FOOTPRINT ECOLOGY

New Forest Wetland Restoration Vegetation Monitoring: Pondhead and Wootton: Stage 2, 2024

Higher Level Stewardship Agreement.

The Verderers of the New Forest AG00300016

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Summary

Pondhead and Wootton are two sites in the New Forest where freshwater and wetland restoration has been carried out as part of the Higher Level Stewardship agreement with the New Forest Verderers. Restoration work was designed to improve the condition of the sites, which were unfavourable due to historic modifications to the watercourses. These modifications had resulted in straightened, incised channels, increased erosion, lack of in-stream habitat diversity, a disconnect between the floodplain and the watercourse and the loss of typical wetland features due to side drains. Restoration work at Pondhead was carried out in 2017-18 and at Wootton between 2016 and 2018.

The New Forest Freshwater and Wetland Restoration Plan (FWRP) has been developed on behalf of the New Forest Freshwater and Wetland Restoration Forum to establish common ground and provide guidance on the restoration process, including overall objectives, criteria for the selection of sites for restoration, likely measures of success, pre-restoration surveys, restoration protocols and appropriate monitoring. It provides a methodology for assessing the area and quality of the habitats after restoration. Forestry England has therefore commissioned post-restoration surveys at both Pondhead and Wootton using the methods specified in the plan, as although a number of targeted monitoring projects have been carried out at both sites, to date these have not provided an overall narrative of the changes due to restoration and a description of the sites as they are now.

A previous report (Lake and Caals, 2024) details the results of the first stage (mapping the distinctive New Forest freshwater and wetland “meso-habitats”). This report documents the findings of the second stage and provides a more detailed consideration of the vegetation characteristics of key meso-habitats. The focus is on describing the meso-habitats as they are now, but some reference is made to previous descriptions of the site where possible/relevant.

The 2024 survey indicates that the interaction between the watercourse and floodplain appears to have been successfully restored at Pondhead and that the Ephemeral Headwater Stream, Wet Lawn, Alder Moor and Bog Woodland currently align well with the descriptions of good quality New Forest meso-habitats (Freshwater and Wetland Restoration Forum, 2024). The Riverine Woodland and Wooded Floodplain Stream are currently less structurally diverse than high quality examples but are likely to diversify over time. All habitats appear to have recovered well from the restoration interventions.

At Wootton, the restoration has resulted in a much more diverse watercourse with more in-channel and marginal vegetation, and has changed the hydrology of the floodplain within the study area. This is changing the character (and probably the extent) of the Alder Moor, which has become more structurally diverse and wetter. The Wet Lawn at Wootton is a good example of this meso-habitat type and provides niches for a number of characteristic scarce and vulnerable plant species. Again, the habitats have recovered well from the restoration interventions.

Contents

Acknowledgements

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1. Introduction

1.1 Pondhead and Wootton are two sites within the New Forest Site of Special Scientific Interest (see Map 1) that were subject to historic drainage works. The existing watercourses were widened, deepened, straightened and embanked, leading to increased erosion and an inconsistent interaction with the surrounding floodplain. Restoration schemes were carried out between 2016 and 2018 under the New Forest Higher Level Stewardship agreement with the New Forest Verderers with the aim of reinstating a more natural hydrological regime, including restoring reaches of the Beaulieu River and the Avon Water to their original meandering course, reconnecting the stream to the floodplain and reducing further erosion by slowing the flow. Wootton is a much more extensive site than Pondhead, extending for some 3.5km.

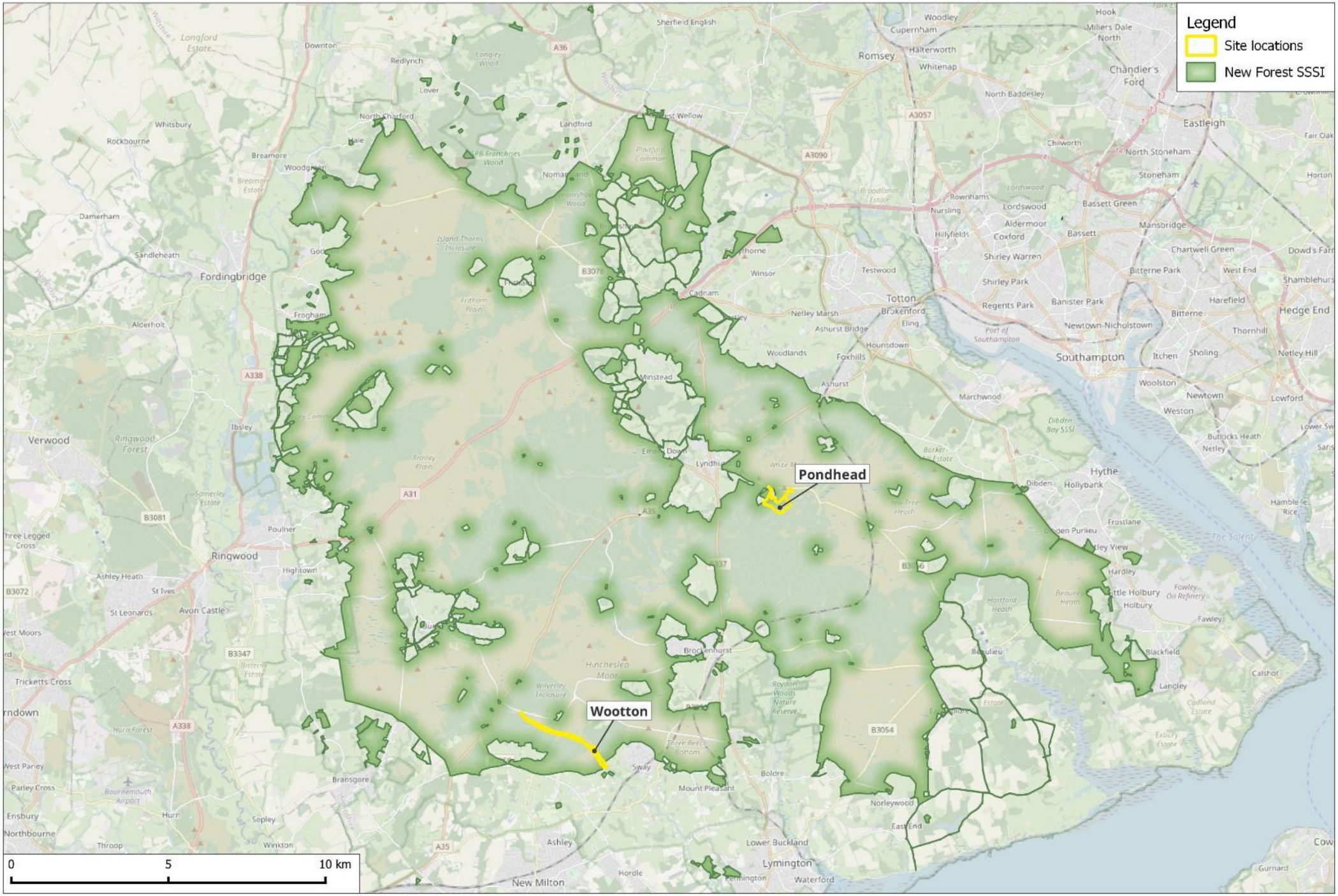
1.2 Five years on from the completion of the restoration works, Forestry England commissioned some biological monitoring to describe the freshwater and wetland habitats in the vicinity of the restoration work. This monitoring follows the guidance set out in the New Forest Freshwater and Wetland Restoration Plan (FWRP) (New Forest Freshwater and Wetland Restoration Forum, 2024). As changes resulting from the restoration interventions are driven by natural processes, the exact outcome cannot be predicted, but an overall increase in the extent and diversity of wetland habitats is likely to be a desired outcome. The protocol therefore involves recording the location and extent of typical New Forest “meso-habitats”, assessing the quality of restored habitat and taking fixed-point photographs.

1.3 Meso-habitats are an important feature of the New Forest freshwaters and wetlands and include potentially small features such as poached and disturbed margins and ephemeral pools as well as typically larger habitats such as wet lawns. The mapping of meso-habitats is recommended because the UK habitat classification (UKHab) does not adequately differentiate the quintessential New Forest habitats, while National Vegetation Classification maps, although providing more detail about the vegetation communities, do not show the distribution and extent of the habitats without further interpretation (the New Forest appears to have been under-represented in the datasets used to create the NVC). The meso-habitats are described fully within the FWRP.

1.4 The FWRP also recommends more detailed vegetation surveys to assess the quality of the restored habitat – for example, to determine whether there is there an increase in the cover and diversity of bog-mosses *Sphagnum* in Valley Bog, or identify if marginal Poached and Disturbed Habitat include characteristic species such as Pillwort *Pilularia globulifera.*

1.5 Although restoration work had already been carried out at Pondhead and Wootton (so a baseline could not be established using this method), the overall approach can still be used to map and describe the meso-habitat now present. This report summarises the detailed surveys of the character of the vegetation, following on from the meso-habitat mapping that was carried out as Stage 1, in 2023 (see Lake & Caals, 2024).

Map 1: Site locations



2. Methods

2.1 Methods used to determine the site boundary and undertake the mesohabitat mapping are provided in Lake and Caals (2024). Here we detail the methods used to assess the vegetation characteristics.

2.2 The cover of all plant species found within 2m x 2m quadrats was recorded for each meso-habitat. Random points were generated with a GIS as follows:

1. Polygons of the same meso-habitat type were merged and and non-wetland habitat mapped for context was deleted.
2. Polygons were buffered internally by 10m, to ensure that each quadrat would be at least 10m from the edge of the polygon (to allow for any mapping inaccuracies).
3. 15 random points were created within each habitat at Pondhead and 25 at Wootton (a much larger site), with a minimum distance of 10m between points.

2.3 More points were created than were required so that any points that were found to fall within a different habitat to the one allocated (e.g. due to complex habitat mosaics), it could be replaced by another random point.

2.4 Table 1 shows the number of quadrats recorded within each meso-habitat present within the study area at Pondhead and at Wootton. A minimum of 15 quadrats were recorded from each habitat type, unless the habitat patch was too small (e.g. Bog Woodland at Pondhead). In some cases, a larger number were recorded to help ensure that the quadrats were representative (e.g. the Wooded Floodplain Stream at Wootton, which is over 3.5km in length). In some cases, additional quadrats were recorded if the habitat appeared to be particularly variable and when time permitted. Quadrat locations are shown in Maps 2-3 and grid references are provided in the accompanying Excel spreadsheet.

2.5 The percentage cover of vascular plants, bryophytes and lichens were recorded from one 2m x 2m quadrat at each random point. Linear quadrats of 1m x 4m or 0.5 x 8m were used where necessary, for example, for marginal or in-channel vegetation. The percentage of bare ground, open water, litter and dung was also recorded plus the bulk of the vegetation (generally referred to as height) using a drop disc 15cm in diameter and 200g in weight (this measurement was omitted for stream quadrats, as the vegetation was often submerged). Within wooded habitat, an estimate was

made of canopy species cover within a 25m x 25m quadrat centred on the smaller quadrat. Photographs of each quadrat were also taken for reference.

Table 1: Quadrats recorded in different meso-habitat types at Pondhead.

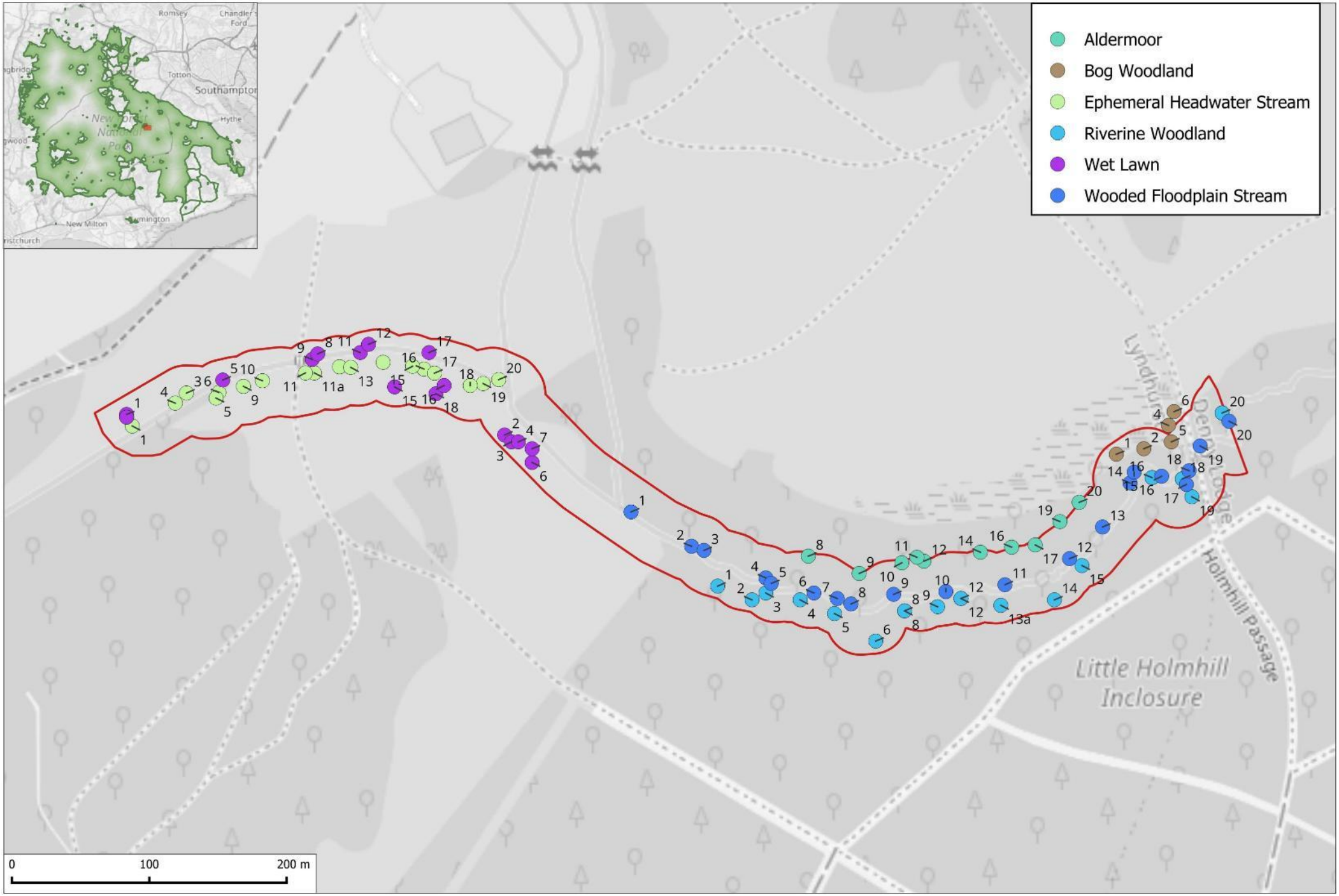
New Forest habitats	No. of quadrats
Alder Moor	15
Bog Woodland	5
Ephemeral Headwater Stream	19
Riverine Woodland	21
Wet Lawn	16
Wooded Floodplain Stream	20

Table 2: Quadrats recorded in different meso-habitat types at Wootton.

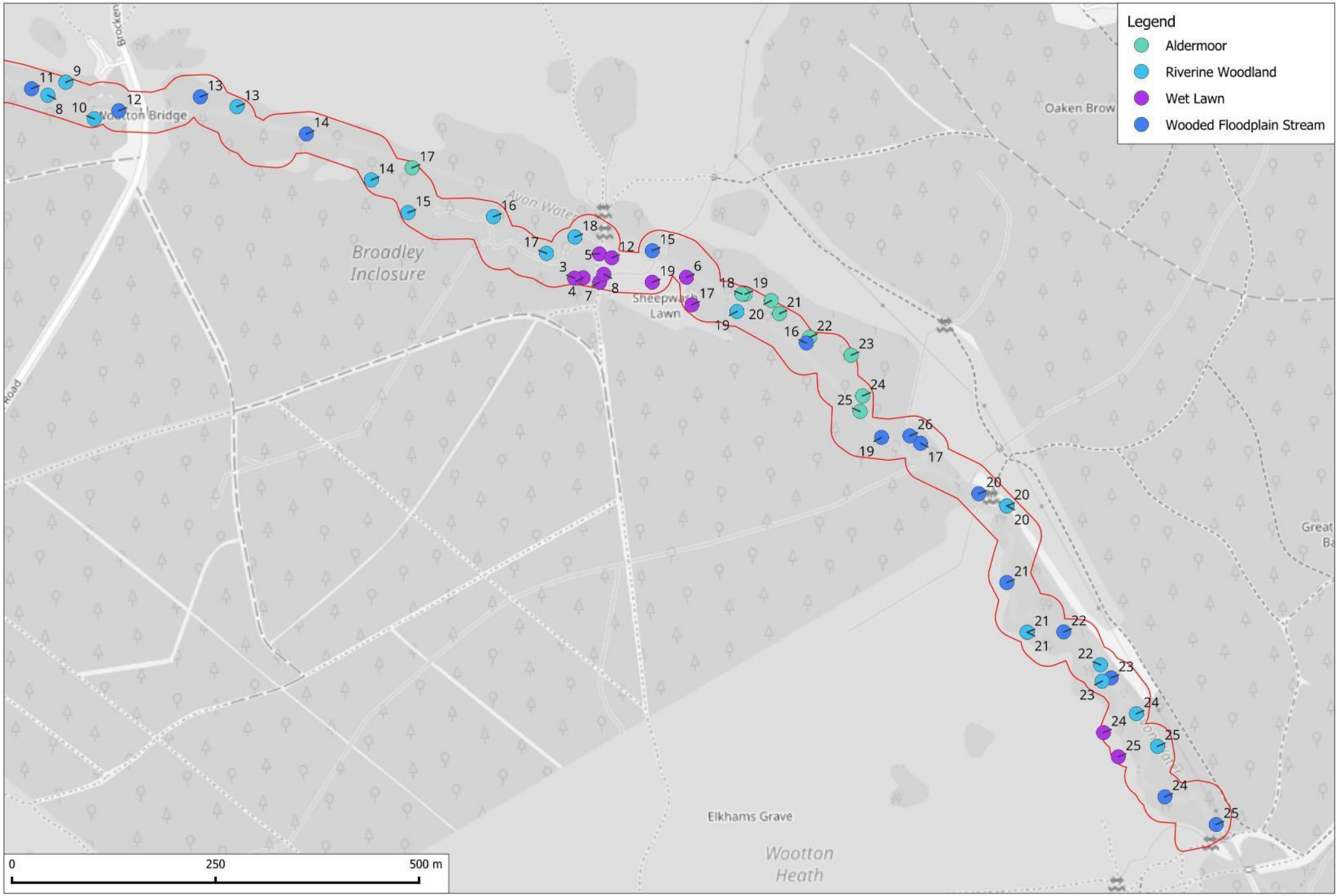
New Forest habitats	No. of quadrats
Alder Moor	23
Riverine Woodland	17
Wet Lawn	15
Wooded Floodplain Stream	26

2.6 Surveys were conducted between 21st and 29th August at Pondhead and 23rd August and 9th September 2024 at Wootton.

Map 2: Pondhead quadrat locations



Map 3a Wootton quadrat locations



3. Results

3.1 Figures 5-9 and Table 3 provide summary data about the vegetation surveyed in 2024 (i.e. sward bulk, species-richness and percentage cover of bare ground, plant litter and key plant groups) at Pondhead. Figures 14-18 and Table 6 provide the same for Wootton. The graphs are box plots in which the solid box shows the interquartile range, with the median value represented by X. Whiskers indicate the minimum and maximum values with outliers indicated as separate points beyond the whiskers. The raw data are provided in an Excel spreadsheet accompanying this report and lists of the species recorded from quadrats in each meso-habitat type can be found in Appendix 1. The following sections describe the meso-habitats recorded at each site.

