

Nettlecombe Court Slope and Old Weather Station Field: National Vegetation Classification 2019

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Nettlecombe Court Slope and Old Weather Station Field

National Vegetation Classification

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Natural England Field Unit

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Background

Nettlecombe Court is situated on the northern fringes of the Brendon Hills in West Somerset and lies within Exmoor National Park. The Court itself now functions as a Field Studies Centre the grounds of which contain a series of formal old lawns and adjacent parkland habitat. Part of the landholding lies within Nettlecombe Park SSSI, an important example of an ancient deer park supporting a large collection of veteran trees with rich associated lichen and invertebrate communities. The Old Weather Station Field is situated approximately 1.5km south of Nettlecombe Court and has a north-facing sloping aspect. The sheep-grazed pasture contains a small enclosed meteorological station maintained by FSC staff. Most of the land within the vicinity of Nettlecombe Court is within the ownership of Nettlecombe Estates Ltd. A plan of the site showing the key survey locations can be found in Appendix 1.

The significance of the site for waxcaps and other declining grassland fungi was first highlighted by Richard Thompson whilst carrying out a series of waxcap grassland surveys for Somerset Environmental Records Centre (SERC) in the period 1997-1999. Thompson's report (2000) separately detailed the findings of surveys carried out at Nettlecombe Court and the Old Weather Station Field and showed that both sites were then of national importance for their waxcap fungi populations, with totals of 18 and 23 species respectively recorded. At that time the count of 23 waxcap species from the Old Weather Station Field was known to be the second highest in the county and was only exceeded by Pinkworthy on Exmoor. Furthermore the pasture was cited to support more "notable" grassland fungi species than any other site in Somerset. This latter statistic was based upon research by Maurice Rotheroe (1996) who had previously produced a list of species deemed to be most indicative of quality waxcap grassland sites in the UK.

The precise details of all of the mycological findings at Nettlecombe prior to 2000 are currently unavailable but regular recording has taken place since 2009 and this data is held by both FSC staff and Natural England. Following the previous surveys the site was later submitted to Natural England as a proposed SSSI for its grassland fungi assemblage. The present vegetation study of the grasslands was commissioned in support of this proposal and to determine whether the grassland habitat itself should be listed as a notified feature of the proposed SSSI.

Survey methodology

During the present survey prioritisation was given to the assessment of the vegetation communities within the Old Weather Station Field to the south of Nettlecombe Court. This large pasture is not included within the existing Nettlecombe Park SSSI but has been shown to be one of the richest grassland localities for waxcaps and other CHEGD fungi within the Nettlecombe Estate.

A second grassland parcel at Nettlecombe Court Slope was also selected for sampling. This steep south-facing slope is situated directly adjacent to the Nettlecombe Court Field Studies Centre and lies within the existing Nettlecombe Park SSSI. Previous mycological survey work here has produced a number of notable finds of CHEGD fungi.

A third and perhaps most significant area for CHEGD fungi within the estate is the series of formal old lawns which surround the Field Studies Centre. The lawns, which are frequently mown and much utilised by visiting groups were not included for NVC-sampling but were briefly examined on this visit.

At each surveyed grassland unit a total of five 2 x 2m vegetation samples were taken from homogenous stands of vegetation. For each quadrat a species list was compiled including any bryophyte or lichen species found to be present. The abundance of each species within the plot was then estimated using the DOMIN scale below.

DOMIN	Abundance (%)
1	1-3 (few plants)
2	1-3 (several plants)
3	1-3 (many plants)
4	4-10
5	11-25
6	26-33
7	34-50
8	51-75
9	76-90
10	91-100

Table 1.

Any areas of bare ground were also recorded. The precise location of each sampled plot was recorded by GPS and a photographic record taken for inclusion within this report. Each grassland unit was additionally walked over in its entirety to compile a more complete list of vascular plant species. Notes were also taken regarding grassland condition, livestock densities, boundary features, etc. The collated plant data was later checked against the NVC tables and descriptions as outlined in British Plant Communities Volume 3: Grasslands and Montane Communities (Rodwell 1992). The quadrat data was then additionally inputted into TABLEFIT, a computer software programme which determines NVC plant communities from raw data.

The fieldwork was carried out on July 16th 2018 by Andy McLay.

