Trees of Interest

on Portsdown Hill SSSI, Hampshire

Tree Survey 2025



Figure 1: View over the SSSI

Survey and Report by Megan K. Sice

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SUMMARY

- This survey was conducted on a voluntary basis for the Portsdown Hill Countryside Service across June and July of 2025 by Megan Sice, as an assessment and record of specific trees of interest and ecological note, and to build an interpretable interactive map of said trees using GIS.
- Additional data was collected out of extraneous scientific interest, including health assessment (especially for *Fraxinus excelsior* and *Ulmus agg.* specimens), basal area measurement, damage (including vandalism, ivy strangulation, and evidence of human management), and observed associated species.
- A total of 644 trees were surveyed, which were successfully integrated into a filterable GIS layer.
- *Fraxinus excelsior* as the most common tree species, followed by *Ulmus agg.*. Only two *Juniperus communis* specimens exist within the SSSI, and undesirable species *Fraxinus ornus* and *Quercus ilex* remain small in population size.
- Of the 329 *Fraxinus excelsior* surveyed, 75% had some level of Ash Dieback visible.
- Tree no. 281 supports a healthy Brown Hairstreak colony and is the only large, healthy *Fraxinus excelsior* specimen on the site.



Figure 2: View of Portsmouth from the hill

ACKNOWLEDGEMENTS

This survey would not have been possible without the expertise, site information, and general good-naturedness of the Site Manager, Richard Jones, and other members of the Portsmouth City Council Countryside Team. The Friends of Portsdown Hill work group on Wednesdays and Fridays were also greatly helpful in clearing paths into overgrown scrub to access harder-to-reach trees.

INTRODUCTION

Portsdown, also known as Portsdown Hill, is a south-facing chalk escarpment owned in sections by Portsmouth City Council, Fareham Borough Council, and the Ministry of Defence. Comprising of amenity and SSSI grassland, scrub, and newly wooded areas, the site is impressively species-rich and provides various ecological and aesthetic benefits on the edge of such a densely urban population.

Portsdown has a long history of grazing and until the 1950s was predominantly a short grassland site (Jones, 2021). Between the 1950s and 1990s, the site suffered a lapse in management, allowing re-vegetation at the expense of increasingly threatened chalk downland. Whilst management in the form of rotational scrub removal, mowing, and grazing, has since resumed, a significant quantity of trees or various species have endured and become an integrated part of the landscape.



Figure 3: South of Fort Widley, 1955 (Jones, 2021)



Figure 4: South of Fort Widley, 1999, (Google Earth, 2025)



Figure 5: South of Fort Widley, 2024 (Google Earth, 2025)

The successional scrub mosaic (Appendix 1, catcode 6), including the less conventional woodland pockets, have become highly valuable to non-grassland flora and fauna, many of which are uncommon or threatened in the UK, such as *Sanicula europaea, Thecla betulae,* and *Gonocerus acuteangulatus*. Species-rich calcareous grassland must be conserved in the current ecological climate, so areas of scrub which are least beneficial will continue to be cleared. Hence, an assessment of which woody vegetation to conserve and which to remove is beneficial for the future management of the site.

The somewhat linear site is split into 10 compartments of differing sizes (between 3 and 12 hectares) and topographical features.

This survey was conducted on a voluntary basis for the Portsdown Hill Countryside Service (PHCS) across June and July of 2025 by Megan Sice, as an assessment and record of specific trees of interest and ecological note, building on previous botanical surveys by John Norton, Phil Wilson, and observations by the Site Manager, Richard Jones.

Twelve survey days of varying hours saw the collection of data using GPS pins, basal measurements, form and height classification, and disease and damage assessments of five tree species of ecological interest, and two of clearance priority. As an extraordinarily warm and dry spring, some lack of vegetative vigour was experienced, but health assessments should not have been impacted for mature trees.