Pondhead

3.2 Lake and Caals (2024) should be referred to for a description of the landscape setting of the two areas included within the Pondhead study boundary, namely Parkhill Lawn and Matley Inclosure Bog. Here, we provide more detail about the character of the vegetation within each meso-habitat type. Note that, to distinguish them from other habitat types, the names of the New Forest meso-habitats have been capitalized throughout.

Ephemeral Headwater Stream

3.3 The restored shallow and meandering watercourse supports a short sward of Soakway vegetation very typical of slow-flowing Ephemeral Headwater Stream. The most frequent and abundant species are Bog Pondweed *Potamogeton polygonifolius*, Marsh St. John's-wort *Hypericum elodes* and Floating Club-rush *Eleogiton fluitans*, with Small Sweet-grass *Glyceria declinata.* Other frequent and relatively abundant species include Lesser Spearwort *Ranunculus flammula*, Common Spike-rush *Eleocharis palustris*, Marsh Pennywort *Hydrocotyle vulgaris* and Jointed Rush *Juncus articulatus.* The vegetation cover is high (over 100% in places, indicating a level of vegetation complexity), with limited waterflow, as is typical of this type of watercourse in the summer months.

3.4 The sinuous watercourse is generally natural in appearance, with shallow sloping margins that form a gradual transition into the adjacent Wet Lawn,

particularly west of the bridge. As described in the meso-habitat survey (Lake and Caals, 2024), downstream of the bridge the form is a little less natural in appearance, with slightly steeper and regular banks. However, the centre of the channel still supports typical species in this stretch (see Figure 1) and marginal livestock poaching means that the profile of the banks has softened a little since 2023.

Figure 1: Typical Soakway vegetation within the restored Ephemeral Headwater Stream at Pondhead.

Wooded Floodplain Stream

3.5 Downstream, the Ephemeral Headwater Stream is joined by the drain that runs down the eastern side of Parkhill Lawn. It was not possible to include this drain in the restoration, and after the junction the channel becomes wider and deeper as it was graded to match the deeper side drain. The enlarged stream soon enters the canopy of Matley Bog Inclosure where it takes on the characteristics of a Wooded Floodplain Stream. The channel is shaded (mainly by old, coppiced Alder *Alnus glutinosa* with some Ash *Fraxinus excelsior* and Oak *Quercus robur*) and the in-channel vegetation is consequently much reduced - two of the 20 random quadrats contained no vegetation at all. In the remainder, Fool's Watercress *Helisciadium nodiflorum,* Unbranched Bur-reed *Sparganium emersum* and Water Starwort *Callitriche*

sp. are common (recorded from half of the quadrats), together with Small Sweet-grass. Bog Pondweed and Lesser Spearwort are also reasonably frequent, with very occasional Water Mint *Mentha aquatica.* Water Purslane *Lythrum portula*, Water-pepper *Persicaria hydropiper* and Creeping Bent *Agrostis stolonifera* are found where the margins are poached by livestock.

3.6 The watercourse is not yet as complex as might be expected from an unmodified woodland watercourse and as yet lacks any subsidiary channels formed by debris dams or the resistance of trunks and roots to erosion, but the bottom image in Figure 2 (taken earlier when water levels were significantly higher) shows how debris is changing the watercourse during periods of high flow.

Figure 2: The Wooded Floodplain Stream, which is generally lightly vegetated and shows some of the features typical of this type of New Forest watercourse (Bottom: S. Egleston).

3.7 The reinstated meander increases the length of the watercourse and adds to its physical diversity. The channel also includes gravelly riffles, deeper pools,

and both shallow poached edges and steeper banks. A few remnant sections of spoil bank remain where it was not possible to remove them without felling trees but are unlikely to impede the overall interaction of the watercourse with the floodplain.

Wet Lawn

3.8 The Ephemeral Headwater Stream flows through a shallow valley largely occupied by closely-grazed Wet Lawn. Although described as Wet Lawn, it is a fine-grained mosaic of Wet Lawn and Poached and Disturbed Habitat. It is relatively species-rich overall (with over 50 species recorded from 16 quadrats). It characterised by abundant Velvet Bent *Agrostis canina*, with frequent Common Sedge *Carex nigra,* Lesser Spearwort and Greater Bird's-foot-trefoil *Lotus pedunculatus.* A range of herbs are present including characteristic lawn species such as Meadow Thistle *Cirsium dissectum* and Bog Pimpernel *Anagallis tenella* and Marsh Pennywort *Hydrocotyle vulgaris.* Other small sedges are present at low frequency including Yellow Sedge *Carex demissa,* Star Sedge *Carex echinata*, and Carnation Sedge *Carex panicea*. The most frequent bryophyte within quadrats was the bog moss *Sphagnum inundatum.*

3.9 The Poached and Disturbed habitat is generally characterised by scuffed bare ground with species such as Marsh Cudweed *Gnaphalium uliginosum*, Water-pepper and Bulbous Rush *Juncus bulbosus*. There is a small amount of Pillwort in Poached and Disturbed Habitat at the crossing point (50% coverage over about 1m x 1m at SU31758,06971). This Nationally Scarce, Near Threatened species is not listed in the pre-restoration Pondhead Biodiversity Statement and does not appear in the biological records for the site held by the Hampshire Biological Information Centre (see Appendix 2). The micro-topographical relief caused by hoofprints is reflected in the variable sward height as measured by the drop disk – in generally the vegetation itself is very short.

3.10 As the ground rises gently away from the watercourse, the lawn becomes drier, with Common Bent *Agrostis capillaris,* Sweet Vernal-grass *Anthoxanthum odoratum,* Mat Grass *Nardus stricta* and low-growing herbs such as Tormentil *Potentilla erecta*, Procumbent Pearlwort *Sagina procumbens* and Self-heal *Prunella vulgaris* together with the mosses *Hypnum jutlandicum* and *Rhytidiadelphus squarrosus*. Here scuffed bare ground is characterized by more ruderal species such as Broad-leaved Plantain *Plantago major.* Just beyond the study boundary, Chamomile *Chamaemelum nobile* becomes

abundant. The whole area is used by large numbers of livestock, as seen in the frequency of dung and the short sward (see Table 3).

Riverine Woodland

3.11 Riverine Woodland is in Matley Inclosure Bog, which has been thrown open to livestock and is therefore closely grazed. It is found on both sides of the Woodland Floodplain Stream on drier ground, possibly on a natural levee created during flood events which deposited alluvial soils along the watercourse (Sanderson, 2020). To the south, this woodland type reaches the study area boundary, while on the north side of the stream it occupies a narrow strip along the watercourse, grading rapidly into wetter Alder Moor on more peaty soils adjacent to the nearby Valley Bog (which falls outside of the study boundary).

3.12 The woodland has a canopy of mature Alder *Alnus glutinosa* (mostly old coppice), with some Oak *Quercus robur* and younger Birches *Betula* sp. and occasional Ash *Fraxinus excelsior*. Holly *Ilex aquifolium,* Blackthorn *Prunus spinosa,* Hawthorn *Crataegus monogyna* and Grey Willow *Salix cinerea* occasionally form a lower canopy. The woodland is structurally very simple, with little or no understorey and a very short, homogenous ground flora very dominated by graminoids (see Figure 5 and Figure 8). In wetter areas this comprises Velvet Bent, Creeping Bent *Agrostis stolonifera*, Bulbus Rush and Soft Rush. Elsewhere, species typical of drier woodland flora such Common Bent plus, Wood Sorrel *Oxalis acetosella*, Wood Sedge and Bracken *Pteridium aquilinum* are found. There are some diseased Ash trees which, when they fall, are likely to increase the structural diversity of the habitat.

Figure 3: Riverine Woodland adjacent to the watercourse within Matley Inclosure Bog.

Alder Moor

3.13 Alder Moor occupies the zone between the drier Riverine Woodland and the adjacent Valley Bog and Bog Woodland. This woodland type has developed over peat and is wetter than the Riverine Woodland found on the better-drained alluvial gley soils along the watercourse. Alder is the predominant canopy tree, with some Downy Birch *Betula pubescens* and a little Oak and Grey Willow. The ground flora is again dominated by graminoids, but is distinctly wetter with bog mosses among the grasses and rushes. It is swampier in patches, where flood water backs up against the stream levee, with frequent Remote Sedge *Carex remota*. Occasional tall fen herbs include Yellow Loosestrife *Lysimachia vulgaris* and Meadowsweet *Filipendula ulmaria.* Drier areas support Lady Fern *Athyrium filix-femina* and Narrow-buckler Fern *Dryopteris carthusiana.* This area is more structurally diverse than the Riverine Woodland, and there is more fallen deadwood (see Table 3). It does not support the tussock sedges and Reed sometimes found in valley mire

Alder Moor, but is more typical of flushed stands found on floodplains as described in the FWRP.

Bog Woodland

3.14 A small area of Bog Woodland is located at the north-eastern end of the study area and merges with the Valley Bog on which it presumably originally developed. Very wet underfoot, it is characterised by Downy Birch with coppiced Alder and Grey Willow (often fallen out) growing in soft peat. Scots Pine and Beech are also occasionally present in the canopy and are on drier hummocks that support Wood Sorrel and Tormentil. Between the hummocks, Velvet Bent, Bulbous Rush and cushions of *Sphagnum palustre* with some Purple Moor-grass and Soft Rush create a spongy ground flora.

Figure 4: A quadrat location (LEFT) within Bog Woodland (RIGHT), showing the soft, peaty conditions and the wet, acidic nature of the ground flora which includes bog mosses, Purple Moor-grass, Soft Rush and Bog Myrtle.

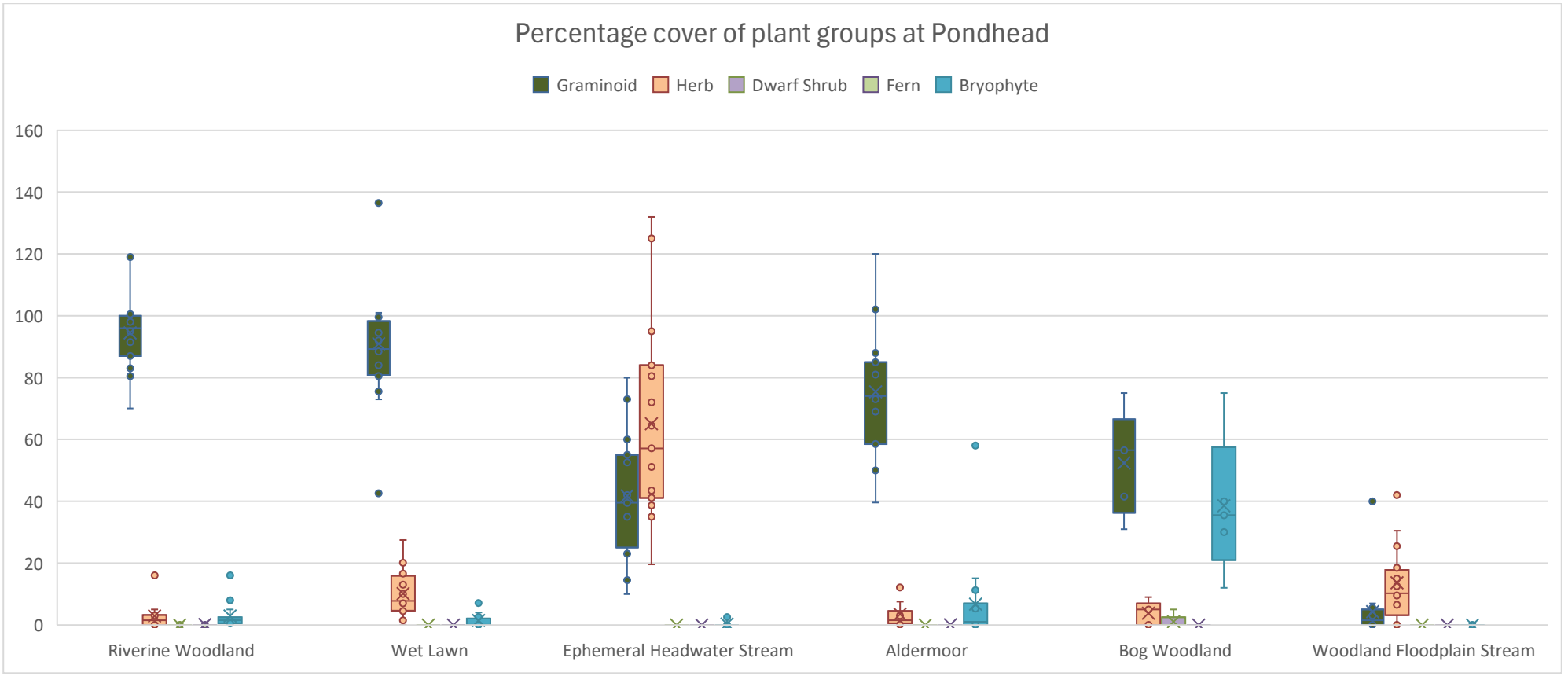


Figure 5: Box plots indicating the cover of different plant groups according to habitat type at Pondhead

Table 3: Mean (+/- 1 S.E.) species richness and other variables recorded from quadrats within each wetland habitat type surveyed at Pondhead.

	Riverine Woodland	Wet Lawn	Ephemeral Headwater Stream	Aldermoor	Bog Woodland	Wooded Floodplain Stream
Species richness	11.3 (+/-0.8)	11.4 (+/-1.1)	10.2 (+/-0.9)	13.7 (+/-1.2)	14 (+/-1.6)	4.6 (+/-0.3)
Average sward height (cm)	4.1 (+/-0.8)	5.4 (+/-0.9)	8.2 (+/-1.1)	7 (+/-0.7)	10.3 (+/-1.1)	3.4 (+/-1.3)
Bare ground (%)	3.8 (+/-1.3)	6.3 (+/-2.8)	17.7 (+/-3.4)	13.4 (+/-5.4)	1.5 (+/-0.9)	-
Total veg cover (%)	101.5 (+/-3.2)	102.6 (+/-4.9)	107.1 (+/-5.1)	86.1 (+/-5.1)	96.1 (+/-3.9)	17.9 (+/-4)
Leaf litter (%)	5.7 (+/-1.8)	0.9 (+/-0.2)	0	7.2 (+/-2.1)	1 (+/-0.4)	0
Dung (%)	0.2 (+/-0.1)	2.6 (+/-0.4)	0	1.7 (+/-0.4)	0.3 (+/-0.2)	0
Deadwood (%)	1.2 (+/-0.3)	0.4 (+/-0.1)	0	4 (+/-0.7)	1.6 (+/-1)	12.5 (+/-1.5)

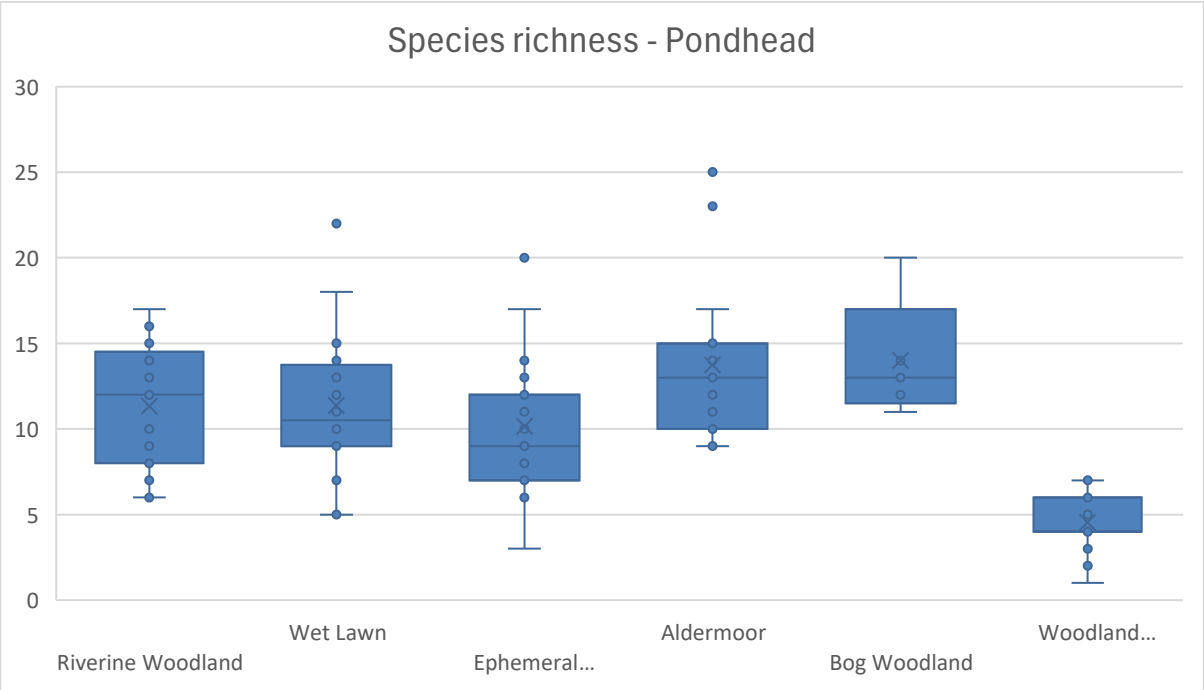


Figure 6: Average species richness per 2m x2m quadrat within different meso-habitats at Pondhead in 2024.