Results

Old Weather Station Field

Number of quadrat samples: 5

Apart from a small area of semi-improved even ground adjacent to the weather station at the top of the field, the vast majority of vegetation within this pasture conforms to the NVC community **U4: *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile* grassland**. This habitat type is the principal semi-natural acidic grassland community within the cooler and damper parts of the UK and is particularly frequent in and around the upland fringe. It is often well-grazed and frequently occurs in association with heathland habitats from which it is sometimes evidently derived. In addition to *Agrostis capillaris* (Common Bent) and *Festuca ovina* (Sheep's Fescue) or *F. rubra* (Red Fescue) the most frequent associated forbs are usually *Galium saxatile* (Heath Bedstraw) and *Potentilla erecta* (Tormentil). The pleurocarpous moss *Rhytidiadelphus squarrosus* is nearly always present and often abundant within the sward, frequently growing with *Pseudoscleropodium purum*.



Old Weather Station Field. July 2018

At this location *Galium saxatile* was seen to be surprisingly sparse within the unimproved acidic grassland sward but this may have been partly attributed to extreme droughting on the free-draining slopes (see Discussion). Other forbs were also scarce but *Lotus corniculatus* (Birdsfoot Trefoil) and *Plantago lanceolata* (Ribwort Plantain) were present in small quantity throughout with *Campanula rotundifolia* (Harebell), *Veronica officinalis* (Heath Speedwell) and *Leontodon autumnalis* (Autumn Hawkbit) occurring more locally. Some of the more typical community indicators such as *Luzula campestris* (Field

Woodrush) and *Pilosella officinarum* (Mouse-ear Hawkweed) were not recorded but this may also have been due to the parched conditions at the time of survey. The moss layer was also visibly affected by the recent dry weather but as on previous visits was found to be well-developed throughout the field. *Rhytidiadelphus squarrosus* was typically most abundant but smaller quantities of other calcifuge species such as *Pleurozium schreberi* and *Hylocomium splendens* were also present.

The total acreage of the U4 grassland community at Old Weather Station Field is 4.6ha.

The floristic table is shown below;

n = 5

Species	Frequency (n)	Abundance (DOMIN)
<i>Festuca ovina</i>	V	5-9
<i>Agrostis capillaris</i>	V	5-7
<i>Rhytidiadelphus squarrosus</i>	V	4-7
<i>Anthoxanthum odoratum</i>	V	4-5
<i>Holcus lanatus</i>	V	1-3
<i>Lotus corniculatus</i>	IV	1-3
<i>Plantago lanceolata</i>	IV	1
<i>Potentilla erecta</i>	III	2-3
<i>Achillea millefolium</i>	III	1-2
<i>Hylocomium splendens</i>	II	1-4
<i>Trifolium repens</i>	II	2
<i>Leontodon autumnalis</i>	II	1-2
<i>Rumex acetosa</i>	II	1
<i>Festuca rubra</i>	I	3
<i>Galium saxatile</i>	I	3
<i>Acer pseudoplatanus</i> (seedling)	I	1
<i>Campanula rotundifolia</i>	I	1
<i>Dactylis glomerata</i>	I	1
<i>Lolium perenne</i>	I	1
<i>Pleurozium schreberi</i>	I	1
<i>Pseudoscleropodium purum</i>	I	1
<i>Ranunculus acris</i>	I	1
<i>Ranunculus repens</i>	I	1
<i>Veronica officinalis</i>	I	1

Table 3.

A small rocky knoll is present in the south western corner of the field and the thin overlying soils here support vestiges of a more stress-tolerant acidic grassland community which includes *Aira praecox* (Early Hair-grass), *Aira caryophyllea* (Silvery Hair-grass) and *Rumex acetosella* (Sheep's Sorrel). This highly localised community is most reminiscent of **U1d: *Festuca ovina*-*Agrostis capillaris*-*Rumex acetosella* grassland, *Anthoxanthum odoratum*-*Lotus corniculatus* sub-community**. However the area identified is too small and localised to be accurately mapped.



Rock exposures in south western corner of field

The lower northern strip of the pasture and some of the eastern slopes contain an abundance of *Pteridium aquilinum* (Bracken) but at the time of survey this appeared to have been recently bruised and/or crushed in an attempt to control its spread. It was apparent that the U4 grassland community persists in this area and the findings from the mycological surveys also confirm this. Within the central part of the lower slope there is a fine solitary veteran ash tree which displays evidence of former pollarding.



