and in woodland on the edges of the event area footprint.	During events	Moderately significant

Figure 1. Aerial photographs showing the location of the site (outlined in red).

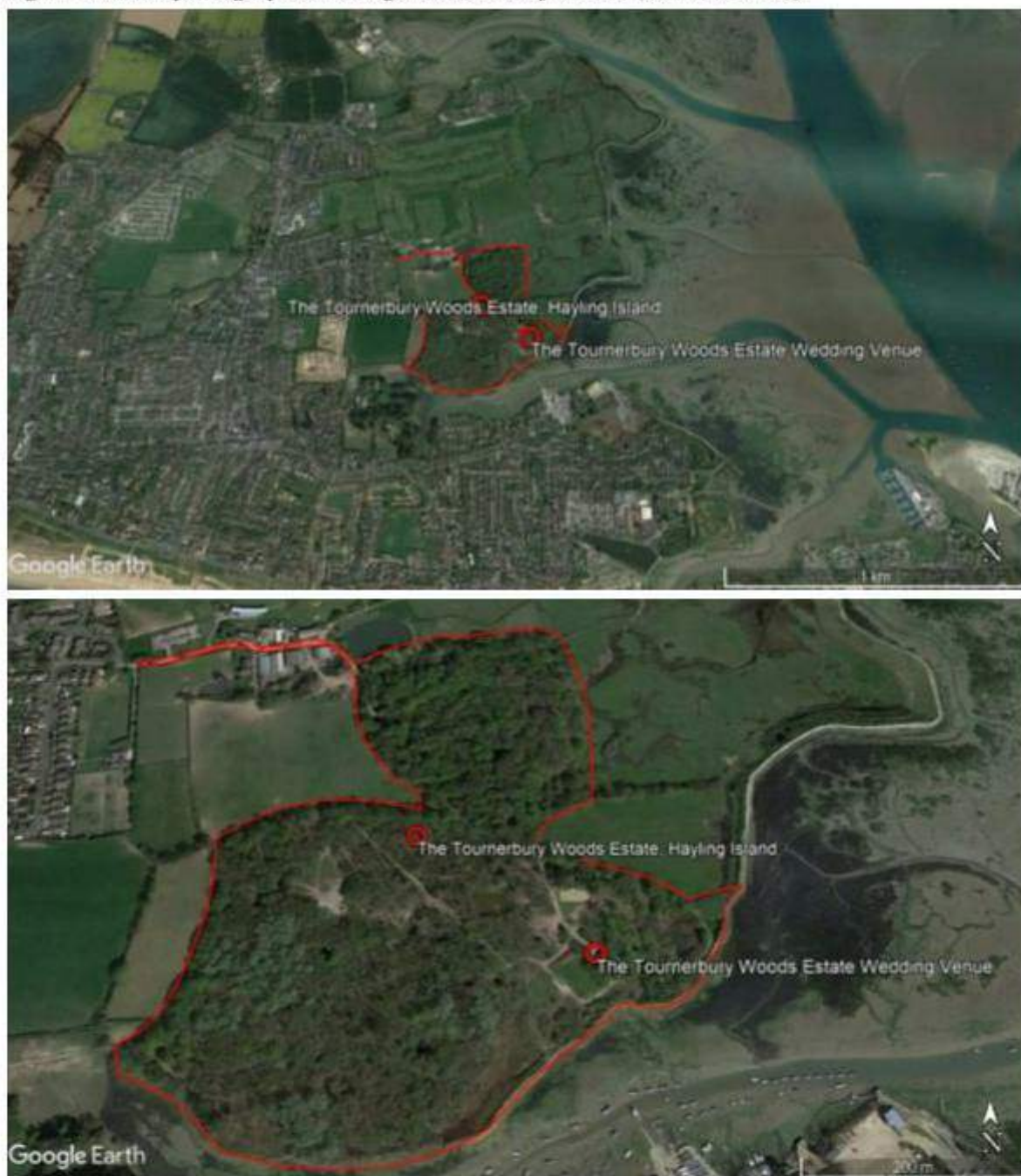
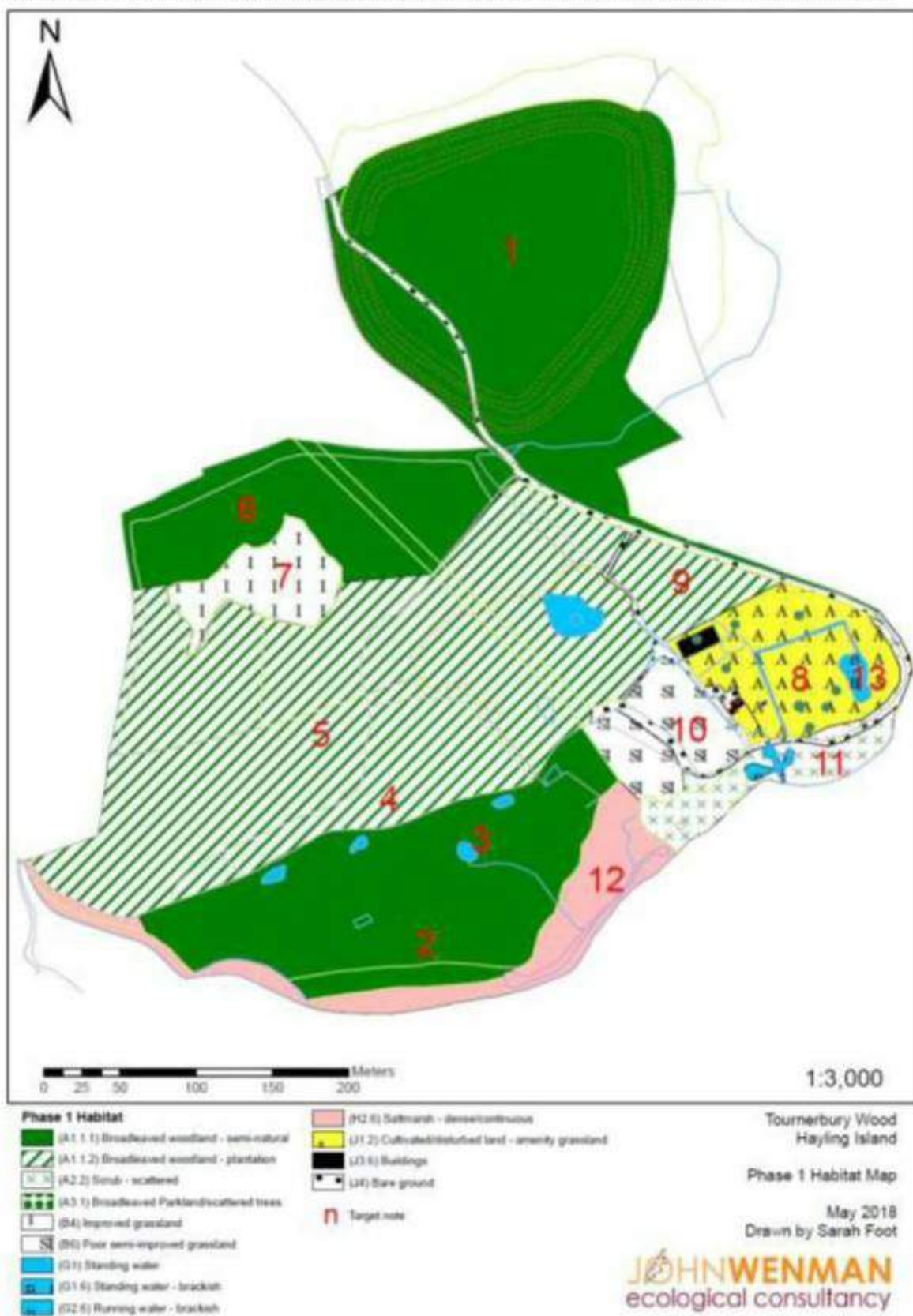


Figure 2. OS map showing the location of the site as indicated by the green arrow with the wider Townerbury estate outlined in red.



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Figure 3. Phase 1 Habitat Survey map produced by John Wenman Ecological consultancy LLP.



John Wenman Ecological Consultancy
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