Figure 6: Ash tree looking over Portsmouth

SURVEY SCOPE

Survey aims

The aims and objectives of this survey as per the request of the site manager were:

- To map "trees of interest and ecological note" within all compartments to create an interpretable interactive map using GIS

In addition, the following data was collected out of extraneous scientific interest:

- Relative size
- Notes on location characteristics
- Health assessment, especially for *Fraxinus excelsior* and *Ulmus agg*. specimens
- Basal area measurement
- Growth characteristics
- Damage including vandalism, ivy strangulation, and evidence of human management
- Observed associated species

Survey scope

When defining "trees of interest and ecological note" out of the list of trees on the site (see Appendix 1 for full list of species), it was decided that *Quercus robur, Fraxinus excelsior, Ulmus agg.*, and *Taxus bacca* would form the bulk of this survey. Additionally, undesirable species *Fraxinus ornus* and *Quercus ilex* would be recorded, as those that have current aesthetic and shade-provision properties may be able to be removed if a suitable native species can replace them. *Juniperus communis* is included in the survey as a desirable species, but much of the extraneous data is missing, as specimens on the hill are low-growing. Trees shorter than "basal height" (1.3m) were not included unless they were *Juniperus communis* or regrowth from felled mature trees.



Figure 7: Juniperus communis specimens on the site

METHODOLOGY

Field survey preparation

The creation of a risk assessment and survey form, and procurement of equipment took place at the beginning of June 2025. Data was directly input into Google Sheets, so that it may be accessible from multiple devices simultaneously. Other equipment used to collect data included:

- Steel toe-capped walking boots
- Tape measure
- Garmin GPX
- Mobile phone
- Safety glasses
- Gloves
- Telescopic loppers

The health assessments for *Fraxinus excelsior, Ulmus agg*. and *Quercus robur* specifically regarding the respective Ash Dieback Dutch Elm Disease, and Oak Decline were determined visually. Only Ash Dieback was assigned a numeric value of classification using those recommended by the Tree Council (2020).

Pilot study

A pilot study was undertaken on the 13th June 2025 to determine any gaps in methodology and risk assessment before committing to the full survey.

SURVEY METHODOLOGY NOTES

Days in which data was collected included:

- June 13th, 18th, 19th, 20th, 25th, 27th 2025
- July 2nd, 9th, 16th, 18th, 23rd, 24th 2025
- August 8th 2025

The number of hours undertaken on each of the above days varied between 4 and 12 depending on weather, access, and schedule availability. The total across all days totalled up to exactly 100 survey hours.

The compartments were used as a general guide to survey order, but in an effort to avoid lone working, most survey sites aligned with where members of Portsmouth City Council were working on that particular day. This also allowed the much appreciated support of local volunteers for accessing trees to take measurements, especially those located in deep scrub.

The values recorded for basal area were largely dependent on growth form. As circumference was measured, trees with coppice forms had much greater measurements due to the multitude of stems increasing the measured surface area.

RESULTS

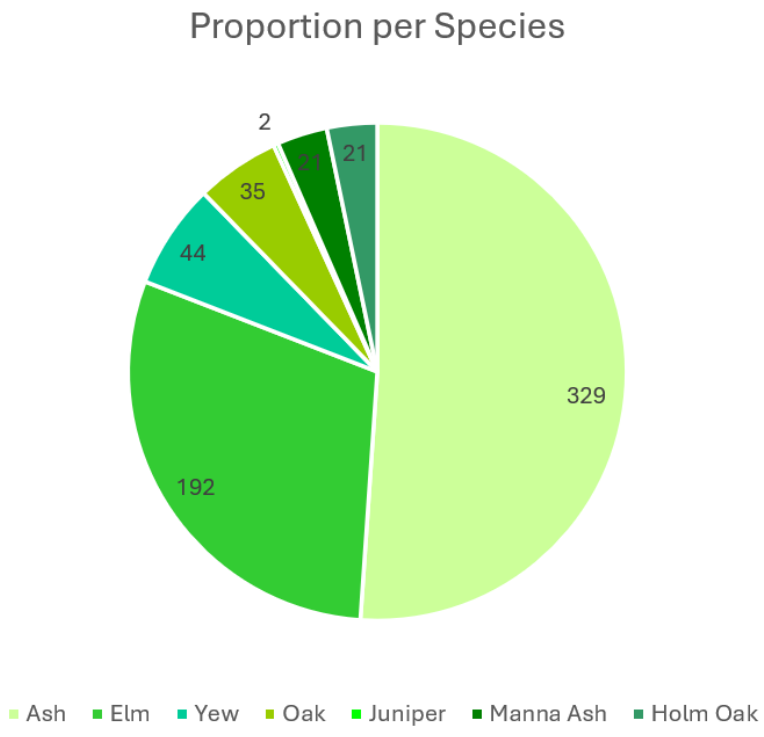
A total of 644 trees were surveyed, which were successfully integrated into a filterable GIS layer.



