Nettlecombe Park: Site Condition Assessment for Lichen Interests 2010

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Nettlecombe Park

Site of Special Scientific Interest

Site Condition Assessment for Lichen Interests

For Natural England

November & December 2010

Graham Boswell BSc BA

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INTRODUCTION

This report assesses the condition of the epyphitic lichen interest within the Nettlecombe Park Site of Speciial scientific Interest (SSSI). There are 3 important epyphitic lichen communities at Nettlecombe they are; the Lobarion alliance, the Lecanactidetum premnae assemblage and the Xanthorion parietinae community. The last assessment was undertaken by Pat Wolseley in 1996, that assessment indicated that the site was in good condition but also highlighted a number of potential threats. The main threats identified in this report come from shading and possible nitrogen inputs.

The outstanding lichen interest at Nettlecombe is mainly due to the relic status of the ancient oaks. Due to a lack of planting until 'recent' times there is now an age gap which is difficult to bridge; this combined with storm damage is a major concern to the long term lichen interests at the site.

The current lichen interests at the site are in favourable condition. There are two management issues requiring attention, one in compartment E concerns the degree of shading and a second issue concerns the increase in nitrophylous lichen species in compartment K.

AREA COVERED

The area covered is within Nettlecombe Park SSSI. The veteran trees are in compartments D E, G, H, J, K and M. Other ancient trees within these compartments were visited and a few trees outside of these compartments were observed to gauge their quality in terms of the three lichen communities. Younger trees were assessed within each compartment and while moving from tree to tree and from compartment to compartment. The trees' and compartments visited are located on map 1 and aerial photograph 1; these combined with photographs and site descriptions should enable the tree site to be located if the tree was felled.

METHOD

An initial 'desk top' survey was undertaken which included contacting individuals and organisations that might have literature or specimens pertaining to the site. The site file currently held by Natural England at the Taunton office was consulted, this file included the last survey undertaken by Pat Wolseley in 1996. Electronic maps for the site are held by Natural England; these and the latest report were made available for consultation and comparison. . Following field visits other material was available from Aptroot et al (2003) and from Neil Sanderson.

The field survey method involved finding the location of the 20 veteran trees surveyed in 1996 which are located in 7 compartments distributed throughout Nettlecombe Park. Each tree was photographed and its location verified; the physical condition of the tree was

assessed and noted. The lichen species were identified in-situ where possible, some specimens were taken away for identification and further verification. Lichens were recorded for the first 2m of the trunk on the light (mostly South side) and shaded (mostly North side); observations were made higher up the tree for macro-lichens. In-situ trigs and branches were also assessed where they were accessible, wind-blown twigs and branches were included where it was obvious that the specimen was derived from the tree being surveyed.

Some standing and laying dead and decaying bark and lignin was sampled; a thorough survey of such substrata would require more time than available during the current survey. A number of younger trees were surveyed for lichens with a view to establishing the potential for the ecological succession of lichens communities.

Observations were made on the physical condition and relative abundance of lichen species at each site. These observations were used to suggest inputs of pollutants, most noticeably for sulphur dioxide and nitrogen. The influence of grazing intensity and bark rubbing by stock was also noted.

Some fieldwork was undertaken with Pat Wolseley and further identification of difficult to identify specimens was undertaken with Dr Pat Wolseley and Neil Sanderson.

Some specimens were taken back to the laboratory for identification and verification. The identification was undertaken using GX binocular and compound microscopes. The standard range of chemicals was used for identification of appropriate specimens.

TIMING OF SITE VISITS

Site visits were made from Late November through to early January. The sporadic nature of these visits was due to poor weather conditions. Some days were very cold with snow and ice on tree branches, two afternoon sessions were cut short because of bad light and one session abandoned because of severe winds blowing debris from aloft.

NOMENCLATURE

Nomenclature follows Smith et al (2009) there are a number of changers from the checklist produced by Coppins (2002) and many changers from Purvis et al (1994) that was used for the last survey of this site in 1996.

ANALYSIS OF LICHEN INTEREST FEATURES

The specific Lichen designated features for the Nettlecombe Park SSSI are: the Lobarion alliance, the Lecanactidetum premneae assemblage and the Xanthorion parietinae community. For details of lichen assemblages and communities see James et al (1977).