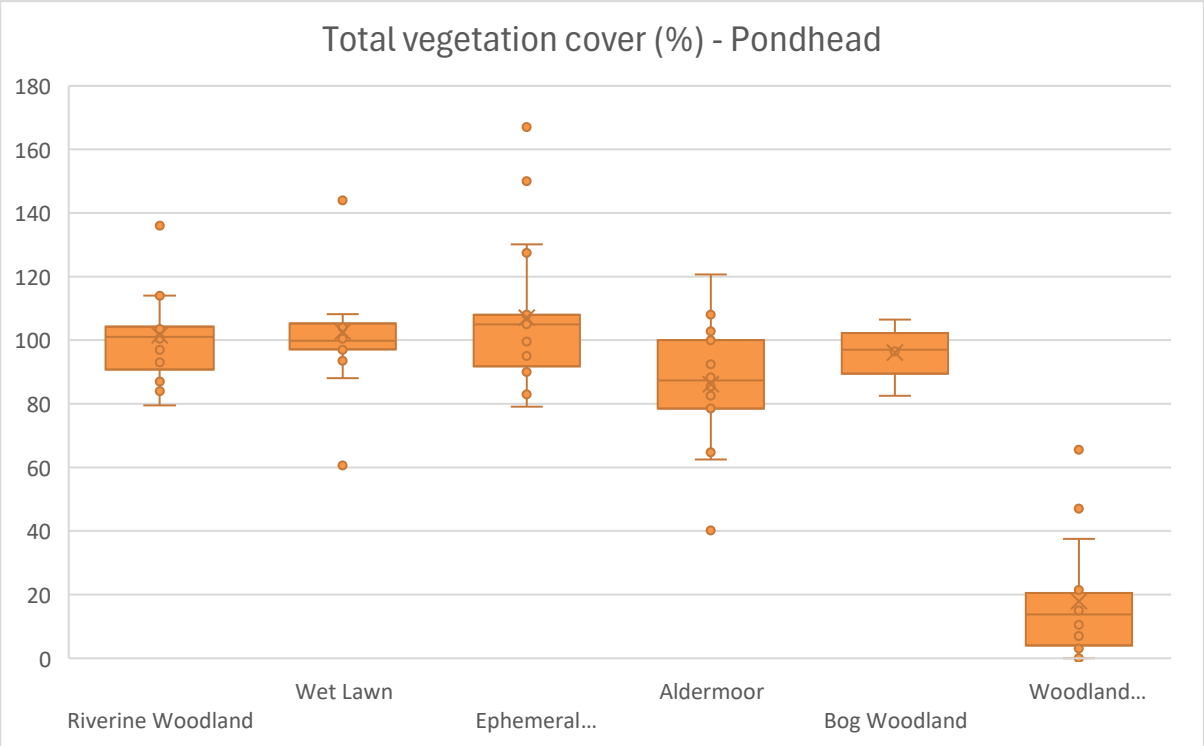


Figure 7: Average total vegetation cover (i.e. all plant groups summed) within different meso-habitats Pondhead in 2024. Totals over 100% indicate a more complex sward structure in which different species overlap.

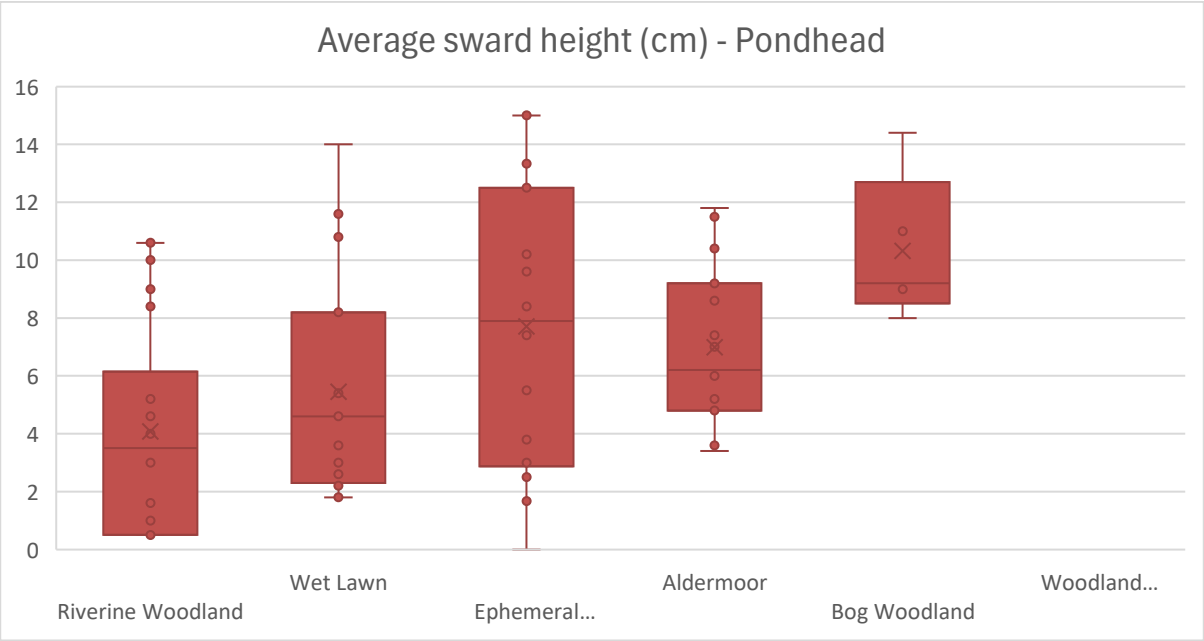


Figure 8: Average sward height measured by drop disk within different meso-habitats at Pondhead 2024 (sward height was not measured for the woodland watercourse).

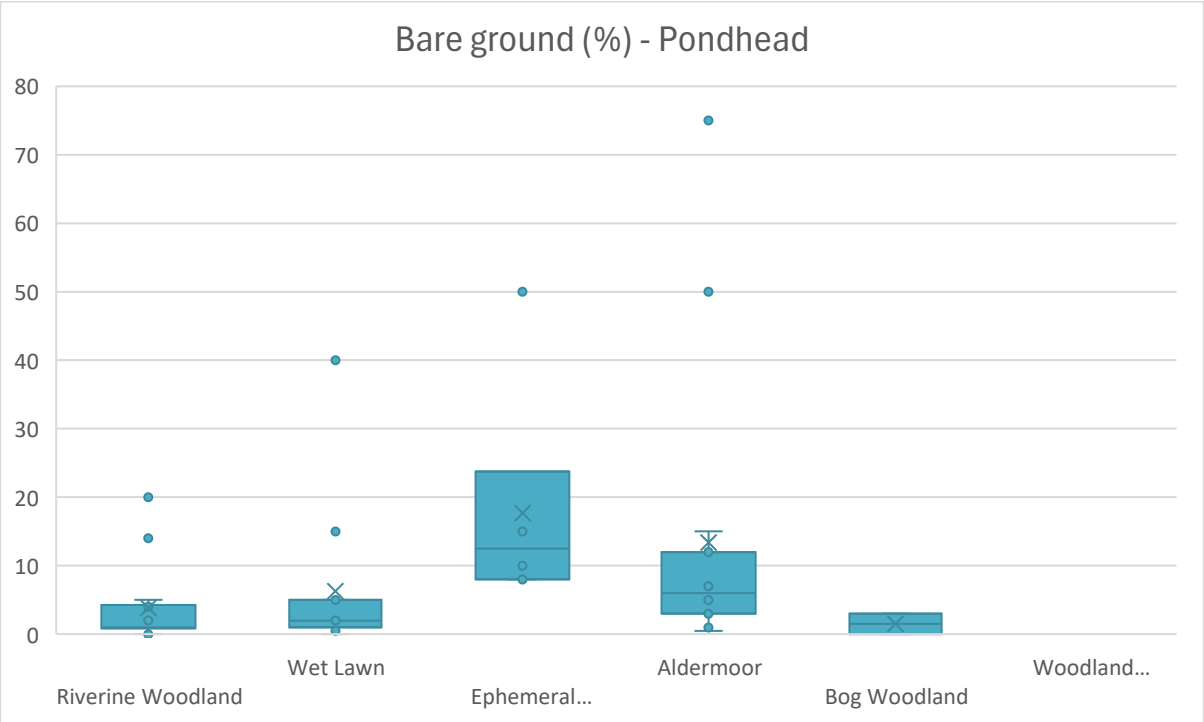


Figure 9: Average cover of bare ground within different meso-habitats Pondhead in 2024 (bare ground was not recorded within the woodland watercourse).

Wootton

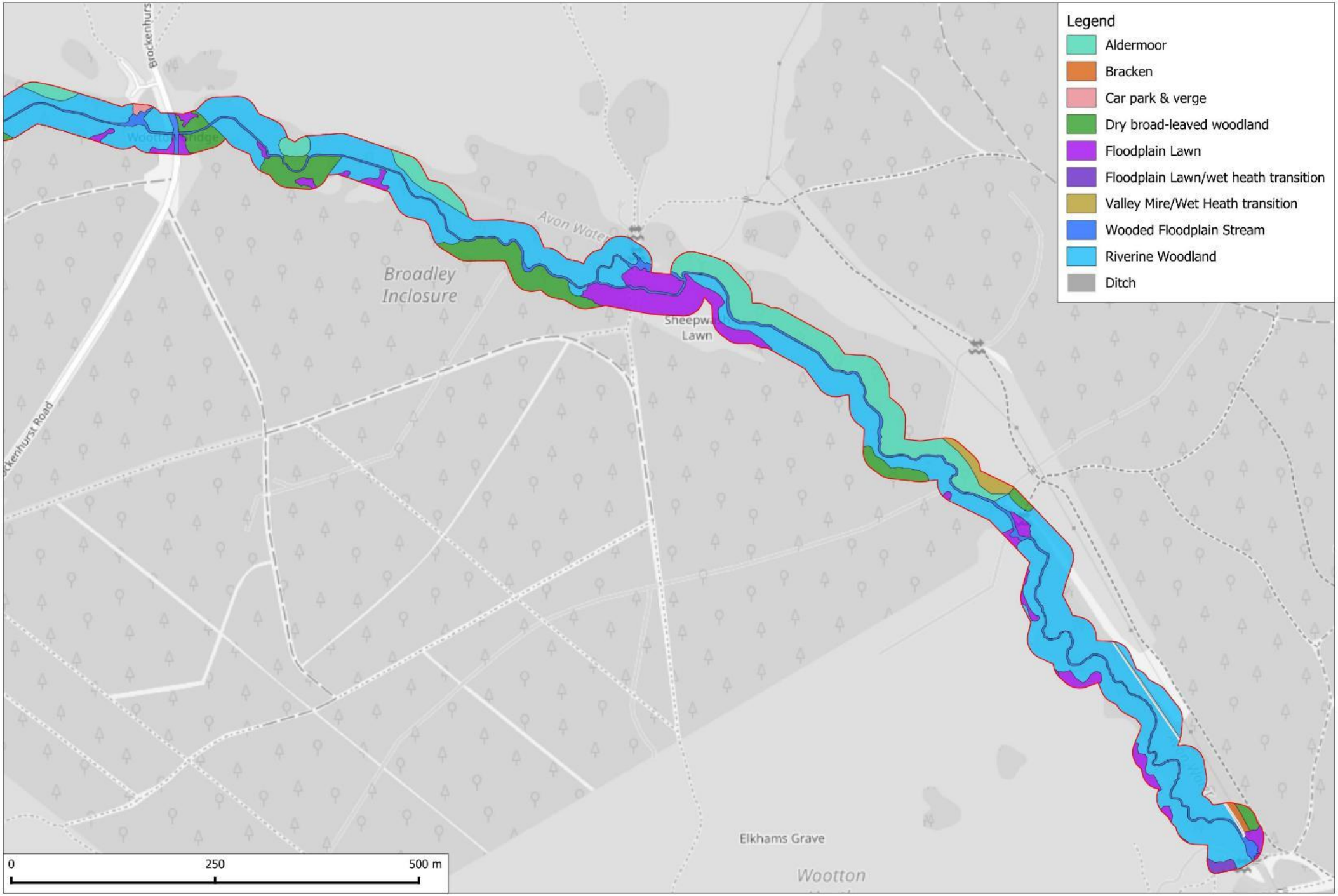
3.15 Lake and Caals (2024) provide a description of the landscape setting of the Avon Water at Wootton. More detail about the vegetation types is provided here. The initial mapping was updated following further scrutiny of the meso-habitats in the field, due to the difficulty in traversing the site in 2023. The updated habitat map is shown in Map 3 and habitat areas/lengths in Table 4. Following discussion with FE, the small areas of transitional habitat were omitted from the survey.

Table 4: Updated meso-habitat areas at Wootton following additional survey work. Freshwater and wetland habitats are in bold text.

Meso-habitat	Area/length
Aldermoor	**4.11 ha**
Bracken	0.03 ha
Car park & verge	0.02 ha
Dry broad-leaved woodland	3.51 ha
Floodplain Lawn	**1.30 ha**
Floodplain Lawn/wet heath transition	**0.05 ha**
Riverine Woodland	**8.24 ha**
Valley Mire/Wet Heath transition	**0.13 ha**
Ditch (engineered channel)	0.19 km
Wooded Floodplain Stream	**3,839 km**

Map 4: Wootton habitats (updated in 2024)

Map 4a: Wootton habitats (updated in 2024)



Wooded Floodplain Stream

3.16 As is typical of shaded streams, the vegetation cover is low in the restored watercourse (see Table 6). A total of 20 species was recorded, with a mean per quadrat of 2.9. Water-starwort *Callitriche* sp. is the most frequent species and is found where canopy gaps increase the level of illumination. Unbranched Bur-reed *Sparganium emersum* is the next most common species, with more occasional Spiked Water-milfoil *Myriophyllum spicatum*, Bog Pondweed, Lesser Spearwort and Water Crow-foot *Ranunculus* spp. Shallow margins (which are often lightly poached e,g. Figure 10) support occasional Fool's Watercress *Helisciadium nodiflorum,* Water Mint, Water-pepper, Creeping Bent and Floating Sweet-grass *Glyceria fluitans*.

3.17 Deadwood is locally frequent, with some fallen trunks across the watercourse adding to its diversity. Canopy cover is 48.8% (mean).

Figure 10: Woodland Floodplain Stream in dappled shade with Unbranched Bur-reed (LEFT) and unshaded with a broad, poached margin with Fool's Watercress, Nodding Bur-marigold *Bidens cernua* and Water-pepper (RIGHT).

Wet Lawn

3.18 Only a small amount of Wet Lawn falls within the study boundary, mainly at Sheepwash Lawn (SZ256994), with small pockets elsewhere in the form of small glades within the Riverine Woodland (see Figure 11). The method used to locate quadrats requires polygon boundaries to be buffered to avoid quadrats spanning habitat boundaries. As a consequence, the small glades were not well-represented in the quadrat data. However, two quadrats were located in a glade towards the western end of the site.

3.19 The vegetation within the Wet Lawn is quite varied, with fine-grained variations relating to modest changes in topography. It is typically grassy, dominated by closely-grazed Creeping Bent, Velvet Bent and Sharp-flowered Rush with Lesser Spearwort. It includes wetter and drier areas plus some damp hollows. Typical Wet Lawn species present include Marsh Pennywort, Greater Bird's-foot-trefoil, Common Sedge, Oval Sedge *Carex leporina,* Bog Pimpernel, Small Sweet-grass, Water-pepper, and Marsh Bedstraw. Species indicative of more mesic conditions include Tormentil, Self-heal *Prunella vulgaris,* Dandelion *Taraxacum* agg., Ribwort Plantain *Plantago lanceolata*, Creeping Buttercup *Ranunculus repens*, White Clove *Trifolium repens* and Sweet Vernal-grass. Overall, the grassland is species-rich. Species of interest falling outside the samples include Marsh Marigold *Caltha palustris*, Angelica *Angelica sylvestris*, Meadowsweet, Meadow Thistle, Devil's-bit Scabious *Succisa pratensis*, Sneezewort *Achillea ptarmica*, Heather *Calluna vulgaris* and Lesser Skullcap *Scutellaria minor*. In addition, Purple Moorgrass/Sedge lawn communities are found along the inclosure edges. These were not covered by any of the quadrats, but add diversity to the overall meso-habitat.

3.20 There was a notable amount of out-of-channel flooding in the strip of lawn below Boundway Hill in the east of the site and runnels and depressions in this area support a suite of notable species including Pillwort, Lesser Water-plantain *Baldellia ranunculoides*, Lesser Marshwort *Helosciadium inundatum* and Tubular Water-dropwort *Oenanthe fistulosa*. Similar channels, which support Pillwort, are also present near the ford at Sheepwash Lawn.

Table 5: Locations of plants of conservation concern at Wootton. S41 indicates that the species list listed under Section 41 of the 2006 Natural Environment and Rural Communities (NERC) Act as a species for which priority actions are needed.