Figure 8: Screenshots of the created GIS layer showing all trees (above) and highlighting Ash trees in orange (below).

Figure 9: Species quantity comparison from data in Table 1.

The collected size data is tabulated below, showing *Fraxinus excelsior* as the most common tree species, followed by *Ulmus agg.*. Only two *Juniperus communis* specimens exist within the SSSI, and undesirable species *Fraxinus ornus* and *Quercus ilex* remain small in population size. Figure 5 shows this distribution in graph form.



SPECIES	RELATIVE SIZE	COUNT
Ash *(Fraxinus excelsior*)	Tiny	45
	Small	119
	Medium	102
	Large	63
SUBTOTAL		329
Elm *(Ulmus agg.)*	Tiny	18
	Small	129
	Medium	35
	Large	10
SUBTOTAL		192
Oak *(Quercus robur)*	Tiny	0
	Small	9
	Medium	23
	Large	3
SUBTOTAL		35
Yew *(Taxus baccata)*	Tiny	1
	Small	8
	Medium	31
	Large	4
SUBTOTAL		44
Juniper *(Juniperus communis)*	N/A	2
SUBTOTAL		2
Holm Oak *(Quercus ilex)*	Tiny	1
	Small	3
	Medium	7
	Large	10
SUBTOTAL		21
Manna Ash (*Fraxinus ornus)*	Tiny	7
	Small	13
	Medium	1
	Large	0
SUBTOTAL		21
TOTAL		644

Table 1: Tree species and the count of their relative sizes.

Species observed using surveyed trees

Climbers: *Hedera helix, Clematis vitalba, Bryonia dioica, Convolvulus sp., Rubus sp.*

Epiphytes: bryophytes, lichens, *Daldinia concentrica, Trametes versicolour, Terana caerulea*)

Invertebrates: *Gymnoscelis rufifasciata, Hypena proboscidalis, Patania ruralis, Camptogramma bilineata, Thecla betulae, Satyrium w-album, Pararge aegeria*, gall wasps, nest wasps, woodlice, ants, spiders

Birds: *Pica pica, Columba palumbus, Covus corone, Corvus monedula, Phylloscopus collybita, Aegithalos caudatus, Parus major, Garrulus glandarius, Troglodytes troglodytes*

Mammals: *Meles meles, Homo sapien, Bos taurus*

Ground: *Sanicula europea, Daphne laureola, Ruscus aculeatus*

Of the 329 *Fraxinus excelsior* surveyed, 75% had some level of Ash Dieback visible.