Veteran ash pollard

The NVC mapping for Old Weather Station Field is shown in Appendix 1.

Nettlecombe Court Slope

Number of quadrat samples: 5

In July 2018 the Court Slope was found to contain a rather tall and increasingly coarse grass-dominated sward and it was evident that there had been no recent livestock grazing here. *Holcus lanatus* (Yorkshire Fog) was frequent across the slope and both *Dactylis glomerata* (Cocksfoot) and *Taraxacum officinale agg.* (Dandelion) were occasional throughout. The key community indicator species for U4 acidic grassland – *Festuca ovina*, *Agrostis capillaris*, *Anthoxanthum odoratum* and the moss *Rhytidiadelphus squarrosus* still formed the bulk of the vegetation but low-growing forbs such as *Potentilla erecta* and *Galium saxatile* were not recorded. Both *Achillea millefolium* (Yarrow) and *Trifolium repens* (White Clover) were however widely present and further added to the somewhat mesotrophic character of the grassland.



Nettlecombe Court Slope. July 2018

Quadrat sampling of the Court Slope resulted in an apparent match to **U4b: *Festuca ovina*-*Agrostis capillaris*-*Galium saxatile* grassland, *Holcus lanatus*-*Trifolium repens* sub-community**. This grassland type occurs naturally at lower elevations in the south west of England but is also frequently the product of former grassland improvement

practices such as liming and manuring carried out to de-acidify the soil. In addition to the aforementioned mesotrophic component the sward here also contains small quantities of *Trifolium pratense* (Red Clover), *Lolium perenne* (Perennial Rye-grass) and *Cynosurus cristatus* (Crested Dogstail). However it should be noted that the current floristic composition of the grassland may simply be a product of recent undergrazing rather than an indication of former grassland improvement. The previous mycological surveys carried out here would indicate that the slope was formerly more close-grazed than currently and perhaps was more likely to have supported the type U4 acidic grassland community at that time.

The total acreage of the U4b grassland community at Nettlecombe Court Slope is 1.8ha.

The floristic table is shown below;

n = 5

Species	Frequency (n)	Abundance (DOMIN)
<i>Festuca ovina</i>	V	7-9
<i>Anthoxanthum odoratum</i>	V	5-7
<i>Agrostis capillaris</i>	V	5-6
<i>Trifolium repens</i>	V	3-4
<i>Achillea millefolium</i>	V	2-3
<i>Holcus lanatus</i>	IV	3-4
<i>Rhynchospora squarrosus</i>	IV	1-4
<i>Pteridium aquilinum</i>	II	2-4
<i>Trifolium pratense</i>	II	2
<i>Leontodon autumnalis</i>	II	1-2
<i>Pseudoscleropodium purum</i>	II	1-2
<i>Dactylis glomerata</i>	II	1
<i>Lotus corniculatus</i>	II	1
<i>Taraxacum sp.</i>	II	1
<i>Viola riviniana</i>	I	2
<i>Cerastium fontanum</i>	I	1
<i>Cirsium arvense</i>	I	1
<i>Cynosurus cristatus</i>	I	1
<i>Lolium perenne</i>	I	1
<i>Luzula campestris</i>	I	1
<i>Plantago lanceolata</i>	I	1
<i>Prunella vulgaris</i>	I	1
<i>Ranunculus repens</i>	I	1
<i>Stellaria graminea</i>	I	1

Table 4.

In the absence of recent livestock grazing *Pteridium aquilinum* appears to be encroaching widely across the slope and was more frequent and abundant than the floristic table would suggest (see photograph below).

The NVC mapping for Nettlecombe Court Slope is shown in Appendix 1.



Bracken encroachment.