Species	Grid reference	Status
Pillwort *Pilularia globifera* L.	SZ2612099130 SZ2630598823 SZ2610899157	Nationally Scarce; GB Red List Near Threatened; England Red List Vulnerable; S41.
Lesser Water-plantain *Baldellia ranunculoides* (L.) Parl.	SZ2635498787 SZ2630598823	GB Red List Near Threatened; England Red List Vulnerable.
Tubular Water-dropwort *Oenanthe fistulosa* L.	SZ2637498758 SZ2630598823	GB Red List Near Vulnerable; England Red List Vulnerable.

Species	Grid reference	Status
Lesser Marshwort *Helosciadium inundatum* (L.) W.D.J.Koch	SZ2630598823	GB Red List Least Concern; England Red List Vulnerable.

Figure 11: Wet Lawn bordering the stream at Sheepwash Lawn (LEFT) and in a glade in the west of the site (RIGHT).

Riverine Woodland

3.21 Riverine woodland is located between the drier woodland of the Inclosure to the south of the Avon Water and the watercourse itself, in some places extending onto the northern bank. It is generally fairly dry under foot, although there are numerous wetter depressions and runnels and occasional pools.

3.22 Alder is the most frequent canopy species (generally old coppice), although Oak is also very common in the canopy. Holly and Ash are also frequent with more occasional Downy Birch and Grey Willow. The understorey is mostly absent, although Hawthorn, Blackthorn and Alder Buckthorn are occasionally present. Diseased/dead Ash is very frequent in the Riverine Woodland, and in some places fallen Ash has created glades, adding to the overall diversity the woodland (see above). Tree regeneration is quite limited, with occasional Oak, Holly, Ash, Alder and Willow seedlings.

3.23 As in the Wet Lawn, the ground flora is generally grass-dominated. Creeping Bent, Common Bent and Remote Sedge are particularly common, with a similar, if more variable, cover of herbs as the Wet Lawn (see Figure 14).

Frequent herbs include Lesser Spearwort, Water Mint, and Marsh Bedstraw, with typical woodland herbs represented by Violets *Viola* sp., Yellow *Pimpernel Lysimachia nemorum*, Wood Sedge *Carex sylvatica* and Wood Speedwell *Veronica montana*. Bryophytes are very frequent as a group although individual species are infrequent, with the exception of *Brachythecium rutabulum*, *Fissidens taxifolius* and *Kindbergia praelongum* (see Appendix 1 for a full species list). Ferns are represented by Hard Fern *Blechnum spicant*, Lady Fern *Athyrium filix-femina* and Broad-buckler Fern *Dryopteris dilatata*. Damp and wet hollows and runnels often support Marsh Cudweed *Gnaphalium uliginosum* and Water-pepper with Creeping Bent and Water Mint. The sward is diverse overall, with 95 species recorded (the mean per quadrat is 19.4).

3.24 In some places the transition to Alder Moor (see below) is abrupt, but in other places it is more gradual, resulting in habitat that is intermediate in character. For example, the now infilled drain still frequently forms a boundary between the two woodland types. It remains saturated and supports swamp vegetation more typical of Alder Moor, although the substrate is not currently peaty.

Figure 12: Open Riverine Woodland south of the Avon Water at Wootton.

Alder Moor

3.25 The Alder Moor at Wootton is found between the Avon Water and Wilverley Bog. It is very wet underfoot and structurally diverse. In places it is quite impenetrable due to fallen wood, interlocking branches, a deeply tussocky sward and the unstable substrate.

3.26 There is a noticeable loss of vigour of canopy Alder and Ash, resulting in frequent standing and fallen dead wood (see Table 6) and, in places, a relatively open canopy. The change in Alder is particularly noticeable along the infilled channel, where it has presumably been affected by the change in hydrology; however, there is abundant regrowth from the base of trunks contributing to a diverse woodland structure. The affected Ash is more dispersed and there is little regeneration of this species.

3.27 The ground flora is taller than within the Riverine Woodland (see Figure 17) with a more complex structure (indicated by the high overall cover value - see Figure 16). Swampy stands are characterised by Greater Tussock-sedge *Carex paniculata*, Canary Grass *Phalaris* sp., Branched Bur-reed *Sparganium erecta*, Yellow Loosetrife, Lesser Pond-sedge, Valerian *Valeriana officinalis,* Wild Angelica *Angelica sylvestris* and Gipsywort, with some Tufted Hair-grass *Deschampsia caespitosa*, Marsh Horsetail *Equisetum palustris* and regenerating Alder. Shorter stands include Marsh Valerian *Valeriana dioica,* Remote Sedge *Carex remota*, Fool's Watercress, Yellow Pimpernel and Lesser Skullcap Scutellaria minor. Ferns are more frequent in the Alder Moor, and include Royal Fern *Osmunda regalis.* Bryophytes are particularly well-represented in this meso-habitat. There are frequent boggy patches with bog-mosses (particularly *Sphagnum palustre* and *S. denticulatum*) and Marsh Lousewort *Pedicularis palustris* and occasional Bog-bean *Meyanthes trifoliata.* There are also some less acidic flushes with species such as Star Sedge *Carex echinata*.

3.28 Near the car park at Wootton Bridge, the Alder Carr merges into Willow carr with Common Reed *Phragmites australis* ground flora along the valley mire.

3.29 Alder Moor at Wootton is relatively species-rich, with a total of 98 plant species recorded within quadrats (with a mean of 18 per quadrat), of which around 50% are herbs and 20% are bryophytes. It is much more lightly grazed than the adjacent Riverine Woodland (although pony dung is still present, see Table 6).

Figure 13: Alder Moor at Wootton.

Table 6: Mean species richness (+/- 1 S.E.) and other variables recorded from quadrats within each wetland habitat type surveyed at Wootton.

	Wet Lawn	Riverine Woodland	Aldermoor	Woodland Floodplain Stream
Species richness	15.7 (+/-1.4)	19.4 (+/-1.5)	18 (+/-1.1)	2.9 (+/-0.4)
Average sward height (cm)	4.2 (+/-0.7)	8.6 (+/-4)	27.6 (+/-5.4)	0
Bare ground (%)	4.4 (+/-1.7)	12.2 (+/-2.3)	15.4 (+/-2.7)	66.2 (+/-6.4)
Total veg cover (%)	100.1 (+/-2.6)	75.8 (+/-5.8)	106.8 (+/-6.5)	21.1 (+/-5.3)
Leaf litter (%)	5.3 (+/-3)	13.3 (+/-3.6)	8.1 (+/-2.2)	0
Dung (%)	1.6 (+/-0.6)	1.5 (+/-0.5)	1 (+/-0.4)	0
Deadwood (%)	0.4 (+/-0.2)	2.4 (+/-0.5)	6.5 (+/-1.2)	2.5 (+/-1.2)

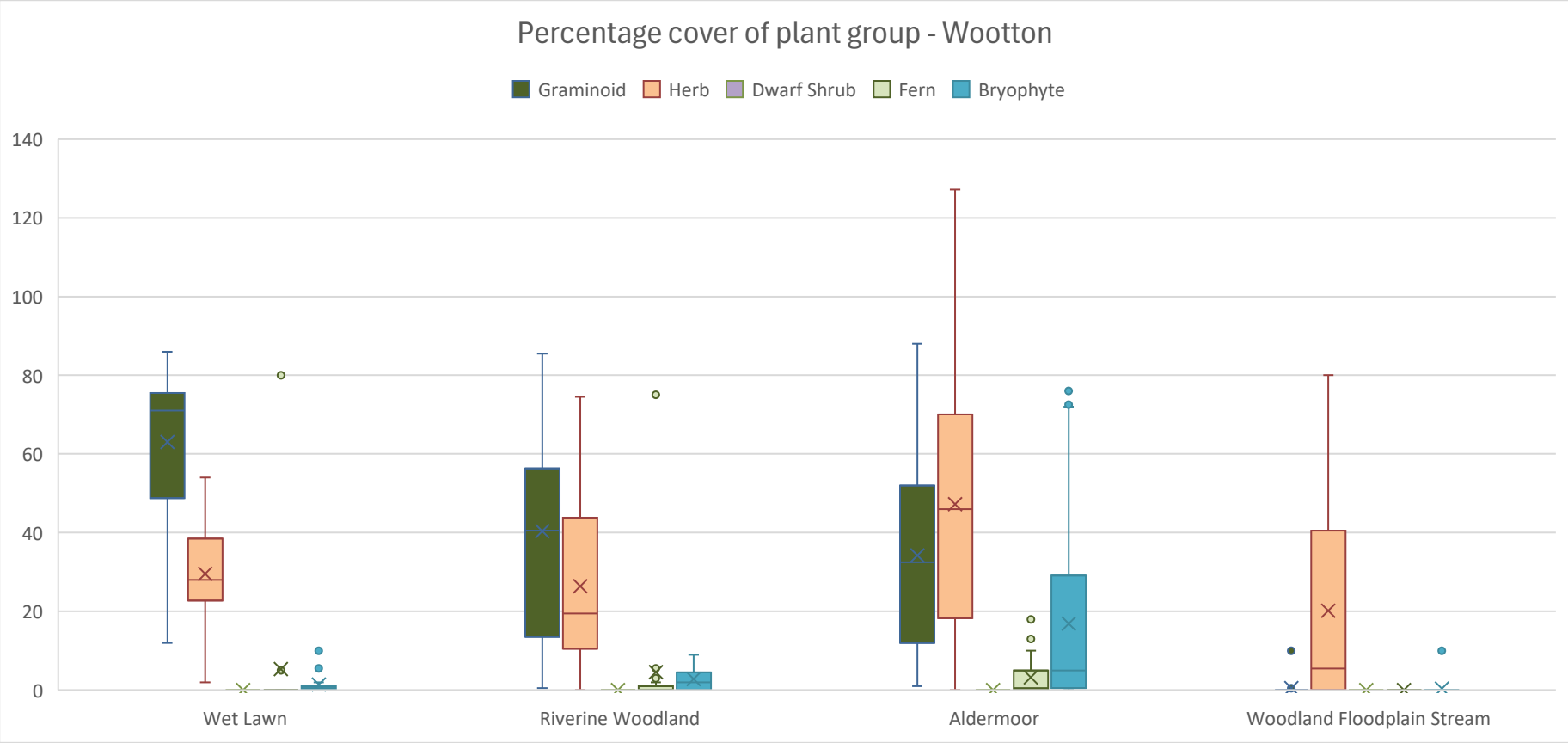


Figure 14: Box plots indicating the cover of different plant groups according to habitat type at Wootton

Figure 15: Average species richness within different meso-habitat at Wootton in 2024.

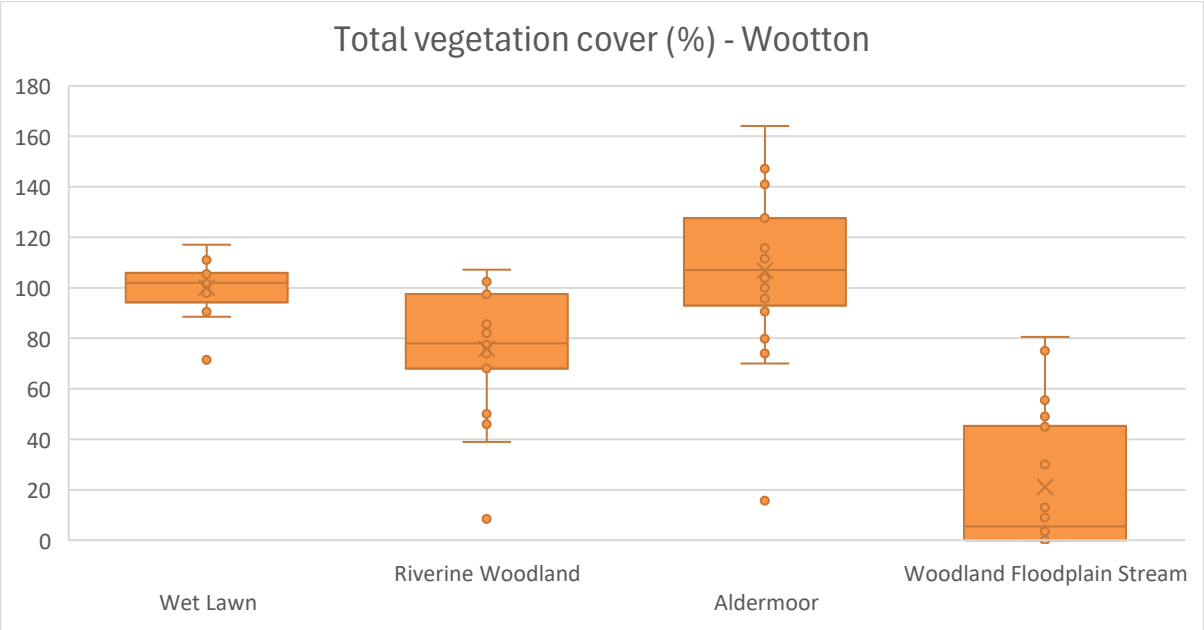


Figure 16: Average total vegetation cover (i.e. all plant groups summed) within different meso-habitats Wootton in 2024. Totals over 100% indicate a more complex sward structure in which different species overlap.

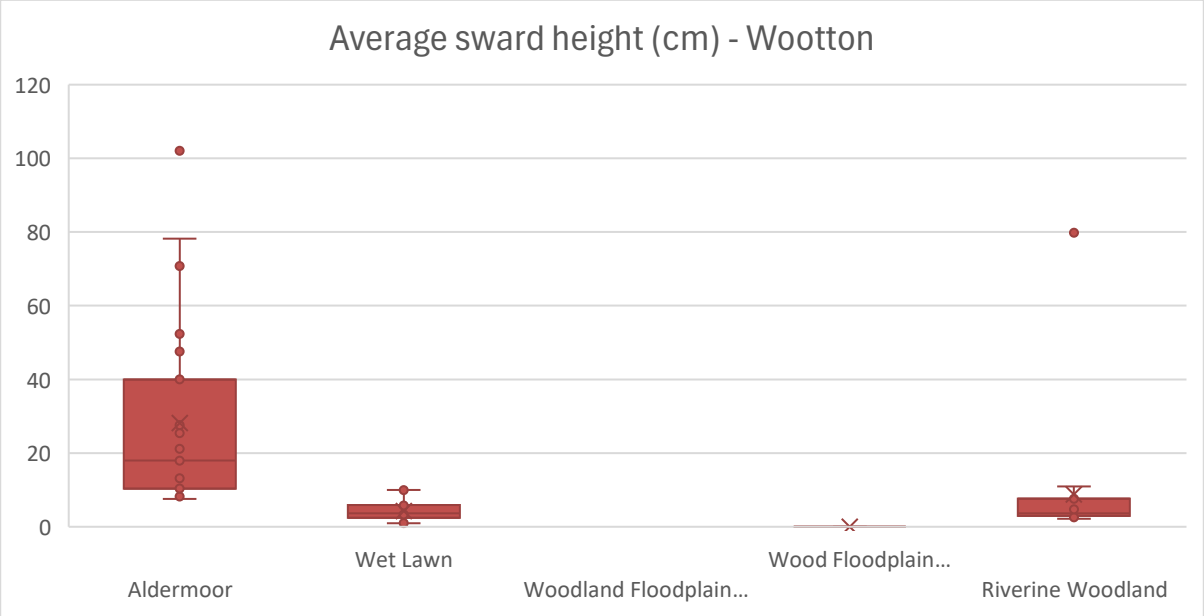


Figure 17: Average sward height measured by drop disk within different meso-habitats at Wootton 2024 (sward height was not measured for the woodland watercourse).

Figure 18: Average cover of bare ground within different meso-habitats Wootton in 2024.

4. Discussion

4.1 Despite modifications, the New Forest wetlands are generally of very high nature value. The restoration of natural processes as a driving force shaping habitats and species assemblages is therefore not necessarily expected to change the overall diversity of habitats but instead to change the extent, distribution and quality of such habitats and their component species. At Pondhead and Wootton, it is not possible to make a direct comparison between the habitats and vegetation pre- and post-restoration, as baseline mapping and vegetation sampling were insufficiently detailed to show changes in typical New Forest meso-habitats. However, the post-restoration habitat mapping and vegetation sampling provides an indication of the extent and quality of the habitats now present. The characteristics of the meso-habitats at each site are discussed here in the context of the restoration.

Pondhead

4.2 Pondhead supports a number of characteristic New Forest meso-habitats that appear to have responded positively to the restoration work in the short-term, and are likely to improve further in the long term. The Ephemeral Headwater Stream that has been restored in the lowest point in the floodplain is gently sinuous, with shallow margins and supports typical Soakway vegetation. Whereas the previous drain was clearly channelised, with vertical sides and spoil banks both preventing interaction with the floodplain (see Figure 19), there is now a natural gradation between the wetter in-channel vegetation and that of the Wet Lawn. The section upstream of the bridge is slightly more natural in profile, but the section downstream which had a more engineered appearance, appears to be settling, and both support Soakway vegetation typical of Ephemeral Headwater Stream.

Figure 19: The Pondhead watercourse prior to restoration, when spoils banks and broken-down vertical banks interrupted the interaction between the (deeper) watercourse and the floodplain (LEFT). Post-restoration, the watercourse has shallow margins and supports classic Soakway vegetation typical of this type of stream in its natural form (RIGHT).

4.3 The Wet Lawn shows a natural transition from the Sharp-flowered Rush variant of Wet Lawn near the stream to a more mesic lawn community with abundant Chamomile on higher ground further away from the watercourse[1]. Near the watercourse, Poached and Disturbed habitat is sufficiently wet to support characteristic species such as Pillwort. The very closely-grazed sward is typical of New Forest Wet Lawn.