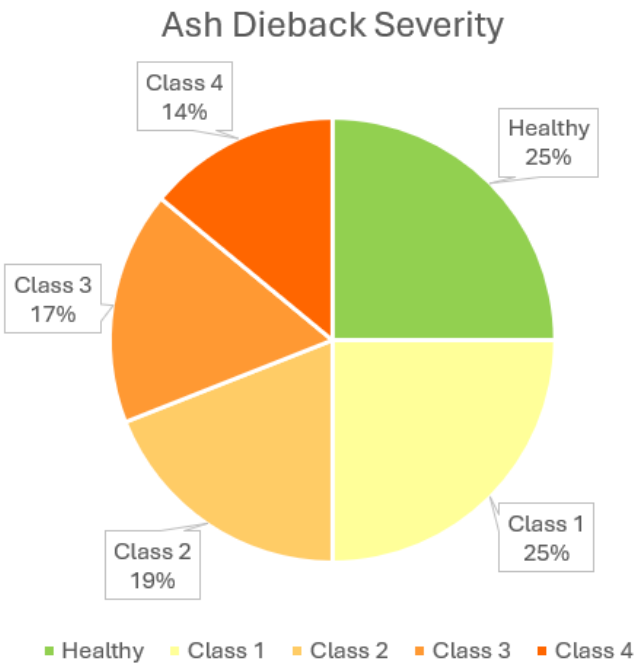


Figure 10: Ash Dieback severity



Figure 11: Comparison of class 4 dieback (left) and class 2 dieback (right)

NOTES FROM THE FIELD

- Eastern Compartments 9 and 10 have large quantity of fruit trees (apple, plum, walnut)
- Western sites have woodland of greater ecological health with ancient indicators such as Wood Sanicle (*Sanicula europea*)
- Presence of the butterflies White-letter Hairstreak (*Satyrium w-album*) and Brown Hairstreak (*Thecla betulae*) are encouraging as on this site these are dependent on mature trees (*Ulmus agg.* and *Fraxinus excelsior,* respectively) suffering from chronic disease
    - one particular tree, the only healthy large *Fraxinus excelsior* (no. 281), is confirmed to support a large *Thecla betulae* population as per transect results on 2nd July and follow-up survey
- Large populations of the Speckled Wood butterfly (*Pararge aegeria*)
- No large Ulmus specimens
- Many of the large, mature trees (particularly *Fraxinus excelsior and Ulmus agg*.) were previously located at the base of Compartment 4, which were cleared as part of electricity maintenance (power lines) in the winter of 2024.

Observation gallery



Figure 12: Speckled Wood (Pararge aegeria)



Figure 14:Brown Hairstreak (Thecla betulae)

Page 1: Butterflies spotted whilst surveying which require trees to complete their lifecycle.



Figure 13: White-letter Hairstreak (Satyrium w-album)



Figure 16: Galls on one of the oak trees



Figure 17: Pigeon nest in Taxus baccata



Figure 19: Badger set under Taxus baccata



Figure 18: Bryophytes and lichens growing on a tree



Figure 15: Wasp nest on Quercus ilex

Page 2: Evidence of other creatures using the trees for habitat.



Figure 21: Invertebrate damage (holes) and scrubcutter damage (stripes)



Figure 20: Severe ivy strangulation



Figure 22: Dutch elm disease

Page 3: Natural damages including invertebrate damage, climbers, and diseases.



Figure 25: Healing scrubcutter damage on a young tree



Figure 24: Nail in Taxus baccata after vandalism activities on the urban edge of the site

Page 4: Human-inflicted damage both as a direct or indirect part of management, and vandalism.