The Lecanactidetum premneae assemblage is found on dry bark aspect of ancient Oaks and occasionally other tree species. It is an internationally important assemblage and probably requires 300 to 400 years to become established and is sensitive to the loss of ancient trees with a dry bark substrate Sanderson and Wolseley (2001). This community is well established at Nettlecombe and is in excellent condition on most Oaks. However the Oaks in compartment K show decline of this assemblage which could be due to high stocking density of sheep in *this compartment.*

The species that characterise the Lecanactidetum premnae assemblage are *Cresponea premnea, Arthonia pruinata* and *Schismatomma decolorans*, these species are present and in healthy condition on most trees but do not appear as abundant as in the 1996 survey. In healthy condition this assemblage includes rarer species such as *Opegrapha prosodea* and *Lecanactis lyncea*, while these species are still present they are not has abundant as in the 1996 survey.

The Lobarion alliance contains up to four species of Lobaria with rare or local species characteristic of ancient woodlands with long ecological continuity. This alliance is central to the conservation importance of many pasture woodlands, it occurs in well-lit conditions where humidity is high on mature to veteran trees with a relatively high bark pH. This alliance is sensitive to air pollution, nutrient enrichment and silvicultural practices that increase shade or exposure to drying conditions, Sanderson and Wolseley (2001)

The Lobarion alliance at Nettlecombe is sparse, occurring on four trees only. *Lobaria amplissima* in compartment D is in good condition and shows healthy new growth with scattered coralloid cephalodia present, see image VT4 & 5. Lobaria pulmonaria is in less good condition in compartment D and has been lost from VT4. The Lobaria amplissima in compartment K is in less good condition than in compartment D, this is consistent with the observations made on the stocking density above. The *Lobaria pulmonaria* on VT3 in compartment E shows little change from the 1996 survey and continues to hang on. Veteran Tree 3 is very close to the road, it is unusual for Lobaria to grow so close to a busy road outside of Scotland; there is a dense hedge of Holly between the road and the tree which should be retained as it will protect the lichen from the ingress of traffic pollution.

The Xanthorion parietinae community is dominated by species of Xanthoria, Physcia and related species. This community is frequent on a wide range of nutrient-enriched substrates and trees and is frequent on bark in open parkland conditions that are subject to animal excreta, dust or fertilizer. It is sensitive to overgrowth by algae due to intensive agriculture.

This community is well established at Nettlecombe and included two closely related associations; the Physcietum adscendentis and the Parmelietum carporrhizantis. The former is species rich and is found on sunlit trunks and includes *Anaptychia ciliaris*, a locally rare species that has had its conservation status up-graded since the last survey Woods & Coppins (2003). The Parmelietum carporrhizantis is a rarer association whose characteristic species is *Parmelina quercina* which was formerly found together with Anaptychia ciliaris on the trunk of VT xx but was not refound during the current survey. This species prefers exposed branches higher up on the tree which are not readily accessible except with ladders or by climbing. A closely related species Parmelina pastillifera is abundant on some trees at Nettlecombe.

FACTORS INFLUENCING THE HEALTH AND STATUS OF LICHEN COMMUNITIES AT NETTLECOMBE

ATMOSPHERIC POLLUTION

It is well know that lichens are sensitive to atmospheric pollution, SO2 pollution can destroy rich epiphytic lichen floras and nitrogen pollution from agriculture can cause the transformation of woodland communities associated with low PH bark to the Xanthorion and finally algal overgrowth Sanderson and Wolseley (2001) Changers in the species composition and relative abundance of epiphytic lichens at Nettlecombe indicate that there is no acidification from SO2. Indications of nitrogen pollution are more prevalent. Increases in the abundance of *Diploicia canescens, P*hyscia, adscendens, P. tenella and Melanelixia exasperatula indicate that nitrogen pollution is more of a problem Wolseley (1999). There is a general increase in D. canescens across the site, but increases in this species and Physcia species are especially noticeable in compartment K. While fertilizer drift may be causing a general increase across the whole site; an additional input in compartment K may be derived from stock. It is noted that intensive arable farming is prevalent east of compartment K.