4.4 The Wet Lawn transitions into Riverine Woodland to the east, as the tree canopy cover increases. The woodland at Pondhead equates to the habitat type described in the FWRP but is currently structurally limited and not very floristically diverse. The restoration of the Woodland Floodplain Stream was somewhat compromised by the necessity of grading the stream bed to connect with that of the drain flowing into it from the north. However, the restored meander and the bed-level raising have increased the geomorphological diversity and has allowed shallower, poached margins with Water Purslane *Lythrum portula*, Water-pepper *Persicaria hydropiper* and Creeping Bent *Agrostis stolonifera* to develop in place of the steep banks present previously. In addition, the bed-level raising has increased the likelihood of out-of-stream flooding (e.g. see Figure 20). This may in turn

[1] There are target notes describing the lawn vegetation in the 2015 Biodiversity Statement, but these appear to be from this higher area, and are therefore not directly comparable with the Wet Lawn adjacent to the restored watercourse sampled here.

increase the amount of woody debris and the quality of the ground flora in the Riverine Woodland (Sanderson, 2020).

Figure 20: A pre-restoration photo of the embanked, straightened watercourse at the edge of the woodland (supplied by Forestry England) (LEFT) and a post-restoration photo in a similar location in 2024 (RIGHT).

4.5 The woodland between the watercourse and the nearby valley mire appears to have become much wetter. A photo from 2015 (taken from Appendix 4 of the Pondhead Biodiversity Statement) shows much drier conditions that in 2023 (see Figure 21), with the spoil bank bordering the watercourse very much in evidence (the grid reference for the 2015 photo indicates that it was taken in the area mapped as Alder Moor in 2023). A detailed comparison of the 2015 and 2024 quadrat data is not valid, as the woodland is very variable within a small area and only one quadrat was recorded in this area in 2015, but it is worth noting that in 2015 species recorded included those typical of drier conditions such as Wood Sorrel and Foxglove *Digitalis purpurea* whereas in 2024 wetland species such as Soft Rush, Bulbous Rush, Creeping Bent, Velvet Bent and Marsh Bedstraw were frequent. It would be interesting to revisit this area as the habitat continues to develop post-restoration.

4.6 The Bog Woodland accords well with the description in the FWRP. Situated further from the watercourse, it is likely to be more influenced by water from the adjacent mire than floodwater and is less likely to have been affected by the restoration.

Figure 21: "Alder Woodland" in 2015 (LEFT) from an area mapped in 2023 as Alder Moor (RIGHT).

Wootton

4.7 The Avon Water has changed significantly in character, from a generally wide, eroded, embanked and straight watercourse, to a meandering, more varied channel with riffles, glides, pools, gravel bars, occasional poached edges and woody debris. The length within the study boundary is 3.84 km, compared to 3.5km within the Biodiversity Statement (JBA Consulting, 2014). The degree of shading of the Avon Water has reduced (from 70% to just under 50%), partly a result of the clearance carried out as part of the restoration, but also a result of the structural changes emerging in the canopy, presumably a result of changing groundwater levels due to infilling the drain. Together, these changes have resulted in more diverse in-channel and marginal vegetation. In 2015, the channel was little-vegetated, with just occasional patches of in-stream Water Star-wort and marginal Fool's Watercress, whereas it now supports a range of submerged and emergent plant species.

4.8 A striking feature at Wootton is the Alder Moor fringing Wilverley Bog and grading into the Riverine Woodland that borders the Avon Water. The woodland has been noticeable affected by the changes in hydrology, with mature Alder growing along the banks of the now-infilled drainage ditch dying back but regrowing vigorously from the base, resulting in abundant deadwood and a much more varied structure. The more open canopy is enabling the more wide-spread expression of tall-herb swamp communities, a relatively rare resource in the context of the wider New Forest. Together with the abundant deadwood, this provides an important resource for

specialist invertebrates. Tall-herb communities were described as occurring in small clearings in the pre-restoration National Vegetation Classification survey (Lake & White, 2015) but now seem more widespread.

4.9 Overall, the Wet Lawn vegetation is a good example of Sharp-flowered Rush lawn that is typically found where stream flood waters deposit silt on the adjacent lawns (this corresponds with the Sharp-flowered Rush sub-community of Meadow Thistle Fen Meadow (M24c) recorded in the 2015 NVC community). The Wet Lawn includes wetland floodplain features such as seasonally-wet hollows, runnels and pockets of poached habitat. These areas contribute significantly to the overall species-richness of this meso-habitat and the lawn continues to support the range of rare plants (see Table 5) previously recorded from similar locations (see Maps 2, 4 and 9 in Appendix 2).

Figure 22: Wooded Floodplain Stream post restoration in 2024 (top) and pre-restoration (bottom – images provided by Forestry England) (note that these are not paired but have been selected as representative images of the watercourse at different points in time).

4.10 It is worth noting that the scrub community at Wootton remains particularly rich, with Bog Myrtle, Roses and Brambles hosting Ash, Blackthorn *Prunus spinosa*, Hawthorn *Crataegus monogyna*, Spindle *Euonymus europaeus*, Guelder Rose *Viburnum opulus*, Alder Buckthorn *Frangula alnus*, Oak, Alder and Birch.

Potential repairs

4.11 At the time of the survey, the main flow had reverted to the old, engineered channel at the eastern end of the study area at around SZ26289895 (see Figure 23), and some repair work may be needed to re-direct the flow into the restored meanders.

4.12 A significant nick point in the mire north of the Avon Water and Sheepwash Lawn at SZ2569299582 (outside of the study area) was noted.

Figure 23: Nick point in the Valley Bog north of Sheepwash Lawn (LEFT) and the restored meander where the main flow has reverted to the old, engineered channel.

Monitoring recommendations

4.13 The FWRP monitoring protocol has now been used at five sites (see also Lake, Bishop et al., 2023; Lake, Shellswell, et al., 2023), although, with the exception of Picket Mire, it has only been applied post-restoration. Following on from the surveys at Pondhead and Wootton, we make two further recommendations:

- Canopy species should be included. These were previously excluded on the basis that changes were most likely to be seen in the ground flora/aquatic flora (as appropriate) and that changes in the canopy were in general due to felling carried out as part of the

restoration work. However, following the initial meso-habitat mapping at Wootton, it became clear that canopy changes can happen quite rapidly following restoration work and that canopy species cover should therefore be included to illustrate this.

- The quadrat data allow more detailed examination of the quality of the vegetation than meso-habitat mapping alone. However, the number of quadrats required to ensure all features are adequately sampled is likely to be prohibitive in terms of the resources required. Additional descriptive information should therefore be collected at the same time as the mapping (e.g. in the form of target notes) to ensure that all features relevant to the restoration can be considered. In some cases, it may be appropriate to select quadrat locations in the field rather than randomly, for example, to ensure that features such as wet hollows/runnels in floodplains are included.
- Transitional habitats were not included in this study, as they were mostly situated towards the study boundaries, but it some cases transitional habitat may be where change is most likely to be observed and should not be excluded.
- The meso-habitat and vegetation monitoring surveys could be used to obtain basic geomorphological information (e.g. the presence of woody debris, glides, riffles, pools etc.) if more detailed surveys are not planned.
- Photography is a powerful descriptive tool and should be used more deliberately at the meso-habitat mapping stage to illustrate the meso-habitats present, in additional to fixed-point photography designed to show change over time.

5. References

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Appendix 1: Species lists

Pondhead

Table 7: Species recorded from Ephemeral Headwater Stream quadrats at Pondhead.

Scientific name	Common name	Plant group	Frequency
Sphagnum inundatum		Bryophyte	2
Calliergonella cuspidata	Pointed Spear-moss	Bryophyte	1
Sphagnum sp.		Bryophyte	1
Glyceria declinata	Small Sweet-grass	Graminoid	18
Eleogitan fluitans	Floating club-rush	Graminoid	15
Eleocharis palustris	Common Spike-rush	Graminoid	12
Juncus articulatus/acutiflorus	Jointed /Sharp-flowered Rush	Graminoid	10
Juncus bulbosa	Bulbous Rush	Graminoid	6
Juncus articulatus	Jointed Rush	Graminoid	5
Agrostis canina	Velvet Bent	Graminoid	3
Agrostis stolonifera	Creeping Bent	Graminoid	3
Carex nigra	Common Sedge	Graminoid	3
Agrostis capillaris	Common Bent	Graminoid	1
Carex ovalis	Oval sedge	Graminoid	1
Juncus bufonius	Toad Rush	Graminoid	1
Juncus effusus	Soft Rush	Graminoid	1
Ranunculus flammula	Lesser Spearwort	Herb	19
Potamogeton polygonifolius	Bog Pondweed	Herb	18
Hypercium elodes	Marsh St John's-wort	Herb	17
Hydrocotyle vulgaris	Marsh Pennywort	Herb	10
Galium palustre	Marsh-bedstraw	Herb	7
Lythrum portula	Water-purslane	Herb	7
Alisma plantago-aquatica	Common Water-plantain	Herb	5
Cardamine pratensis	Cuckoo flower	Herb	4
Lotus pedunculatus	Greater Bird's-foot Trefoil	Herb	3
Mentha aquatica	Water mint	Herb	3
Scutellaria minor	Lesser Skullcap	Herb	2
Anagallis tenella	Bog Pimpernel	Herb	1
Lotus corniculatus	Bird's-foot Trefoil	Herb	1
Lysimachia vulgaris	Yellow Loosestrife	Herb	0
Potentilla erecta	Tormentil	Herb	0

Scientific name	Common name	Plant group	Frequency
Salix sp. (s)	Willow sp.	Tree seedling	1

Table 8: Species recorded from Wooded Floodplain Stream quadrats at Pondhead.

Scientific name	Common name	Plant group	Frequency
In-channel species			
Glyceria declinata	Small Sweet-grass	Graminoid	11
Agrostis stolonifera	Creeping Bent	Graminoid	5
Eleogitan fluitans	Floating club-rush	Graminoid	2
Callitriche sp.		Herb	14
Sparganium emersum	Unbranched Bur-reed	Herb	11
Helisciadium nodiflorum	Fool's water cress	Herb	7
Ranunculus flammula	Lesser Spearwort	Herb	5
Potamogeton polygonifolius	Bog Pondweed	Herb	4
Alisma plantago-aquatica	Common Water-plantain	Herb	3
Lotus pedunculatus	Greater Bird's-foot-trefoil	Herb	2
Mentha aquatica	Water mint	Herb	2
Persicaria hydropiper	Water-pepper	Herb	2
Hypercium elodes	Marsh St John's-wort	Herb	1
Lythrum portula	Water-purslane	Herb	1
Canopy species			
Fraxinus excelsior	European ash	Canopy tree	5
Quercus	Oak	Canopy tree	2
Betula pendula	Silver Birch	Canopy tree	1

Table 9: Species recorded from 15 Wet Lawn quadrats at Pondhead.

Scientific name	Common name	Plant group	Frequency
Sphagnum inundatum		Bryophyte	4
Rhytidiadelphus squarrosus		Bryophyte	3
Calliergonella cuspidata		Bryophyte	2
Hypnum jutlandicum		Bryophyte	2
Polytrichum junipernum		Bryophyte	2
Aulacomnium palustre		Bryophyte	1
Campylopus sp.		Bryophyte	1
Hylocomium splendens		Bryophyte	1
Sphagnum tenellum		Bryophyte	1
Agrostis canina	Velvet Bent	Graminoid	15
Carex nigra	Common Sedge	Graminoid	13
Juncus bulbosa	Bulbous Rush	Graminoid	11
Agrostis capillaris	Common Bent	Graminoid	9
Juncus articulatus	Jointed Rush	Graminoid	9
Carex ovalis	Oval sedge	Graminoid	8
Agrostis stolonifera	Creeping Bent	Graminoid	5
Juncus effusus	Soft Rush	Graminoid	5
Molinia caerulea	Purple Moor Grass	Graminoid	4
Nardus stricta	Mat-grass	Graminoid	4
Eleocharis quinqueflora	Few-flowered Spike-rush	Graminoid	3
Glyceria declinata	Small Sweet-grass	Graminoid	3
Holcus lanatus	Yorkshire Fog	Graminoid	3
Carex demissa	Common Yellow-sedge	Graminoid	2
Carex echinata	Star Sedge	Graminoid	2
Carex panicea	Carnation Sedge	Graminoid	2
Carex sylvatica	Wood-sedge	Graminoid	2
Danthonia decumbens	Heath-grass	Graminoid	2
Juncus acutiflorus	Sharp-flowered Rush	Graminoid	2
Juncus articulatus/acutiflorus	Jointed /Sharp-flowered Rush	Graminoid	2
Juncus bufonius	Toad Rush	Graminoid	2
Eleogitan fluitans	Floating club-rush	Graminoid	1
Isolepis setacea	Bristle Club-rush	Graminoid	1
Poa annua	Annual Meadow-grass	Graminoid	1
Lotus pedunculatus	Greater Bird's-foot-trefoil	Herb	11
Ranunculus flammula	Lesser Spearwort	Herb	10
Potentilla erecta	Tormentil	Herb	9
Hydrocotyle vulgaris	Marsh Pennywort	Herb	7

Scientific name	Common name	Plant group	Frequency
Cardamine pratensis	Cuckoo flower	Herb	3
Galium palustre	Marsh Bedstraw	Herb	2
Anagallis tenella	Bog Pimpernel	Herb	1
Cirsium dissectum	Meadow Thistle	Herb	1
Gnaphalium uliginosum	Marsh Cudweed	Herb	1
Hypercium elodes	Marsh St. John's-wort	Herb	1
Persicaria hydropiper	Water-pepper	Herb	1
Plantago major	Broad-leaved Plantain	Herb	1
Prunella vulgaris	Self-heal	Herb	1
Sagina procumbens	Procumbent Pearlwort	Herb	1
Scutellaria minor	Lesser Skullcap	Herb	1
Trifolium repens	White Clover	Herb	1
Salix sp. (s)	Willow sp.	Tree seedling	2

Table 10: Species recorded from Alder Moor quadrats at Pondhead.

Scientific name	Common name	Plant group	Frequency
Ground flora			
Sphagnum palustre		Bryophyte	4
Dicranella heteromalla		Bryophyte	3
Rhytidiadelphus squarrosus		Bryophyte	3
Sphagnum squarrosum		Bryophyte	3
Kindbergia praelonga		Bryophyte	2
Pellia sp.		Bryophyte	2
Polytrichum commune		Bryophyte	2
Amblystegium serpens		Bryophyte	1
Atrichum undulatum		Bryophyte	1
Brachythecium rivulare		Bryophyte	1
Eurhynchium striatum		Bryophyte	1
Mnium hornum		Bryophyte	1
Plagiomnium affine		Bryophyte	1
Polytrichum formosum		Bryophyte	1
Sphagnum fallax		Bryophyte	1
Thudium tamariscinum		Bryophyte	1
Hedera helix (s)	Common Ivy	Creeper	2
Athyrium filix-femina	Lady fern	Fern	1
Blechnum spicant	Deer Fern	Fern	1
Agrostis stolonifera	Creeping Bent	Graminoid	15
Agrostis canina	Velvet Bent	Graminoid	13
Agrostis capillaris	Common Bent	Graminoid	10
Juncus bulbosa	Bulbous Rush	Graminoid	9
Juncus effusus	Soft Rush	Graminoid	8
Carex echinata	Star Sedge	Graminoid	6
Carex remota	Remote sedge	Graminoid	5
Cynosurus cristatus	Crested Dog's-tail	Graminoid	4
Holcus lanatus	Yorkshire Fog/Tufted Grass	Graminoid	3
Festuca rubra	Red Fescue	Graminoid	2
Glyceria fluitans	Floating Sweet-grass	Graminoid	2
Juncus articulatus	Jointed Rush	Graminoid	2
Lolium perenne	Perennial ryegrass	Graminoid	2
Anthoxanthum odoratum	Sweet vernal grass	Graminoid	1
Carex demissa	Common Yellow-sedge	Graminoid	1
Eleogitan fluitans	Floating club-rush	Graminoid	1
Elymus repens	Couch grass	Graminoid	1
Holcus mollis	Creeping Soft-grass	Graminoid	1
Juncus acutiflorus	Sharp-flowered Rush	Graminoid	1

Scientific name	Common name	Plant group	Frequency
Poa pratensis	Smooth Meadow grass	Graminoid	1
Galium palustre	Marsh-bedstraw	Herb	7
Cardamine pratensis	Cuckoo flower	Herb	5
Potentilla erecta	Tormentil	Herb	4
Scutellaria minor	Lesser Skullcap	Herb	3
Digitalis purpurea	Foxglove	Herb	2
Hypercium elodes	Marsh St John's-wort	Herb	2
Lemna minor	Common Duckweed	Herb	2
Lotus pedunculatus	Greater Bird's-foot Trefoil	Herb	2
Lysimachia nemorum	Yellow Pimpernel	Herb	2
Oxalis acetosella	Wood-sorrel	Herb	2
Persicaria hydropiper	Water-pepper	Herb	2
Ranunculus flammula	Lesser Spearwort	Herb	2
Rumex conglomeratus	Clustered Dock	Herb	2
Stellaria sp.	Stellaria sp.	Herb	2
Callitriche sp.	Water Starwort	Herb	1
Filipendula ulmaria	Meadowsweet	Herb	1
Geum rivale	Water Avens	Herb	1
Lysimachia vulgaris	Yellow Loosestrife	Herb	1
Lythrum portula	Water-purslane	Herb	1
Trifolium repens	White Clover	Herb	1
Viola sp.	Violet	Herb	1
Rubus fruticosus agg.	Bramble	Shrub	2
Betula sp. (s)	Birch sp.	Tree seedling	4
Salix sp. (s)	Willow sp.	Tree seedling	4
Canopy			
Alnus glutinosa	Alder	Canopy tree	15
Betula pubescens	Downy birch	Canopy tree	8
Quercus	Oak	Canopy tree	5
Salix cinerea	Grey Willow	Canopy tree	2
Fagus sylvatica	European beech	Canopy tree	1
Ilex aquifolium	Holly	Canopy tree	1

Wootton

Table 11: Species recorded from Wooded Floodplain Stream quadrats at Wootton.