Figure 23: Ring-barking of a Quercus ilex specimen



Figure 26: Very unusual growth of a tree in deep scrub



Figure 27: Regrowth after complete felling of a mature Fraxinus excelsior

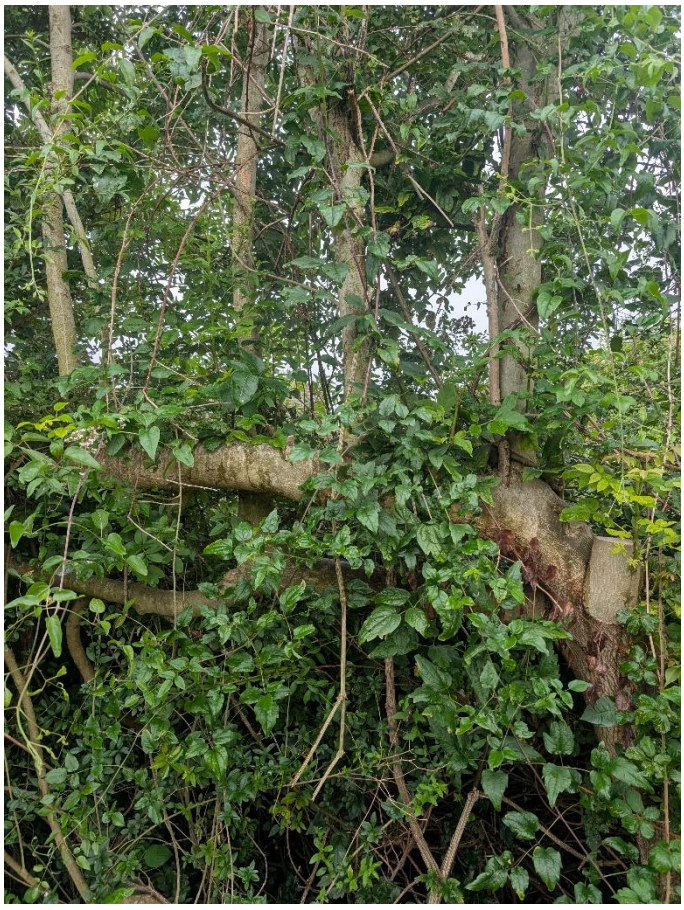


Figure 28: Regrowth of a Fraxinus excelsior specimen after previous management

INTERPRETATION

Fraxinus excelsior trees were by far the most common, followed by *Ulmus agg.*. These two species particularly are more concentrated at the base of the hill (likely due to eutrophication from surface run-off and urban proximity), or along roadsides (attributed to wind-dispersal of seeds) Most trees of these two species on the site are small in stature, showing their quick turnover due to disease preventing a full life. However, their lifespans are complete enough to facilitate that of others, most notably lepidoptera: the Brown Hairstreak, *Thecla betulae*, dependent on *Fraxinus excelsior* for aphid honeydew; and the White-letter hairstreak, *Satyrium w-album,* and Mother of Pearl, *Pleuroptya ruralis,* which are both reliant on *Ulmus agg.* for various lifecycle stages (Butterfly Conservation, 2025).

In fact, the above diseases even have some benefits in terms of management of the site as chalk downland. With a reduced lifespan, less management is needed, and a constant supply of standing deadwood is provided for the 1700+ invertebrate species in Britain dependent on decaying wood to complete their lifecycles. Species such as *Platycis minutus* and *Melandrya caraboides* specifically develop in soft moist heartwood, especially that of Fraxinus excelsior (Alexander, 1999). That being said, disease-resistant elms have been planted in other areas of the site (Brookes, 2019) in efforts to allow healthier populations of the tree to persist.

Unlike these fast-growing, disease-prone species, the *Quercus robur* and *Taxus baccata* trees present on site are primarily mid-size. *Taxus baccata* is a slow-growing species, and although it is likely they have been on the site since it was grassland (a few trees are visible in *Figure 1*, some of which are recognisable in Figure 3), their lifecycle will affect this size distribution. Conversely, *Quercus robur* trees were unlikely to have been present when the land was grazed grassland, as the saplings would have been palatable to livestock, and the low-nutrient status of the grassland would have inhibited growth as *Quercus robur* shows an ecological preference for humid and clayish soils (Olrik et al, 2012). This is highlighted in the stunted growth of many of the larger oak trees, and the discolouration of leaves due to deficiency. Unlike the other species, *Quercus robur* trees are mostly found at the top of the slope, as acorns are primarily dispersed by small rodents and birds rather than gravity and wind (Olrik et al, 2012). They are also much more able to colonise unwooded ground, with large food supplies in the acorn, and can grow up through quite rank awards (Rodwell, 1991). If enough Oaks invade into grassland at the same as Crataegus, the succession may pass directly into woodland (Duffy 1974).