Formal lawns in proximity to the Field Studies Centre

As previously mentioned the formal lawns were not NVC-sampled on this occasion but a brief inspection produced the following list of plant species;

Species	
<i>Achillea millefolium</i>	Yarrow
<i>Cerastium fontanum</i>	Common Mouse-ear
<i>Cirsium palustre</i>	Marsh Thistle
<i>Crepis capillaris</i>	Smooth Hawksbeard
<i>Leontodon autumnalis</i>	Autumn Hawkbit
<i>Leontodon hispidus</i>	Rough Hawkbit
<i>Lotus corniculatus</i>	Birdsfoot Trefoil
<i>Luzula campestris</i>	Field Woodrush
<i>Pilosella officinarum</i>	Mouse-ear Hawkweed
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Prunella vulgaris</i>	Self-heal
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Rhytiadelphus squarrosus</i>	Spriggy turf-moss
<i>Trifolium dubium</i>	Lesser Trefoil
<i>Trifolium pratense</i>	Red Clover
<i>Trifolium repens</i>	White Clover
<i>Veronica chamaedrys</i>	Germander Speedwell
<i>Viola riviniana</i>	Common Dog Violet

Table 5.

Discussion

It should be mentioned that the timing of the NVC fieldwork coincided with a protracted hot dry period of weather which affected much of the UK and resulted in extreme drought conditions across the south of England. By mid-July many grassland sites had become parched and vegetation growth was considerably reduced. The continued dry weather into late summer turned many well-drained pastures brown and grass growth effectively ceased altogether. This situation had implications for grazing management on grasslands, resulting in some sites becoming excessively grazed and poached whilst elsewhere grazing animals were reduced or removed altogether because of the lack of fresh grass growth. At the Old Weather Station Field grazing intensity appeared to have been largely unaffected by the drought conditions and the pasture was seen to contain a suitably short and moderately-grazed sward which was relatively free of coarse grasses and tall weedy vegetation. As on previous recent visits, this grassland was considered to be a particularly fine example of an ancient unimproved acidic grazing pasture.

Despite the lack of recent grazing the Court Slope adjacent to the Field Studies Centre was found to be floristically similar to the Old Weather Station Field and presumably had a higher forb content formerly under regular grassland management. Acidic grasslands such as this are seldom described as “herb-rich” but can support good quantities of some of the key community indicator species mentioned above. In the photograph below the parched semi-natural sward on the freely-drained slope contrasts with the lush semi-improved *Holcus*-dominated grassland below.



Correlation between floristic and fungal diversity within the grasslands

Although the recent mycological surveys carried out at the Old Weather Station Field and Court Slope were less productive than anticipated this can be attributed almost entirely to excessively dry spells of weather during the autumn months of 2017/18 (A.McLay pers.obs). However, finds made at both locations were highly indicative of quality waxcap grassland sites and suggestive of a CHEGD fungal assemblage of national or even international significance. At the Old Weather Station Field in particular the suitability of the unfertilised sward for waxcaps and related grassland fungi was immediately apparent. The grassland here supports an abundant well-developed moss layer within a fine-leaved sward of *Festuca ovina* and *Agrostis capillaris*. In my experience the type U4 grassland community is the principal habitat type associated with rich CHEGD fungal assemblages within the upland districts of the UK.

At Court Slope all fungal records were made during the 2017 survey when the sward was still short enough to produce fruiting bodies. On that visit it was evident that the grassland was developing a more coarse character but the photograph below taken in October 2017 still contrasts strongly with those shown above.



Nettlecombe Court Slope. October 2017.

The series of formal lawns and adjacent churchyard at Nettlecombe Court were also seen to be highly representative of rich CHEGD fungi localities. Old unfertilised lawns such as these are essentially relict ancient semi-natural grasslands and can sometimes support nationally-important numbers of waxcap species. The lawns at Nettlecombe have produced a remarkable total of 23 waxcap species which is one of the highest counts in England for a site of this small size. Typically the lawn sward has a high content of moss and fine grasses and as described above was seen to be reasonably herb-rich. The lawns vary somewhat in quality, the Croquet Lawn being the richest mycologically was also seen to have the highest herb content whilst the larger circular lawn in front of the Field Studies Centre contains a greater component of *Lolium perenne* and has produced fewer fungal records of note. It should be noted however that this amenity lawn is heavily used for recreation by visitors to the centre and is therefore more prone to trampling and sward compaction.



View of Croquet Lawn at Nettlecombe Court. July 2018

Conclusion

The Old Weather Station Field at Nettlecombe contains unimproved acidic grassland which supports internationally-important populations of waxcap fungi. In the author's opinion this is a particularly fine example of an unimproved "waxcap grassland" and the site would easily meet specified JNCC SSSI criteria as such. It is therefore recommended that the pasture should be awarded SSSI status for both its grassland fungi assemblage and the present U4 grassland community.