Scientific name	Common name	Plant group	Frequency
Sparganium erectum	Branched Bur-reed	Bryophyte	3
Fontinalis antipyretica		Bryophyte	1
Agrostis stolonifera	Creeping Bent	Graminoid	2
Glyceria fluitans	Floating Sweet-grass	Graminoid	2
Glyceria declinata	Small Sweet-grass	Graminoid	1
Callitriche sp.	Water-starwort	Herb	16
Sparganium emersum	Unbranched Bur-reed	Herb	7
Callitriche brutia	Pedunculate Water Starwort	Herb	5
Potamogeton polygonifolius	Bog Pondweed	Herb	3
Helisciadium nodiflorum	Fool's water cress	Herb	3
Ranunculus flammula	Lesser Spearwort	Herb	3
Myriophyllum spicatum	Spiked Water-milfoil	Herb	3
Alisma plantago-aquatica	Common Water-plantain	Herb	2
Mentha aquatica	Water mint	Herb	2
Persicaria hydropiper	Water-pepper	Herb	2
Ranunculus repens	Creeping buttercup	Herb	1
Bidens cernua	Nodding Bur-marigold	Herb	1
Lythrum portula	Water-purslane	Herb	1
Myosotis sp.	Speedwell	Herb	1
Rubus fruticosus agg.	Bramble	Shrub	1

Table 12: Species recorded from Wet Lawn quadrats at Wootton

Scientific name	Common name	Plant group	Frequency
Rhytidiadelphus squarrosus		Bryophyte	4
Calliergon sp.		Bryophyte	2
Sphagnum sp.		Bryophyte	2
Acrocarpous moss	Acrocarpous moss	Bryophyte	1
Polytrichum sp.		Bryophyte	1
Rhytidiadelphus sp.		Bryophyte	1
Thudium tamariscinum		Bryophyte	1
Hedera helix (s)	Common Ivy	Creeper	1
Pteridium aquilinum	Bracken	Fern	2
Agrostis canina	Velvet Bent	Graminoid	13
Agrostis stolonifera	Creeping Bent	Graminoid	13
Juncus articulatus/acutiflorus	Jointed /Sharp-flowered Rush	Graminoid	12
Carex leporina	Oval Sedge	Graminoid	5
Carex nigra	Common Sedge	Graminoid	5
Holcus lanatus	Yorkshire Fog	Graminoid	4
Juncus bulbosa	Bulbous Rush	Graminoid	4
Anthoxanthum odoratum	Sweet Vernal-grass	Graminoid	3
Cynosurus cristatus	Crested Dog's-tail	Graminoid	3
Danthonia decumbens	Heath-grass	Graminoid	3
Glyceria declinata	Small Sweet-grass	Graminoid	3
Juncus effusus	Soft Rush	Graminoid	3
Agrostis capillaris	Common Bent	Graminoid	2
Carex demissa	Common Yellow-sedge	Graminoid	2
Carex echinata	Star Sedge	Graminoid	2
Carex panicea	Carnation Sedge	Graminoid	2
Carex remota	Remote sedge	Graminoid	2
Juncus bufonius	Toad Rush	Graminoid	2
Molinia caerulea	Purple Moor-grass	Graminoid	2
Alopcurus geniculatus	Marsh Foxtail	Graminoid	1
Carex flacca	Glaucous Sedge	Graminoid	1
Carex ovalis	Oval sedge	Graminoid	1
Dactylis glomerata	Cock's-foot	Graminoid	1
Eleogitan fluitans	Floating club-rush	Graminoid	1
Festuca rubra	Red Fescue	Graminoid	1
Glyceria fluitans	Floating Sweet-grass	Graminoid	1
Glyceria notata	Plicate Sweet-grass	Graminoid	1
Holcus mollis	Creeping Soft-grass	Graminoid	1
Isolepis setacea	Bristle Club-rush	Graminoid	1
Juncus acutiflorus	Sharp-flowered Rush	Graminoid	1
Luzula campestris	Field Wood-rush	Graminoid	1
Poa annua	Annual Meadow-Grass	Graminoid	1
Ranunculus flammula	Lesser Spearwort	Herb	12

Scientific name	Common name	Plant group	Frequency
Trifolium repens	White Clover	Herb	12
Prunella vulgaris	Self-heal	Herb	7
Senecio aquaticus	Marsh Ragwort	Herb	7
Hypochaeris radicata	Common Cat's-ear	Herb	6
Lotus pedunculatus	Greater Bird's-foot-trefoil	Herb	6
Potentilla erecta	Tormentil	Herb	6
Ranunculus repens	Creeping buttercup	Herb	5
Cirsium palustre	Marsh Thistle	Herb	4
Hydrocotyle vulgaris	Marsh Pennywort	Herb	4
Anagallis tenella	Bog Pimpernel	Herb	3
Bellis perennis	Common Daisy	Herb	3
Mentha aquatica	Water mint	Herb	3
Taraxacum agg.	Dandelion	Herb	3
Galium palustre	Marsh Bedstraw	Herb	2
Lycopus europaeus	Gypsywort	Herb	2
Persicaria hydropiper	Water-pepper	Herb	2
Plantago lanceolata	Ribwort Plantain	Herb	2
Digitalis purpurea	Foxglove	Herb	1
Epilobium montanum	Broad-leaved Willowherb	Herb	1
Galeopsis tetrahit	Common Hemp-nettle	Herb	1
Galium saxatille	Heath Bedstraw	Herb	1
Hypercium elodes	Marsh St. John's-wort	Herb	1
Hypercium hirsutum	Hairy St. John's-wort	Herb	1
Hypercium tetrapterum	Square-stalked St. John's-wort	Herb	1
Leontodon saxatilis	Lesser Hawkbit	Herb	1
Lotus corniculatus	Bird's-foot-trefoil	Herb	1
Lysimachia nemorum	Yellow Pimpernel	Herb	1
Lythrum portula	Water-purslane	Herb	1
Myosotis sp.	Forget-me-not	Herb	1
Oxalis acetosella	Wood-sorrel	Herb	1
Potentilla anserina	Silverweed	Herb	1
Ranunculus acris	Meadow Buttercup	Herb	1
Rumex acetosa	Sorrel	Herb	1
Teucrium scorodonia	Wood Sage	Herb	1
Veronica chamaedrys	Germander speedwell	Herb	1
Veronica scutellata	Marsh Speedwell	Herb	1
Rubus fruticosus agg.	Bramble	Shrub	1
Quercus (s)	Oak	Tree seedling	1
Alnus glutinosa (s)	Alder	Tree seedling	1

Table 13: Species recorded from Riverine Woodland quadrats at Wootton.

Scientific name	Common name	Plant group	Frequency
Kindbergia praelonga		Bryophyte	6
Brachythecium rutabulum		Bryophyte	4
Fissidens taxifolius		Bryophyte	4
Brachythecium rivulare		Bryophyte	3
Pellia sp.	Liverworts	Bryophyte	3
Atrichum undulatum		Bryophyte	2
Marchantia polymorpha		Bryophyte	2
Thudium tamariscinum		Bryophyte	2
Amblystegium serpens		Bryophyte	1
Brachypodium sylvaticum		Bryophyte	1
Calliergon sp.		Bryophyte	1
Cirriphyllum piliferum		Bryophyte	1
Dicranella heteromalla		Bryophyte	1
Hypnum jutlandicum		Bryophyte	1
Lophocolea bidentata		Bryophyte	1
Mnium hornum		Bryophyte	1
Plagiomnium undulatum		Bryophyte	1
Polytrichum sp.		Bryophyte	1
Pseudoscleropodium purum		Bryophyte	1
Sphagnum denticulatum		Bryophyte	1
Sphagnum palustre		Bryophyte	1
Thamnobryum alopecurum	Fox-tail Feather Moss	Bryophyte	1
Hedera helix (s)	Common Ivy	Creeper	3
Dryopteris dilatata	Broad-buckler fern	Fern	4
Athyrium filix-femina	Lady fern	Fern	1
Blechnum spicant	Hard Fern	Fern	1
Agrostis stolonifera	Creeping Bent	Graminoid	15
Agrostis capillaris	Common Bent	Graminoid	11
Carex remota	Remote Sedge	Graminoid	10
Agrostis canina	Velvet Bent	Graminoid	7
Carex ovalis	Oval sedge	Graminoid	5
Juncus bulbosa	Bulbous Rush	Graminoid	4
Carex sylvatica	Wood-sedge	Graminoid	3
Deschampsia cespitosa	Turfted hair grass	Graminoid	3
Carex demissa	Common Yellow-sedge	Graminoid	2
Elymus repens	Couch grass	Graminoid	2
Juncus bufonius	Toad Rush	Graminoid	2
Juncus effusus	Soft Rush	Graminoid	2
Molinia caerulea	Purple Moor-grass	Graminoid	2
Poa annua	Annual Meadow-Grass	Graminoid	1
Carex binervis	Green-ribbed Sedge	Graminoid	1

Scientific name	Common name	Plant group	Frequency
Carex pilulifera	Pill Sedge	Graminoid	1
Danthonia decumbens	Heath-grass	Graminoid	1
Glyceria declinata	Small Sweet-grass	Graminoid	1
Glyceria fluitans	Floating Sweet-grass	Graminoid	1
Holcus lanatus	Yorkshire Fog	Graminoid	1
Holcus mollis	Creeping Soft-grass	Graminoid	1
Juncus articulatus	Jointed Rush	Graminoid	1
Poa nemoralis	Wood Meadow-grass	Graminoid	1
Schedonorus giganteus	Giant Fescue	Graminoid	1
Prunella vulgaris	Self-heal	Herb	10
Ranunculus flammula	Lesser Spearwort	Herb	10
Viola sp.	Violet	Herb	10
Mentha aquatica	Water Mint	Herb	9
Ranunculus repens	Creeping Buttercup	Herb	9
Galium palustre	Marsh-bedstraw	Herb	7
Lysimachia nemorum	Yellow Pimpernel	Herb	7
Persicaria hydropiper	Water-pepper	Herb	7
Senecio aquaticus	Marsh Ragwort	Herb	6
Veronica montana	Wood Speedwell	Herb	6
Geranium robertianum	Herb-Robert	Herb	3
Potentilla erecta	Tormentil	Herb	3
Scutellaria minor	Lesser Skullcap	Herb	3
Stachys sylvatica	Hedge Woundwort	Herb	3
Ajuga reptans	Bugle	Herb	2
Cardamine pratensis	Cuckoo Flower	Herb	2
Circaea lutetiana	Enchanter's Nightshade	Herb	2
Lotus corniculatus	Bird's-foot-trefoil	Herb	2
Lycopus europaeus	Gypsywort	Herb	2
Lysimachia nummularia	Creeping Jenny	Herb	2
Myosotis sp.		Herb	2
Plantago major	Broad-leaved Plantain	Herb	2
Bellis perennis	Common Daisy	Herb	1
Cirsium palustre	Marsh Thistle	Herb	1
Epilobium montanum	Broad-leaved Willowherb	Herb	1
Euphorbia amygdaloides	Wood Spurge	Herb	1
Galium saxatille	Heath Bedstraw	Herb	1
Geum rivale	Water Avens	Herb	1
Hypercium hirsutum	Hairy St. John's-wort	Herb	1
Lotus pedunculatus	Greater Bird's-foot-trefoil	Herb	1
Oenanthe crocata	Hemlock Water-dropwort	Herb	1
Oxalis acetosella	Wood-sorrel	Herb	1

Scientific name	Common name	Plant group	Frequency
Sanicula europaea	Sanicle	Herb	1
Scrophularia auriculata	Water Figwort	Herb	1
Scutellaria galericulata	Common Skullcap	Herb	1
Stellaria sp.	Stitchwort sp.	Herb	1
Valeriana dioica	Marsh Valerian	Herb	1
Veronica chamaedrys	Germander speedwell	Herb	1
Rubus fruticosus agg.	Bramble	Shrub	4
Rosa arvensis	Field Rose	Shrub	2
Ulex europaeus	Common Gorse	Shrub	1
Ilex aquifolium (s)	Holly	Tree seedling	3
Quercus (s)	Oak	Tree seedling	2
Alnus glutinosa (s)	Alder	Tree seedling	1
Fruxinus excelsior (s)	Ash	Tree seedling	1
Salix sp. (s)	Willow sp.	Tree seedling	1
Canopy species			
Alnus glutinosa	Alder	Canopy tree	15
Quercus	Oak	Canopy tree	13
Ilex aquifolium	Holly	Canopy tree	10
Crataegus monogyna	Common hawthorn	Canopy tree	6
Fraxinus excelsior	European ash	Canopy tree	6
Betula pubescens	Downy birch	Canopy tree	3
Salix cinerea	Grey Willow	Canopy tree	3
Taxus baccata	English Yew	Canopy tree	2
Frangula alnus	Alder buckthorn	Canopy tree	1
Prunus spinosa	Blackthorn	Canopy tree	1
Sorbus aucuparia	Rowan	Canopy tree	1

Table 14: Species recorded from Alder Moor quadrats at Wootton.

Scientific name	Common name	Plant group	Frequency
Pellia sp.		Bryophyte	10
Sphagnum palustre		Bryophyte	9
Mnium hornum		Bryophyte	6
Kindbergia praelonga		Bryophyte	5
Sphagnum fallax		Bryophyte	5
Brachythecium rivulare		Bryophyte	3
Calliergonella cuspidata		Bryophyte	3
Thudium tamariscinum		Bryophyte	3
Atrichum undulatum		Bryophyte	2
Brachypodium sylvaticum		Bryophyte	2
Calliergon sp.		Bryophyte	2
Calypogeia sp.		Bryophyte	2
Leucobryum glaucum		Bryophyte	2
Dicranium scoparium		Bryophyte	1
Plagiochila asplenioides		Bryophyte	1
Plagiothecium undulatum		Bryophyte	1
Rhizomnium punctatum		Bryophyte	1
Riccardia sp.		Bryophyte	1
Thamnobryum alopecurum		Bryophyte	1
Hedera helix (s)	Common Ivy	Creeper	2
Dryopteris dilatata	Broad buckler fern	Fern	7
Athyrium filix-femina	Lady fern	Fern	6
Blechnum spicant	Hard Fern	Fern	4
Dryopteris carthusiana	Narrow Buckler-fern	Fern	1
Osmunda regalis	Royal Fern	Fern	1
Carex remota	Remote Sedge	Graminoid	17
Agrostis stolonifera	Creeping Bent	Graminoid	12
Juncus bulbosa	Bulbous Rush	Graminoid	11
Agrostis canina	Velvet Bent	Graminoid	6
Glyceria declinata	Small Sweet-grass	Graminoid	5
Juncus effusus	Soft Rush	Graminoid	5
Agrostis capillaris	Common Bent	Graminoid	4
Holcus lanatus	Yorkshire Fog	Graminoid	4
Juncus articulatus	Jointed Rush	Graminoid	3
Juncus bufonius	Toad Rush	Graminoid	3
Carex paniculata	Greater Tussock-sedge	Graminoid	2
Glyceria fluitans	Floating Sweet-grass	Graminoid	2
Molinia caerulea	Purple Moorr-gass	Graminoid	2
Phalaris sp.	Canary-grass	Graminoid	2
Carex acutiformis	Lesser Pond-sedge	Graminoid	1
Isolepis setacea	Bristle Club-rush	Graminoid	1

Scientific name	Common name	Plant group	Frequency
Phleum pratense	Timothy grass	Graminoid	1
Schedonorus giganteus	Giant Fescue	Graminoid	1
Galium palustre	Marsh Bedstraw	Herb	17
Mentha aquatica	Water Mint	Herb	15
Ranunculus repens	Creeping buttercup	Herb	14
Lysimachia nemorum	Yellow Pimpernel	Herb	12
Lysimachia vulgaris	Yellow Loosestrife	Herb	11
Ranunculus flammula	Lesser Spearwort	Herb	11
Lycopus europaeus	Gypsywort	Herb	8
Persicaria hydropiper	Water-pepper	Herb	8
Prunella vulgaris	Self-heal	Herb	6
Pedicularis palustris	Marsh Lousewort	Herb	5
Valeriana dioica	Marsh Valerian	Herb	5
Sparganium erectum	Branched Bur-reed	Herb	4
Lotus pedunculatus	Greater Bird's-foot-trefoil	Herb	4
Alisma plantago-aquatica	Common Water-plantain	Herb	3
Epilobium obscurum	Short-fruited Willowherb	Herb	3
Myosotis sp.	Forget-me-not	Herb	3
Oxalis acetosella	Wood-sorrel	Herb	3
Scutellaria minor	Lesser Skullcap	Herb	3
Sparganium emersum	Unbranched Bur-reed	Herb	3
Ajuga reptans	Bugle	Herb	2
Angelica sylvestris	Wild Angelica	Herb	2
Circaea lutetiana	Enchanter's Nightshade	Herb	2
Epilobium palustre	Marsh Willowherb	Herb	2
Lythrum salicaria	Purple Loosestrife	Herb	2
Potamogeton polygonifolius	Bog Pondweed	Herb	2
Stellaria sp.	Stitchwort sp.	Herb	2
Valeriana officinalis	Valerian	Herb	2
Bidens cernua	Nodding Bur-marigold	Herb	1
Caltha palustris	Marsh Marigold	Herb	1
Cardamine flexuosa	Wavy Bitter-cress	Herb	1
Cirsium palustre	Marsh Thistle	Herb	1
Epilobium sp.	Willowherb sp.	Herb	1
Filipendula ulmaria	Meadowsweet	Herb	1
Helisciadium nodiflorum	Fool's water cress	Herb	1
Hypercium tetrapterum	Square-stalked St. John's-wort	Herb	1
Menyanthes trifoliata	Bog Bean	Herb	1
Oenanthe crocata	Hemlock Water-dropwort	Herb	1