GRAZING

It is well known that lichens are more sensitive to under grazing than from over grazing Sanderson and Wolseley (2001) and Sanderson pers. com. Grazing levels at Nettlecombe are appropriate in most compartments with two notable exceptions. Veteran trees 11, 12 & 13 in compartment E are under grazed and require the removal of shrubs casting shade on the tree trunk; such shading was reported in the previous survey but appears not to have been acted on. There is little or no grazing to the West of VT 7 in compartment D, some shrub clearance would be beneficial close to this tree. Any shrub clearance in this area (compartment D) must be done in such a way as not to affect the general level of humidity

in this compartment. The surviving Lobarion community in this compartment is partly dependent on high humidity.

TREE AGE STRUCTURE AND COMPOSITION

During the last twenty years there has been extensive planting of Oak and Ash at Nettlecombe, the absence of planting prior to this along with the continuing loss of trees over 200 years due to storm damage, has resulted in a huge age gap which is seen as a potential threat. This situation was clearly identified by Rose & Wolseley 1984 in the last report Wolseley (1996). The consequence of such an age gap would mean the loss of the Lecanactidetum premneae and the Lobarion communities and the associations in the Xanthorion community; therefore every effort must be made to secure the life of the existing veteran trees. It has been demonstrated that the stability of old trees can be increased by removing some top branches to stimulate root growth. It should be noted that the Lecanactidetum premneae community probably requires 300 to 400 years to become established Sanderson and Wolseley (2001).

Analysis of the lichens on the younger trees at Nettlecombe shows that they have none of the key species associated with the three communities at present. This said it might be worth considering the possibility of surveying the older trees around Nettlecombe for their lichen interests.

SITE DOSSIER

The project brief for this survey included the compilation of a site dossier of all lichen interests. All reports, surveys, species lists and comments found are 'bullet pointed' below. All epiphytic species found in these surveys are included in Table 13 and have been entered on a BLS mapping card. Lists and surveys that have not been published in the literature are presented as separate attachments. The dossier builds on and includes citations from the last assessment which was undertaken by Pat Wolseley in 1996, Natural England contract ref: F14/01/481.

- Andre Aptroot & L.B. Sparrius 2003. Species list attached
- Rose and Wolseley 1984. Nettlecombe Park Its History and Its Epiphytic Lichens: an attempt at correlation. Field Studies 6 pp117-148
- Nicholas Pearson Associates. Reports 1992 and 2002
- Neil Sanderson January 2008. Species list and notes attached
- BLS Bulletin No.102 Summer 2008 pp43/44 Pat Wolsey & Peter Lambley. In same volume 'New to British Isles section' pp26 Brian Coppins reports Pronectria oligospora.
- Graham Boswell short report in Exmoor Naturalist vol. 35

- Somerset Environmental Records Centre record of a survey undertaken by Peter James in 1992. This is a fungi list including some lichens
- British Lichen Society Data Archive

Organisations contacted or visited during the compilation of the site dossier:

1. The British Lichen Society
2. Somerset Environmental Records centre
3. Natural England
4. Exmoor National Park
5. Exmoor natural History Society
6. National Trust
7. Field Studies council
8. Nicholas Parson Associates

Since the last survey undertaken in 1996 there have been two important lichen events at Nettlecombe. The first was an International workshop on lichens in a changing pollution environment in February 2003. During this meeting Andre Aptroot, Linus Sparrius and Kok van Herk made an extensive species list identifying the substrate that each species was found on Aptroot et al (2003). Their list added several new species including the dry bark community of veteran tree species *Enterographa sorediata.* They surveyed the site over three days; they did not only consider epiphytic lichens but looked at all substrates. They confirmed Nettlecombe to be an important lichen site. In January 2008 the British Lichen Society held its 50th anniversary celebration event at Nettlecombe, 80 or so delegates included lichenologists of national and international standing. The species found and comments made about the condition of the lichens at Nettlecombe are collated and reported Wolseley & Lambley (2008) and a separate citing by Brian Coppins. A list made by Neil Sanderson at this meeting is attached to this report. I also reported an overview on the lichen interests of Nettlecombe from this meeting in the Exmoor Naturalist No. 35 Spring 2009.

Nicholas Pearson Associates have an on-going contract to monitor the landscape features within the park; they have produced two detailed reports one in 1992 and another in 2002. A very detailed paper encompassing the environmental development and the lichen interest was written in 1984 by Rose & Wolseley. The latter is the only published work that puts the lichen interests at Nettlecombe Park in an historic context, this paper should be the starting point for anyone interested in the epiphytic lichen flora at the site.