The primary wooded community on the site (as assessed by Norton, 2020) is W21:Crataegus-hedera scrub. Within this community, tree species invade together with, or even in advance of the smaller trees and shrubs, coexisting for some time before overtopping them. As stated by Rodwell (1991), the most frequent trees overall is *Fraxinus excelsior* with *Acer pseudoplatanus* (common but controlled on the site) more occasional, and *Quercus robur* preferential to heavier soils.

Understory species found on the site such as *Daphne laureola* are woodland species and enter only in the later successional stages, indicating patches of much older scrub (Duffy 1974). This was also noted in Norton, 2020, as areas of secondary woodland are mapped.

Taxus baccata is a classic species of calcareous soils in Southern Britain. In the later stages of succession the dense shade of the closed yew canopy suppresses virtually all the field-later species, especially *Juniperus communis*, which it nurses but eventually overtops (Rodwell, 1991). The two *Juniperus communis* individuals present on the site are the same sex and in

completely different areas of the site and hence cannot reproduce. Any future of a greater population across the site would require external pollination or plantation of new individuals.

Quercus ilex, a Mediterranean species introduced to the UK in the 1500s (Woodland Trust, 2026) is particularly naturalised locally due to the dry, well-drained calcareous soil. The Database of Insects and their Food Plants lists 44 associated invertebrates for *Quercus ilex*, versus 274 for *Quercus Robur* (Agassiz, 2025), hence their displacement of native vegetation is problematic. *Quercus ilex* is considered invasive on the site and has been actively removed for the entire duration of management. In areas where large *Quercus ilex* specimens or populations have created specific aesthetic or ecological benefits, some individuals have been retained whilst nearby *Quercus robur* grow large enough to be effective replacements.

Fraxinus ornus is another invasive neophyte that was introduced to the site purposefully by a previous site manager, and has been difficult to keep on top of since. It is largely contained to one part of the site, however the steepness of the slope hinders management methods of the consistent new saplings.



Figure 29: Conservation grazers, Aberdeen cattle

Trees across the site are generally useful as habitat and shelter in terms of shade provision for a variety of fauna as well as flora. This particularly applies to human visitors, as the site acts as a suntrap in warmer conditions, and as shelter for cattle during the colder and wetter winter grazing months.

The boundaries between the grassland, scrub, and woodlands are great examples of ecotones; which have great ecological value in their edge effect. Ecotones can be more diverse in both fauna and flora species than either of the communities they separate (Duffy 1974).

Several bird species are more or less confined to scrub, but they depend more on the structure of the vegetation rather than species composition. Some species show fairly broad habitat requirements, whilst other need specific features such as early successional stages. The recent site management is a primary factor influencing the bird species, unlike the history of a site which holds more significance to plants and insects (Kirby, 1988). In some cases, the use of scrub as bird-roosts may play a part in soil eutrophication (Rodwell, 1991).

There are known invertebrate communities associated with the algae, lichens, bryophytes and micro-fungi growing epiphytically on the surfaces of the trunk and branches. Additionally, some species are dependent on the mycorrhizal fungi associated with the tree roots; and others associated with shaded dung (Alexander 1999).



Figure 30: Gymnopilus junonius, the Spectacular Rustgill, found growing out of a tree stump

MANAGEMENT RECOMMENDATIONS

The continued removal of invasive species remains the priority in scrub management. Within this, two focus objectives may be prudent:

> In Compartment 9: continuing removal of *Quercus ilex* at the southern fenceline as the population is keen to regenerate.
>
> Compartment 4: continuing removal of *Fraxinus ornus* on steep bank to reduce the spread across the SSSI.

The conservation of particular trees is also of merit. Tree no. 281 supports a healthy Brown Hairstreak colony and is the only large, healthy *Fraxinus excelsior* specimen on the site. Surrounding Rubus-Clematis scrub may benefit from patches of clearance to encourage *Prunus spinosa* as a foodplant. Allowing the scrub succession of spinose shrubs will have the dual benefit of accelerating shielding from the adjacent road and roundabout. Other younger *Fraxinus* in the vicinity should be removed to disallow acting as a vector for ash dieback.