The series of formal lawns at Nettlecombe Court also support waxcap populations of international importance. Whilst there is no immediate threat to these grasslands, any future changes in management priority or even ownership could impact upon their conservation value. Consideration should therefore also be given to the awarding of SSSI status to this suite of grasslands.

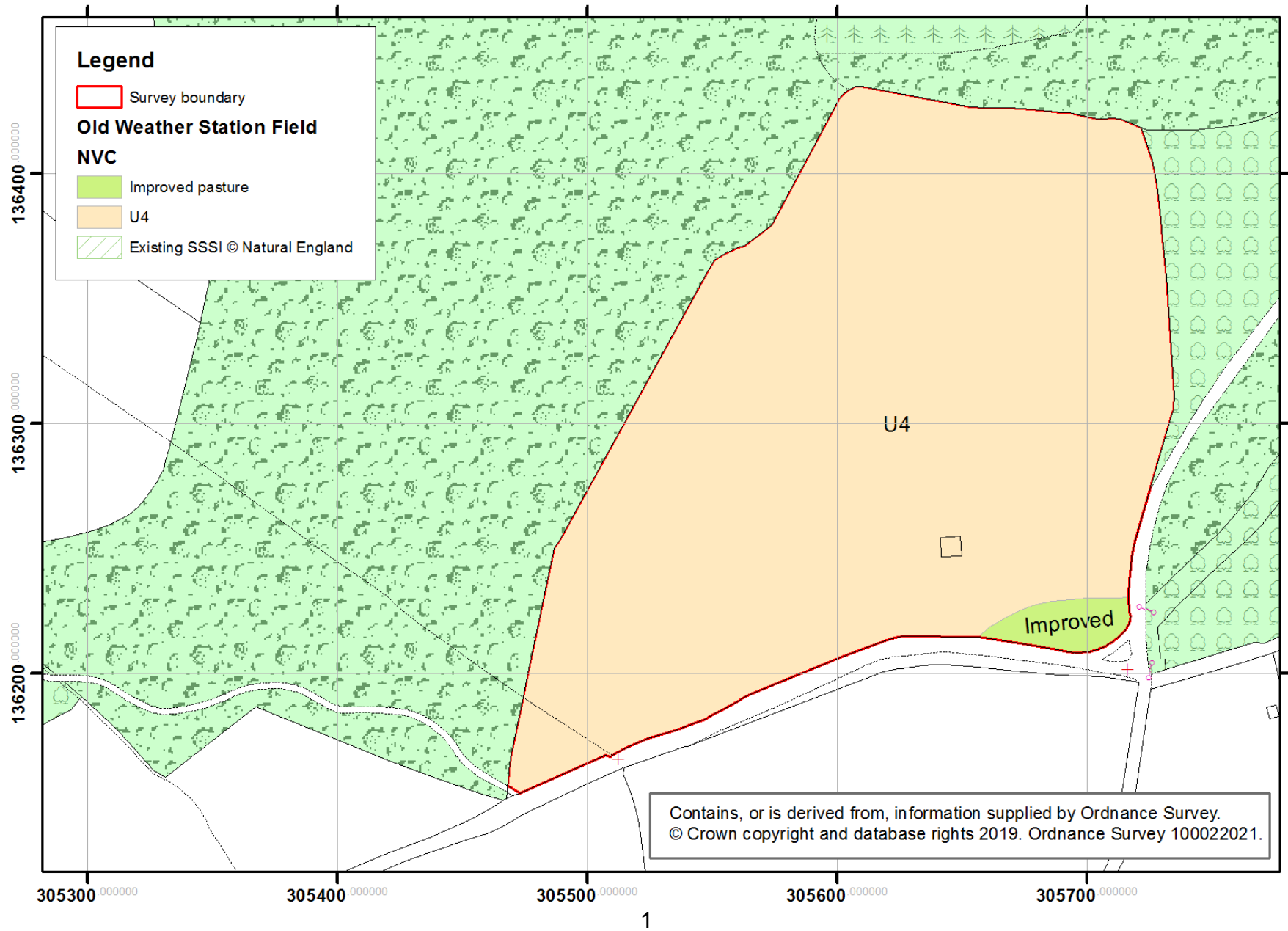
Nettlecombe Court Slope already lies within an existing SSSI but consideration should be given to recognising the grassland fungi assemblage and U4b grassland community as a notified feature of the present SSSI.