VETERAN TREE SURVEY

During the 1996 survey 20 veteran trees in seven compartments were identified with significant lichen interest, these trees were numbered and surveyed; the lichen species and lichen communities were identified and commented on. The current survey located these trees and re-evaluated them for the quality of the lichen communities. Of the 20 trees located in the 1996 survey one has since blown down Oak Quercus petraea VT9; in addition VT2 has undergone severe storm damage and all that remains is a 5m high stump in an advanced state of decay.

The seven landscape compartments containing 20 veteran trees are located on the site map and on the aerial photograph. Comment about the general ecological condition of each compartment and any specific site management recommendations are included with the comment for each tree. In addition there is a summary of each compartment at the end of this section.

Veteran Tree One (VT1)

VT1 is in good condition, there are low growing branches to the N.W, S.W. and N.E. which is casting some shade on the tree bole, see photo. There is evidence of sheep rubbing on the lower branches and the tree bowl.

Image showing location of VT1 centre left and the storm damaged VT2 on the right

On the South side of the bowl *Cresponea premnea* is extensive as is *Schismatomma decolorans.* The North side is similar but with less *Diploicia canescens* and much more *Arthonia pruinata.* The branches have a good Parmelion community.

Species Table 1 VT1	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Arthonia pruinata					✓				
Arthonia radiata									✓
Arthonia spadicea							✓	✓	
Cliostomum griffithii				✓					
Cresponea premnea				2	2		✓	✓	
Cyrtidula quercus						✓			
Diploicia canescens				5			✓	✓	
Evernia prunastri						2			
Flavoparmelia caperata				1		✓			✓
Fuscidea lightfootii						✓			
Hypogymnia physodes						2			
Hypogymnia tubulosa				✓		✓			
Lecanora chlarotera									✓
Lepraria incana					✓		✓	✓	
Melanohalea elegantula						✓			
Melanohalea exasperatula						✓			
Melanelixia glabratula				✓					
Melanohalea laciniatula						3			✓

Parmelina pastillifera						✓			
Parmelia saxatilis				✓		✓			
Pertusaria albescens				✓					
Pertusariae hymenea				1					
Pertusaria multipuncta						✓			
Pertusaria hemisphaerica				✓					
Physcia aipolia									✓
Physcia tenella									✓
Punctelia subrudecta				✓		3			✓
Ramalina farinacea						✓			
Schismatomma cretaceum							✓cf	✓	
Schismatomma decolorans					2				
Schismatomma vivarium							✓		
Usnea subfloridana						1			✓
Xanthoria parietina									
Xanthoria polycarpa									✓

Veteran Tree Two (VT2)

VT2 suffered considerable storm damage, the top of the tree has gone and there is no photosynthetic capacity, see photo. The 5m high stump is in a state if decay with extensive fungal growth and is shedding most of its bark on the south side. The bark on the North side is in reasonable condition but sounds hollow when tapped. *Cresponea premnea* and *Schismatomma decolorans* are still present on the north side. The *Ramalina canariensis* found in 1996 is not present.

Image of the storm damaged VT2 showing shedding of the bark

Species *Table 2 VT2*	*1982*			*1996*			*2010*		
	South/ Sunny Side	**North/ Dark Side**	**Trigs And Branches**	**South/ Sunny Side**	**North/ Dark Side**	**Trigs And Branches**	**South/ Sunny Side**	**North/ Dark Side**	**Trigs And Branches**
Arthopyrenia lapponina						✓			
Cliostomum griffithii					✓				
Cresponea premnea					1			✓	
Cyrtidula quercus									
Diploicia canescens				✓	2		✓	✓	
Evernia prunastri				✓					
Flavoparmelia caperata				1			✓		
Lecanora expallens				✓					
Lecanora chlarotera				✓					
Melanelixia glabratula				✓		✓			
Melanohalea laciniatula									
Ochrolechia subviridis				✓					
Parmelia saxatilis				2					
Parmelia sulcata				2			✓		
Pertusaria albescens				✓					
Pertusaria albescens var corallina				✓					
Pertusaria hymenea				✓					
Physcia tenella						✓			
Punctelia subrudecta				1					
Pyrrhospora quernea							✓		
Ramalina canariensis				1	1				
Ramalina farinacea				3					
Schismatomma decolorans					4			✓	
Schismatomma niveum								✓cf	
Xanthoria polycarpa						✓			

Veteran Tree Three (VT3)

VT3 is in good condition. There is one large patch of Lobaria pulmonaria on the South side and a small patch 3cmX3cm on the western margin of the moss. *Cresponea premnea* and *Schismatomma decolorans* are extensive and in good condition. The *Lobarion pulmonaria* and Lecanactidetum premnae communities are represented on this tree. The branches have a good coverage of Parmelion.