Regeneration of trees and scrub along road borders may be encouraged to create buffer zones for the absorption of air, road runoff, and noise pollution on the site. This is especially effective if larger trees and scrub are periodically removed and hence take nutrients and carbon off site. Larger scrub can also act as a road tunnel to protect fauna by pushing them up and over the traffic. At the base of the hill, allowing the higher quality scrub and woodland (in terms of species composition and structure) to persist is also beneficial to local residents to slow water runoff.

To a lesser extent, the aesthetic appeal of some of the larger and more unique trees on the site is also of value to local residents, and where possible should be maintained or replaced (over the span of decades) in the case of the few *Quercus ilex* that fulfil this criteria.

The current target for the management of habitat composition on the site is 57% species-rich calcareous grassland at the expense of coarse grassland and scrub (Jones, 2026). The last vegetation survey in 2020 by John Norton (Appendix 2: Table 3) puts the grassland value at 46%, and thus more active scrub removal is still required to stay on track, alongside the consistent passive activity of impeding the succession of the grassland back to scrub.



Figure 31: scrub management on the downland using a tractor

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APPENDICES AND NOTES

Appendix 1: Results



Figure 32: Screenshots of the full QGIS file

Appendix 2: Vegetation

Table 2: Total area for main vegetation classifications (Norton, 2021)

catcode	Description	Area (m^2)	Area (ha)	% of total
0	Bare ground / unvegetated areas	562	0.06	0.02%
1	Short species rich calcareous grassland (*Festuca ovina* dominated) (CG3a/'CG3aS'/CG2/CG7 transitions)	43157	4.32	7.83%
2	Short species rich calcareous grassland (*Bromopsis erecta* dominated) (CG3a, 'CG3aT')	69809	6.98	12.67%
3	Medium to long species rich calcareous to neutral grassland (CG3b, MG1e)	10794	1.08	1.96%
10	Short herb rich calcareous to neutral grassland (MG5a/b)	2065	0.21	0.37%
4	Rough species poor calcareous to neutral grassland and weed communities (MG1a/b/d, CG3d, OV25)	8358	0.84	1.52%
5	Improved to semi-improved grassland on trampled paths (MG6c/MG7)	8248	0.82	1.50%
6	Chalk scrub ecotone ('CSE' - managed calcareous grassland/scrub mosaic)	123589	12.36	22.43%
7	*Rubus-Clematis vitalba* scrub ('RC' - no NVC equivalent)	30877	3.09	5.60%
8	Recently cleared chalk scrub ('CS' and 'CX' =W21d); gorse & blackthorn scrub (W23)	31681	3.17	5.75%
9	Dense scrub, trees and developing woodland (W21a, W21d)	221760	22.18	40.25%
	Total	**550900**	**55.09**	**1.00**

Table 3: Total area by broad groups of vegetation (Norton, 2021)

catcode	Broad vegetation type	Area (m^2)	Area (ha)	% of total
0	Bare ground / unvegetated areas	562	0.06	0.10%
1, 2, 3, 10	Species rich calcareous (to neutral) grassland (Priority Habitat)	125825	12.58	22.84%
6	Species rich calc grassland/scrub mosaic (CSE)	123589	12.36	22.43%
4, 5	Species poor calcareous to neutral grassland	16606	1.66	3.01%
7	*Rubus-Clematis* scrub (RC)	30877	3.09	5.60%
8,9	Scrub and woodland	253441	25.34	46.01%
	Total	**550900**	**55.09**	**1.00**

Table 4: Summary of notable plant species (Norton, 2021)

Calcareous grassland indicators	56
England Red List: Vulnerable	1
England Red List: Near Threatened	15
NERC S41	1
Hants Notables: County Rare	1
Hants Notables: County Scarce	4
Nationally Scarce	2