Scientific name	Common name	Plant group	Frequency
Plantago lanceolata	Ribwort Plantain	Herb	1
Rumex sanguineus	Wood Dock	Herb	1
Senecio aquaticus	Marsh Ragwort	Herb	1
Silene flos-cuculi	Ragged Robin	Herb	1
Solanum dulcamara	Bittersweet	Herb	1
Trifolium arvense	Hare's-foot clover	Herb	1
Trifolium repens	White Clover	Herb	1
Veronica officinalis	Heath speedwell	Herb	1
Veronica serpyllifolia	Thyme-leaved Speedwell	Herb	1
Viola sp.	Violet	Herb	1
Rubus fruticosus agg.	Bramble	Shrub	4
Rosa canina	Dog-rose	Shrub	1
Alnus glutinosa (s)	Alder	Tree seedling	7
Ilex aquifolium (s)	Holly	Tree seedling	4
Salix sp. (s)	Willow sp.	Tree seedling	2
Sorbus aucuparia (s)	Rowan	Tree seedling	2
Crataegus monogyna (s)	Hawthorn	Tree seedling	1
Quercus (s)	Oak	Tree seedling	1
Canopy Species			
Alnus glutinosa	Alder	Canopy tree	21
Ilex aquifolium	Holly	Canopy tree	12
Fraxinus excelsior	Ash	Canopy tree	9
Quercus	Oak	Canopy tree	5
Salix cinerea	Grey Willow	Canopy tree	5
Taxus baccata	English Yew	Canopy tree	5
Betula pubescens	Downy birch	Canopy tree	4
Crataegus monogyna	Hawthorn	Canopy tree	3
Sorbus aucuparia	Rowan	Canopy tree	2

Scientific name	Common name	Plant group	Frequency
Pinus sylvestris	Scots Pine	Canopy tree	1

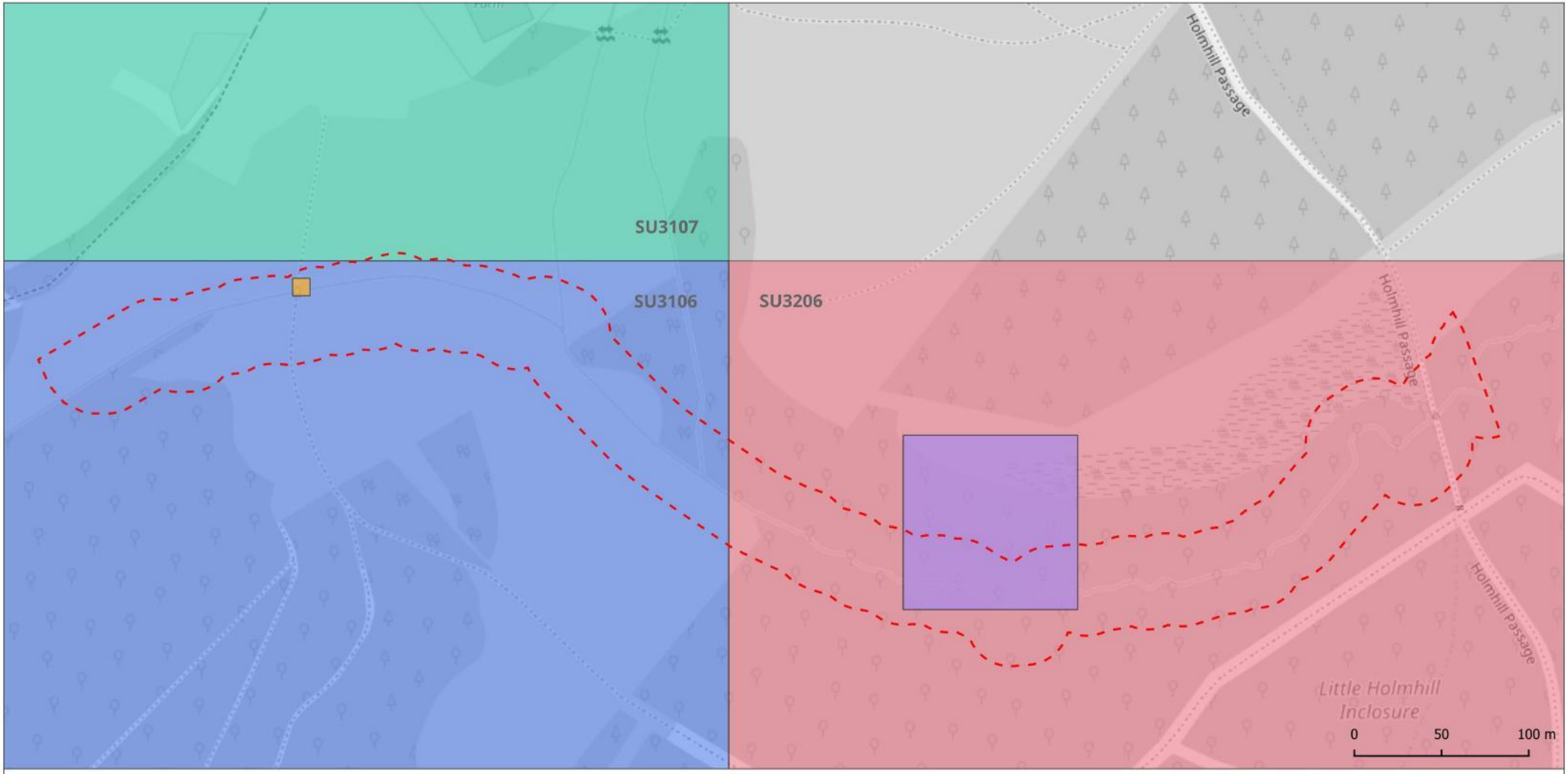
6. Appendix 2 HBIC plant records

6.1 The following maps show the distribution of plant species of conservation interest provide by the Hampshire Biological Information Centre.

6.2 New Forest Water-crowfoot was not noted at Pondhead bridge in 2024, although Pillwort, which has similar habitat preferences, was found at this location. *Impatiens noli-tangere* was not recorded either (note that it is not considered to be native in the New Forest). Many of the other records are at the monad (1km x 1km) resolution, and their habitat requirements indicate that they are unlikely to have been recorded within the study boundary (for example, Wild Gladiolus *Gladiolus illyricus* or Allseed *Radiola linoides*). For other species (for example, Yellow Centaury *Cicendia filiformis,* the notes accompanying the record ("SW of Parkhill Lawn") similarly suggest that they were recorded outside of the study area.

6.3 Of the species of conservation interest at Wootton, Pillwort, Tubular Water-dropwort, Creeping Marshwort and Lesser Water-plantain were recorded in 2024 from similar areas to previous records. A number of other species not re-recorded in 2024 are likely to have been outside of the survey area, for example in the bog or on tracks. These include Marsh Clubmoss *Lycopodiella inundata*, Marsh Fern *Thelypteris palustris*, Hay-scented Buckler-fern *Dryopteris aemula*, Coral Necklace *Illecebrum verticillatum*, Slender Sedge *Carex lasiocarpa*, Bog Sedge *Carex limosa,* Great Sundew *Drosera anglica* and also the group of species (symbolised by blue) in the south-eastern end of the site likely to have been on the transitional lawn/heath vegetation (although *Eleocharis quinqueflora* may have been overlooked in the 2024 survey, for example if in runnels that were not sampled). Some other early-flowering species are unlikely to have been unrecorded even if present due to the timing of the survey (e.g. Green-winged Orchid *Anacamptis morio*, Chaffweed *Lysmachia minima,* Heath Dog-violet *Viola canina,* Glabrous Whitlowgrass *Erophila glabrescens* etc*).* Rare bryophytes are unlikely to have been picked up unless within quadrats, while the lichen flora of trees was not sampled. A number of species listed as of conservation concern are widespread in the New Forest and found within quadrats or observed while mapping, but were not noted separately. Stinking Hellebore was not observed in 2024 (and is unlikely to have been overlooked).

Appendix map 1: Pondhead notable & protected species



Legend

Survey area

Impatiens noli-tangere Touch-me-not Balsam

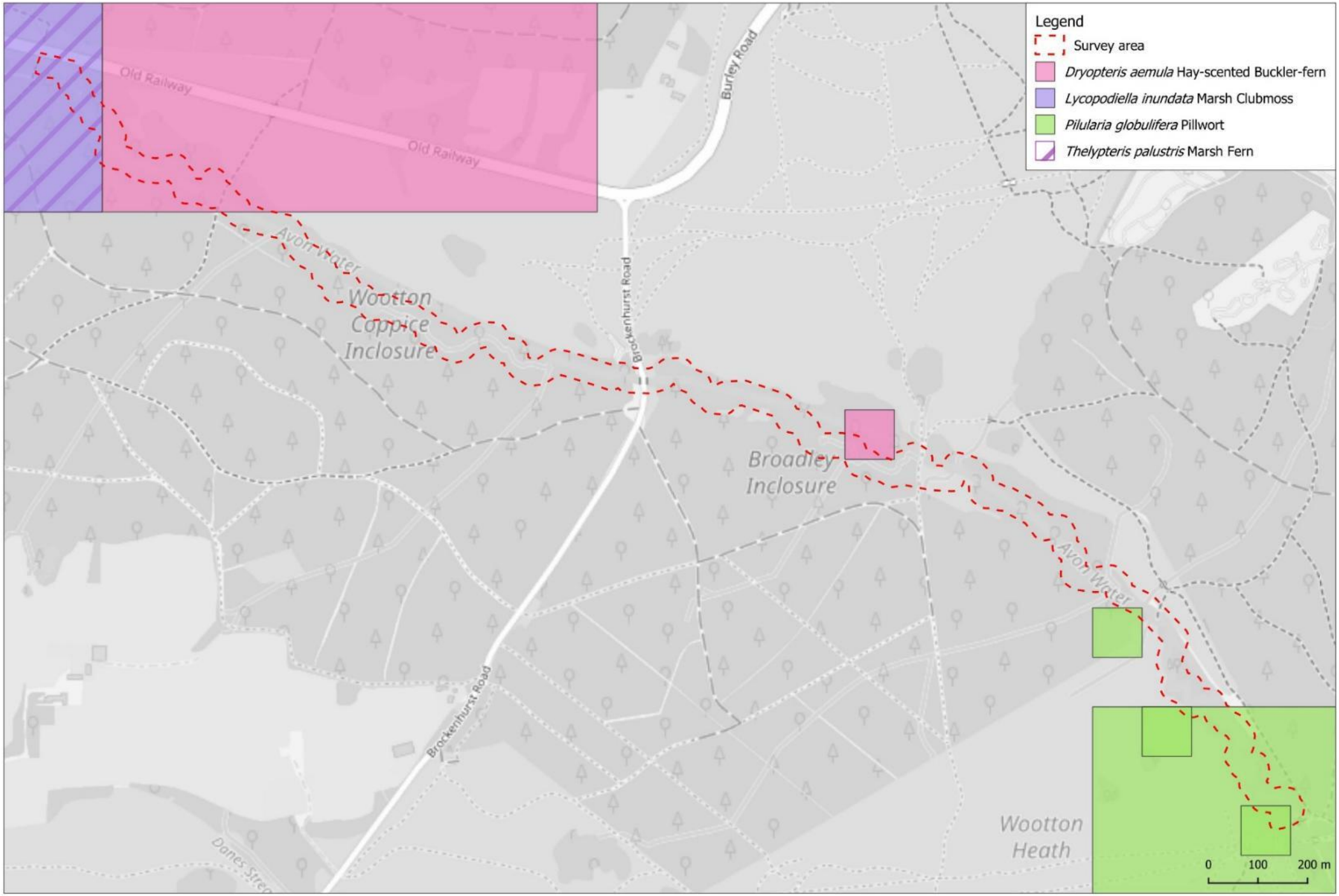
Ranunculus omiophyllus x tripartitus = R. x novae-forestae New Forest Crowfoot

SU3106:
Carex viridula subsp. oedocarpa Common Yellow-sedge
Cicendia filiformis Yellow Centaury
Pedicularis sylvatica Lousewort
Ranunculus flammula Lesser Spearwort

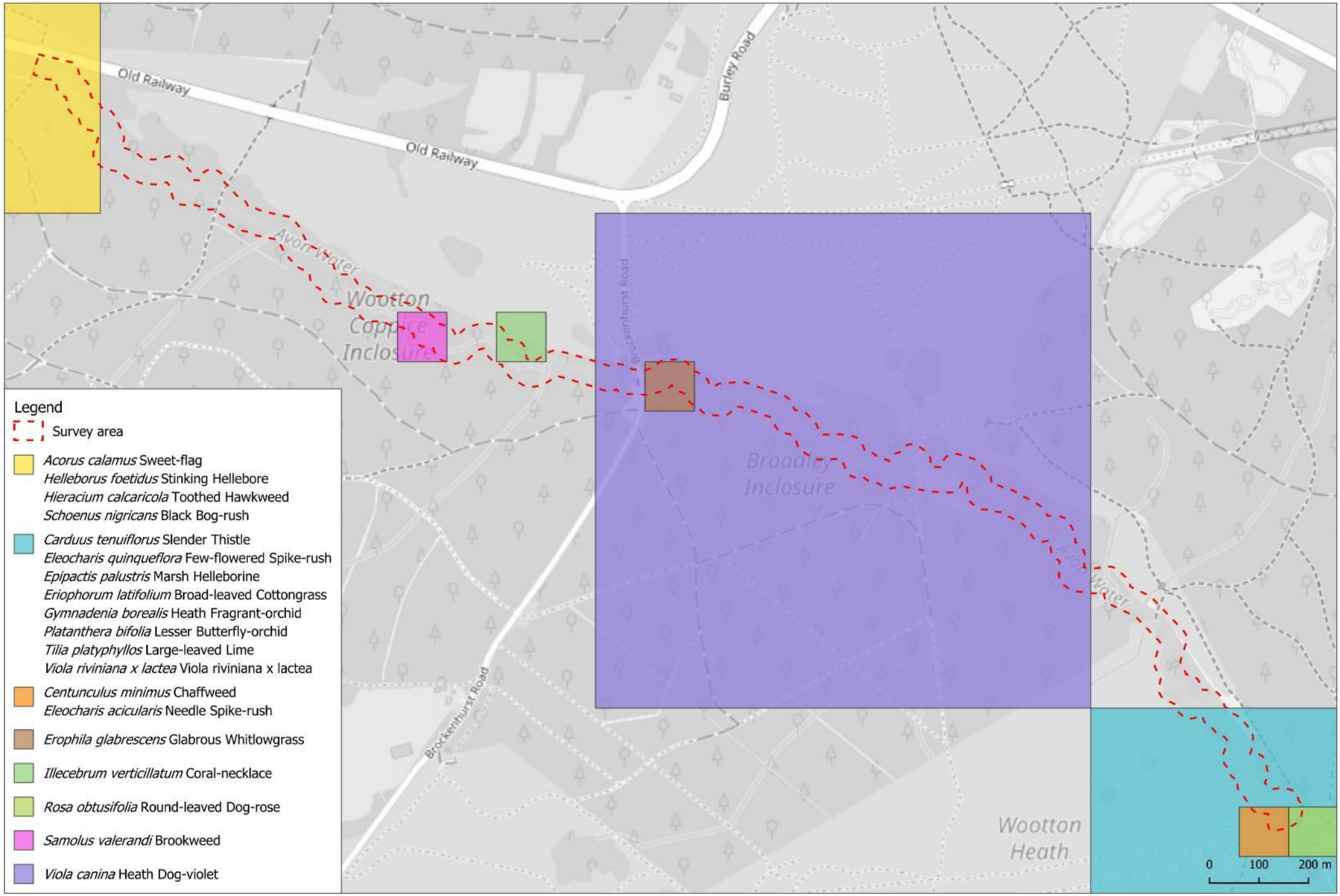
SU3107:
Carex viridula subsp. oedocarpa Common Yellow-sedge
Chamaemelum nobile Chamomile
Drosera intermedia Oblong-leaved Sundew
Euphrasia officinalis subsp. anglica English Sticky Eyebright
Radiola linoides Allseed
Ranunculus flammula Lesser Spearwort
Trifolium scabrum Rough Clover
Cladonia cryptochlorophaea
Micarea viridileprosa
Riccia subbifurca Least Crystalwort

SU3206:
Carex viridula subsp. oedocarpa Common Yellow-sedge
Cuscuta epithymum Dodder
Drosera intermedia Oblong-leaved Sundew
Eriophorum angustifolium Common Cottongrass
Erophila glabrescens Glabrous Whitlowgrass
Gladiolus illyricus Wild Gladiolus
Pedicularis sylvatica Lousewort
Ranunculus flammula Lesser Spearwort
Ruscus aculeatus Butcher's-broom
Trifolium fragiferum Strawberry Clover