Image showing location of VT3from the North and bottom insert Lobaria pulmonaria on the same tree

Image showing location of VT3 from the South West, insert shows Cresponea premnea

Species Table 3 VT3	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Catillaria atropurpurea				✓					
Chrysothrix candelaris					✓			✓	
Cladonia coniocraea							✓		
Cliostomum griffithii					✓		✓		
Cresponea premnea					2		✓	✓	
Evernia prunastri				✓					
Flavoparmelia caperata				✓					✓
Lecanora expallens					✓				
Lecanora chlarotera					✓				
Lepraria incana					✓			✓	
Lobaria pulmonaria				✓			✓		
Melanelixia exasperatula									✓
Parmelia sulcata									✓
Pertusaria albescens				2			✓		
Pertusaria albescens var corallina				✓					
Pertusaria hymenea				✓			✓		
Pertusaria multipuncta				1					
Pertusaria pertusa				✓					
Punctelia subrudecta				✓					✓
Pyrrhospora quernea				✓					
Ramalina farinacea				✓					✓
Ramalina fastigiata									✓
Schismatomma decolorans					✓			✓	
Usnea subfloridana									✓

Veteran Tree Four (VT4)

Veteran tree 4 is in good condition. It is in small woodland with an adjoining small field, any pressure from grazing stock did not appear unduly intense. *Lobaria amplissima* is present, forming a patch about .5 m2 with another small patch 20cm above it; there is a larger patch of *L amplissima* higher up the tree, a more thorough inspection of this community would require rope or ladder access. The whole specimen at ground level is beginning to look rather old with some cracking; one or two lobs are however in good condition. *L. pulmonaria* was not found on this tree, its loss is unfortunate as this species is now

Image showing VT4 from the South East

Image below showing VT4 insert is Lobaria amplissima and arrow showing its location

Species Table 4 VT4	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Agonimia tristicula							✓		
Arthonia pruinata					✓				
Cresponea premnea	1			1	2		✓		
Diploicia canescens	2			✓			✓		
Enterographa crassa	1			1			✓		
Flavoparmelia caperata	✓								
Lecanactis abietina					1				
Lecanactis subabietina					✓		✓		
Lecanora albella						✓			✓
Lecanora chlarotera	✓					✓	✓		✓
Lepraria incana									
Lobaria amplissima	3			3			✓		
Lobaria pulmonaria	2			1					
Melanohalea exasperatula						✓			✓
Melanelixia glabratula	1						✓		
Ochrolechia subviridis	1						✓		
Ochrolechia turneri	✓								
Opegrapha prosodea					✓				
Parmelia sulcata	2					✓	✓		✓
Parmelina quercina						✓			
Japewia subaurifera						✓			✓
Punctelia subrudecta						✓			✓
Pertusaria albescens	1								
Pertusaria albescens var corallina	1								

Species *Table 4 VT4*	**1982**			**1996**			**2010**		
	South/ Sunny Side	**North/ Dark Side**	**Trigs And Branches**	**South/ Sunny Side**	**North/ Dark Side**	**Trigs And Branches**	**South/ Sunny Side**	**North/ Dark Side**	**Trigs And Branches**
Pertusaria coronata							✓		
Pertusaria hymenea	✓						✓		
Pertusaria multipuncta						✓			✓
Porina hibernica							✓**cf**		
Physcia aipolia						✓			
Physcia tenella						✓			✓
Punctelia subrudecta						✓			✓
Ramalina canariensis	✓								✓
Ramalina farinacea	2			✓			✓		
Ramalina fastigiata									
Rinodina roboris	1			1			✓		
Schismatomma decolorans	1				4				
Xanthoria polycarpa						✓			✓

Veteran Tree Five (VT5)

This tree is in good condition as is the Lichen flora. There is one large patch of Lobaria amplissima on the S.W. side close to ground level with smaller sporadic patches of thalli on the lower right buttress, there is some healthy new growth of this species. *Lobaria pulmonaria* is confined to one small patch 10cm X 5cm 1.5 m above ground level and below some epicormic shoots on the Oak. There is a small specimen of *Thelotrema lepadinum* at the top left of the *L amplissima* specimen. The grazing regime in this area appears ideal to maintain the healthy *Lobarion pulmonariea* community.