Table 5: Tree and shrub species (Norton, 2021)

Trees & shrubs	
Acer campestre	Field Maple
Acer platanoides	Norway Maple
Acer pseudoplatanus	Sycamore
Betula pendula	Silver Birch
Buddleja davidii	Butterfly-bush
Clematis vitalba	Traveller's-joy
Cornus sanguinea	Dogwood
Corylus avellana	Hazel
Cotoneaster bullatus	Hollyberry Cotoneaster
Cotoneaster dielsianus	Diel's Cotoneaster
Cotoneaster divaricatus	Spreading Cotoneaster
Cotoneaster franchetii	Franchet's Cotoneaster
Cotoneaster hjelmqvistii	Hjelmqvist's Cotoneaster
Cotoneaster horizontalis	Wall Cotoneaster
Cotoneaster lacteus	Late Cotoneaster
Cotoneaster obtusus	Dartford Cotoneaster
Cotoneaster salicifolius	Willow-leaved Cotoneaster
Cotoneaster simonsii	Himalayan Cotoneaster
Cotoneaster sp.	cotoneaster species
Cotoneaster sternianus	Stern's Cotoneaster
Cotoneaster vilmorinianus	Vilmorin's Cotoneaster
Crataegus monogyna	Hawthorn
Euonymus europaeus	Spindle
Fagus sylvatica	Beech
Fraxinus excelsior	Ash
Fraxinus ornus	Manna Ash
Hedera helix	Ivy
Ilex aquifolium	Holly
Juglans regia	Walnut
Leycesteria formosa	Himalayan Honeysuckle
Ligustrum vulgare	Wild Privet
Lonicera japonica	Japanese Honeysuckle
Lonicera nitida	Wilson's Honeysuckle
Lonicera periclymenum	Honeysuckle
Malus domestica (Malus pumila)	Apple
Populus sp.	Poplar species
Prunus avium	Wild Cherry
Prunus cerasifera	Cherry Plum
Prunus spinosa	Blackthorn
Pyracantha coccinea	Firethorn
Quercus ilex	Evergreen Oak
Quercus robur	Pedunculate Oak
Rhamnus cathartica	Buckthorn
Rosa arvensis	Field Rose
Rosa canina	Dog Rose
Rosa micrantha	Small-flowered Sweet-briar
Rosa rubiginosa	Sweet Briar
Rosa stylosa	Short-styled Field-rose
Rubus armeniacus	'Himalayan Giant' Bramble
Rubus fruticosus agg.	Bramble
Ruscus aculeatus	Butcher's-broom
Sambucus nigra	Elder
Sorbus aria	Common Whitebeam
Sorbus intermedia	Swedish Whitebeam
Taxus baccata	Yew
Ulex europaeus	Gorse
Ulmus agg.	Elm species
Ulmus glabra	Wych Elm
Ulmus procera	Elm
Viburnum lantana	Wayfaring-tree
Viburnum opulus	Guelder-rose
Vinca major	Greater Periwinkle



See legend on separate page

Main vegetation types

- Short species rich calcareous grassland (Festuca ovina dominated) (CG3a/CG2/CG7 transitions)
- Short species rich calcareous grassland (Bromopsis erecta dominated) (CG3a)
- Medium to long species rich calcareous to neutral grassland (CG3b, MG1e)
- Short herb rich calcareous to neutral grassland (MG5a/b)
- Rough species poor calcareous to neutral grassland and weed communities (MG1a/b, CG3d, OV25)
- Improved to semi-improved grassland on trampled paths (MG6c/MG7)
- Chalk scrub ecotone ('CSE' - managed calcareous grassland/scrub mosaic; mostly referable to CG3b)
- Rubus-Clematis vitalba scrub ('RC' - no NVC equivalent)
- Recently cleared chalk scrub ('CS' and 'CX' =W21d); gorse & blackthorn scrub (W23)
- Dense scrub, trees and developing woodland (W21a, W21d)

Figure 33: Main NVC types (Norton, 2021)