Appendix map 2: Wootton notable & protected species



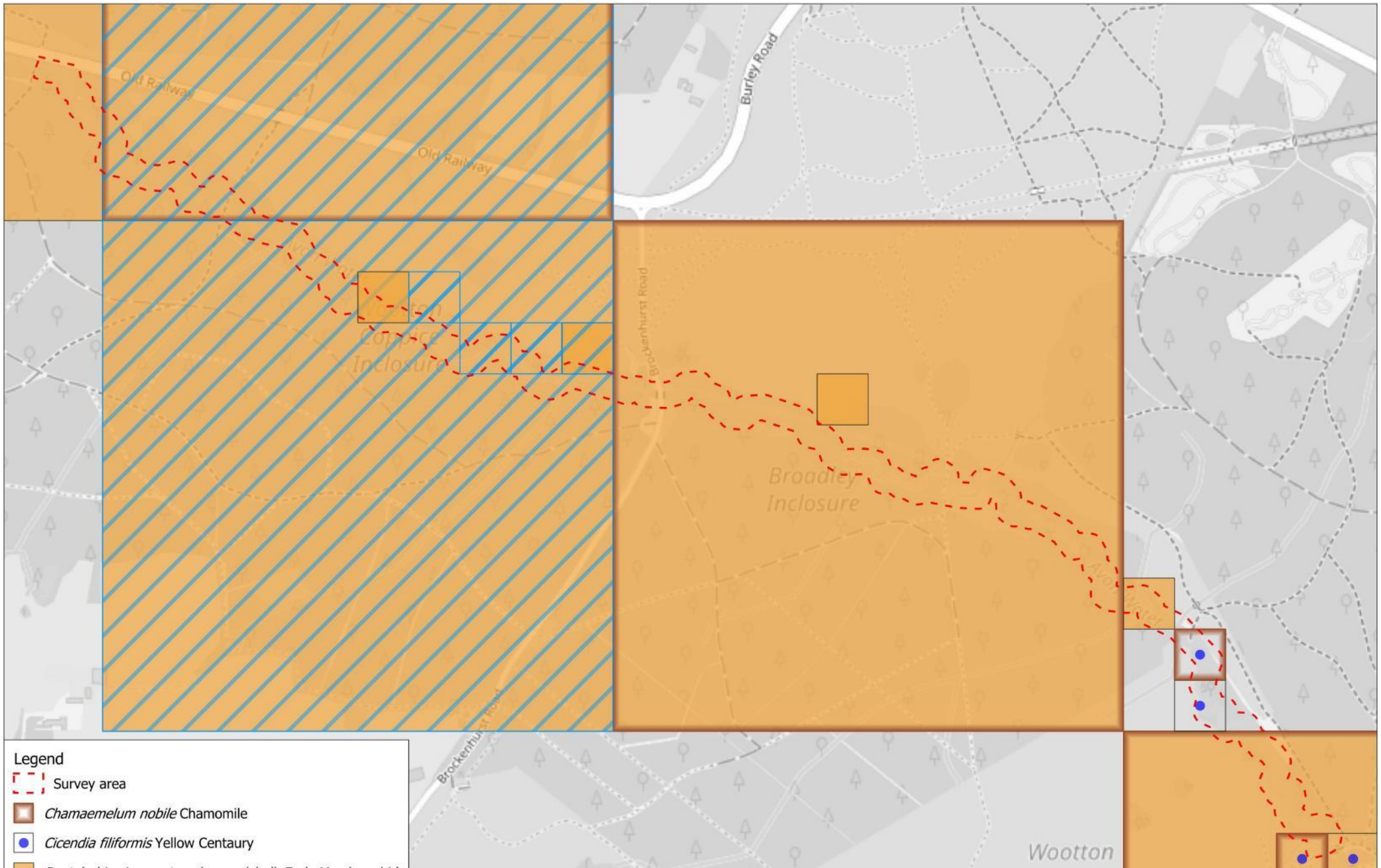
Appendix map 3: Wootton notable & protected species



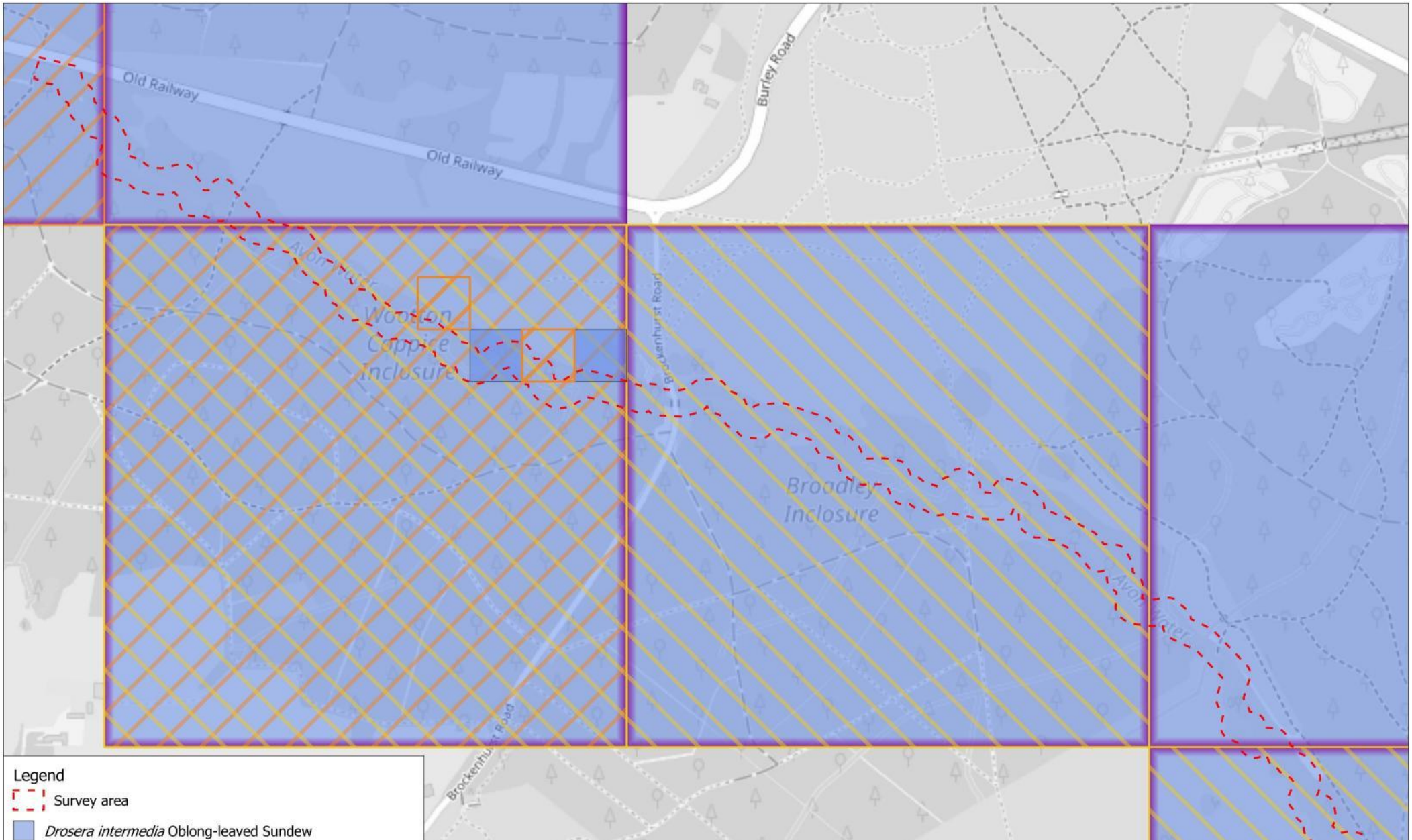
Appendix map 4: Wootton notable & protected species

Appendix map 5: Wootton notable & protected species

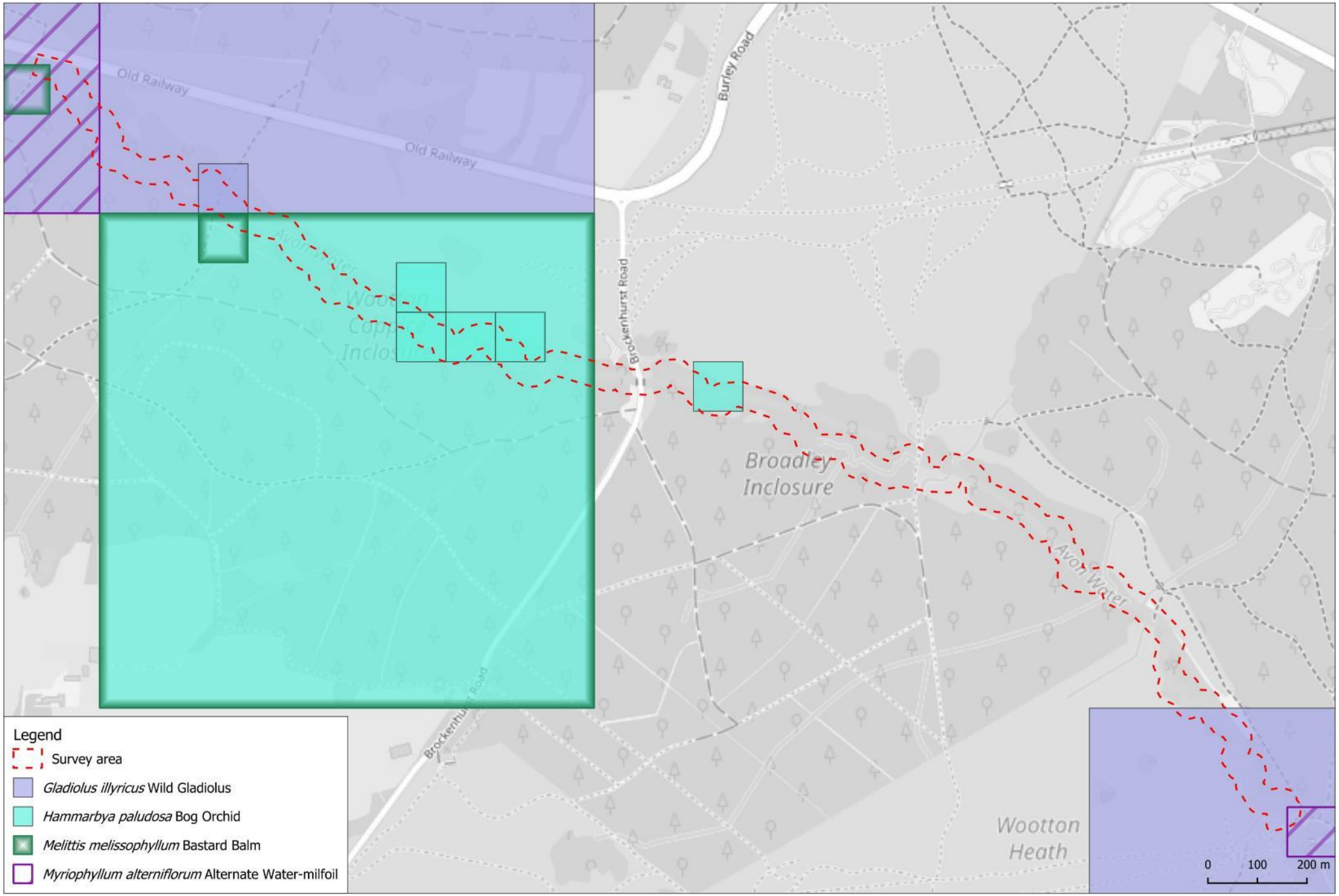
Appendix map 6: Wootton notable & protected species



Appendix map 7: Wootton notable & protected species



Appendix map 8: Wootton notable & protected species

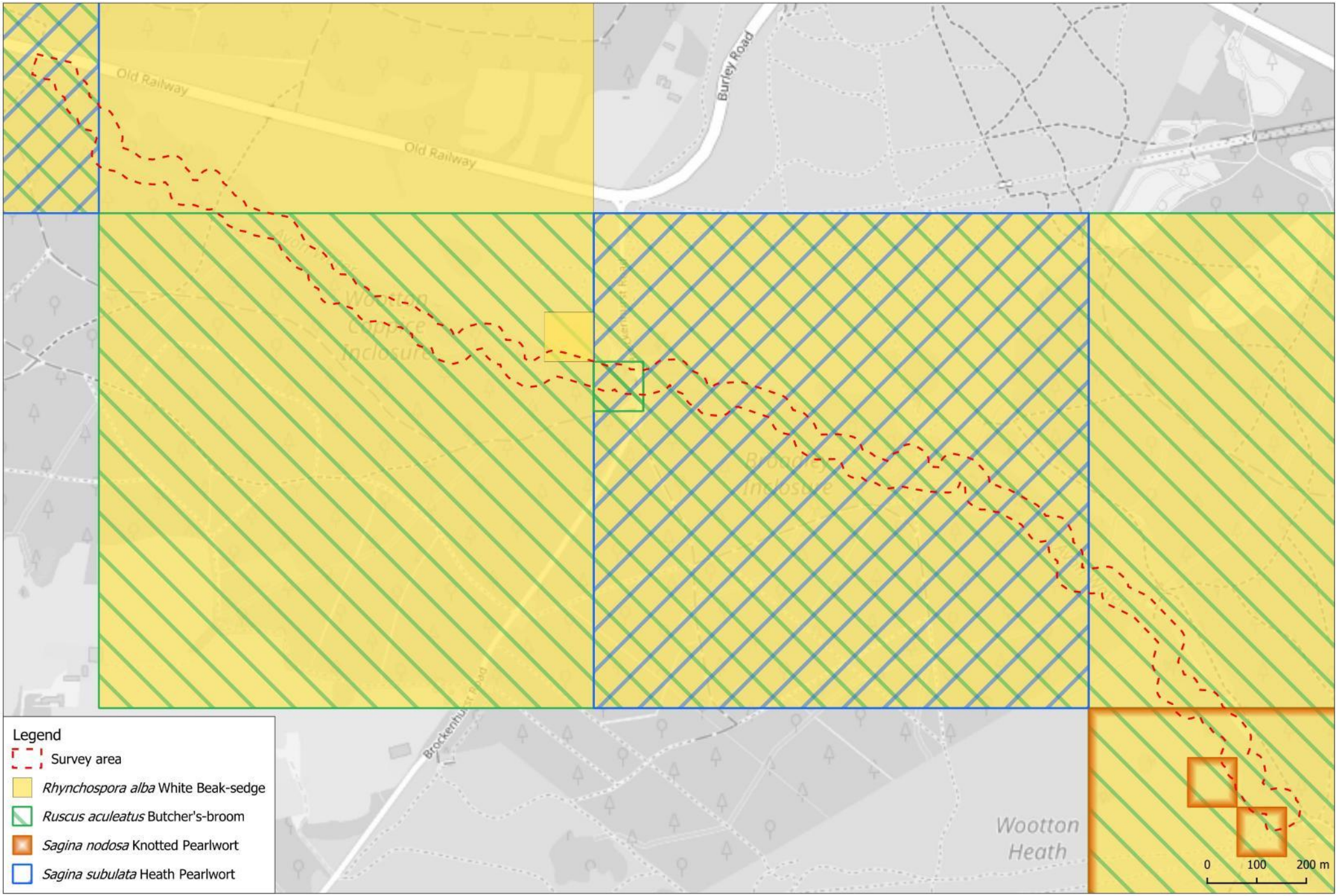


Appendix map 9: Wootton notable & protected species

Species data supplied by Hampshire Biodiversity Information Centre (HBIC).

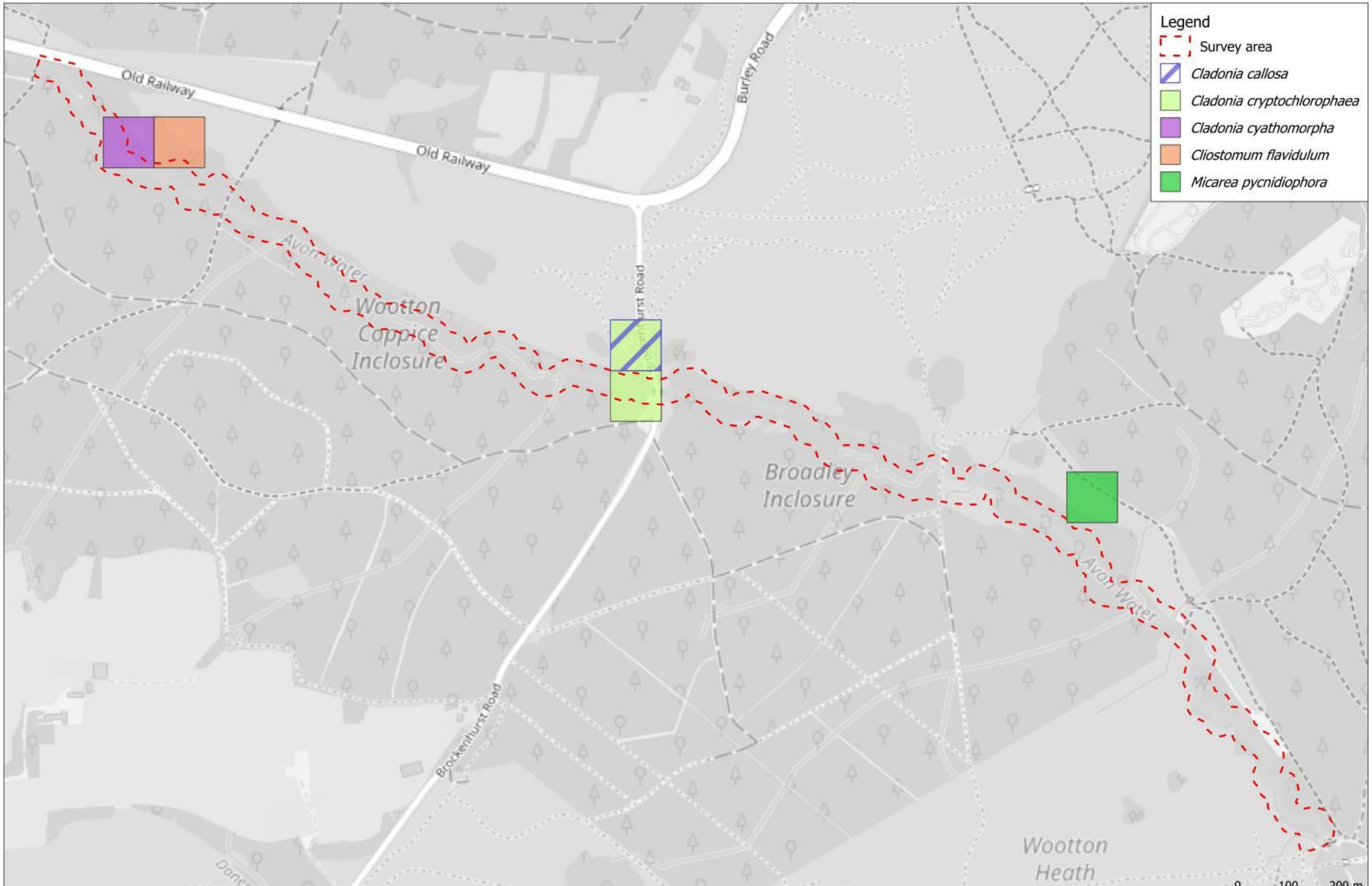
Appendix map 10: Wootton notable & protected species

Appendix map 11: Wootton notable & protected species



Appendix map 12: Wootton notable & protected species

Appendix map 13: Wootton notable & protected species



Appendix map 14: Wootton notable & protected species