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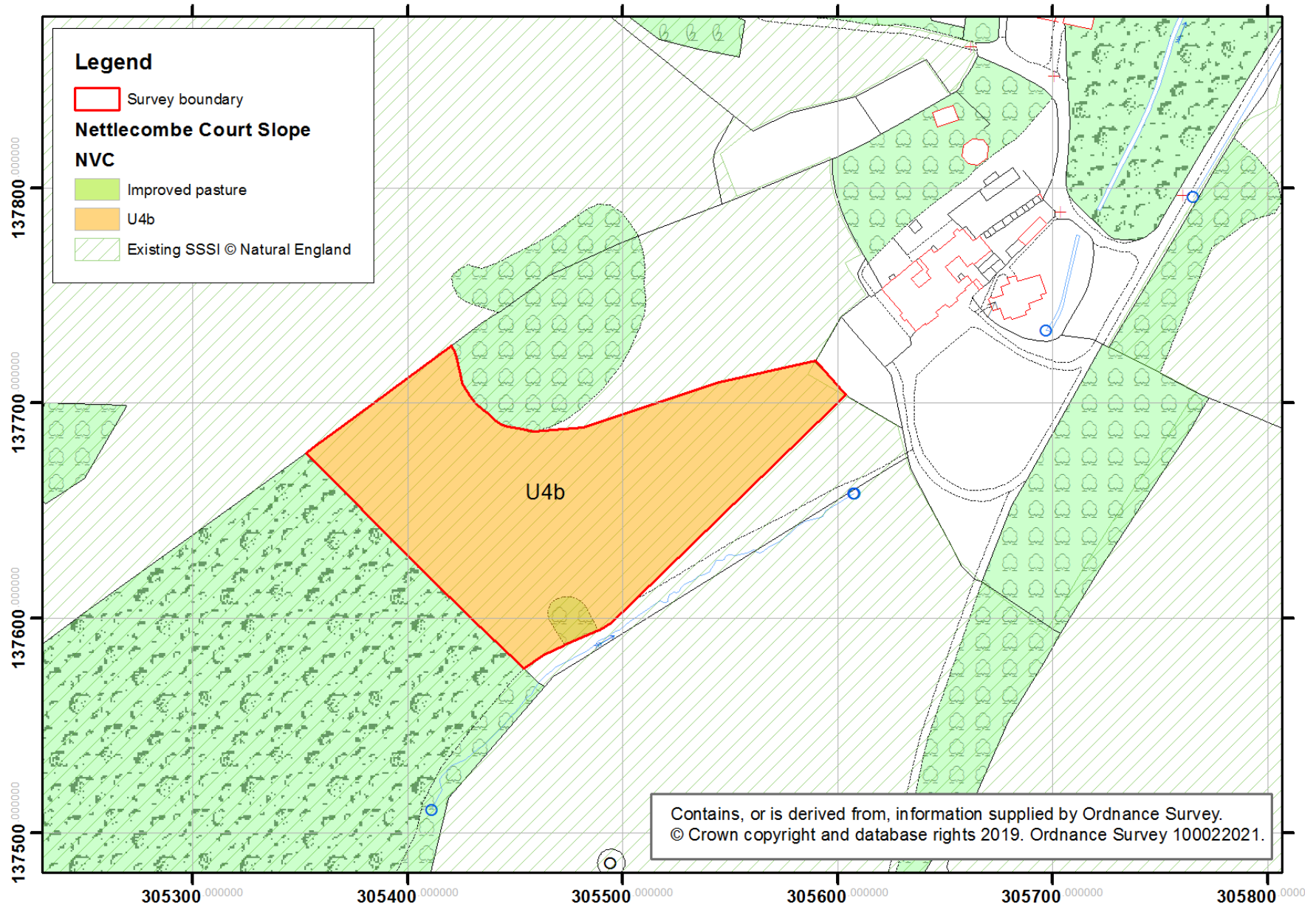
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Appendix 1

Old Weather Station Field NVC map



Nettlecombe Court Slope NVC map



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