Image of VT 5, left inset showing cephalodia on healthy Lobaria amplissima right insert showing L pulmonaria in poor condition.

Image showing location and condition of VT5 note clean trunk due to appropriate grazing.

Species Table 5 VT5	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Arthonia pruinata					✓				
Arthonia radiata						✓			
Arthonia spadicea								✓	
Arthopyrenia analepta						✓			
Arthopyrenia punctiformis									✓
Chrysothrix candelaris					✓	✓		✓	
Cliostomum griffithii								✓	
Cresponea premnea				✓	✓		✓	✓	
Cyrtidula quercus						✓			✓
Dimerella lutea				1			✓		
Enterographa crassa					✓			✓	
Evernia prunastri						✓			
Fuscidea lightfootii									✓
Hypocenomyce scalaris							✓		
Hypogymnia tubulosa						✓			

Lecanora chlarotera				✓		✓	✓		✓
Lecanora confusa						✓			✓
Lecidella elaeochroma									✓
Lepraria incana				✓				✓	
Lobaria amplissima				3			✓		
Lobaria pulmonaria				✓			✓		
Melanelixia exasperatula						✓			
Melanelixia glabratula						✓			✓
Normandina pulchella				✓					

Species Table 5 VT5	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Parmelia sulcata						✓			✓
Parmelina quercina									
Japewia subaurifera						✓			
Parmotrema perlatum									✓
Pertusaria albescens				2			✓		
Pertusaria albescens var corallina									
Pertusaria hymenea				✓	✓		✓	✓	
Pertusaria pertusa									✓
Porina coralloidea				✓					
Physcia aipolia									✓
Physcia tenella						✓			✓
Punctelia subrudecta				✓		✓			✓
Pyrrhospora quernea				✓					
Ramalina farinacea						✓			✓
Ramalina fastigiata									✓

Rinodina sophodes						✓			
Schismatomma cretaceum					✓**cf**				
Schismatomma decolorans					✓			✓	
Thelotrema lepadinum				1			✓		
Usnea subfloridana						✓			✓
Xanthoria parietina							✓		✓

Veteran Tree Six (VT6)

This tree is shown in the wrong location on the map; the actual location is 30m north of that shown on the 1996 map. Veteran tree 6 Ash Fraxinus excelsior is in good condition. There is a good Parmelietum community on this tree with the potential for it to develop in to a Lobarion community. There are other Ash trees close by (along the fence line and on the western slope of the pond bank) which have developing Parmelietum communities. Grazing in this area is ideal for the maintenance of this lichen community in the 'in-field' side of the fence.

Image showing location of VT6, insert shows rich lichen coverage of the bark

Species Table 6 VT6	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Cliostomum griffithii				✓			✓	✓	
Evernia prunastri				✓			✓		
Flavoparmelia caperata				1			✓	✓	
Lecanora expallens								✓	
Lecidella elaeochroma				✓			✓		✓
Melanelixia glabratula				1			✓		✓
Ochrolechia subviridis				✓					
Parmelina pastillifera				**1**			✓		✓
Parmelia saxatilis				✓			✓		
Parmelia sulcata				1			✓		✓
Pertusaria albescens				2			✓		✓
Pertusaria albescens var corallina				✓			✓		✓
Pertusaria hymenea				1			✓		✓
Pertusaria multipuncta									
Pertusaria pertusa				✓			✓		

Phlyctis argena				1			✓		✓
Physcia adscendens				✓			✓		✓
Punctelia subrudecta				2			✓		✓
Pyrrhospora quernea				✓			✓		
Ramalina farinacea				✓			✓		✓
Ramalina fastigiata				✓			✓		✓
Xanthoria parietina				✓			✓		✓

Veteran Tree Seven (VT7)

Veteran tree 7 is in good condition. There is a lot of dust and dirt damage close to ground level resulting from the replacement and repair of the fence. On the north side of the tree there is a long ridge of bark populated by *Thelotrema lepadinum* and Cresponea premnea. The above two species are also found on the South (pond) side of the tree along with *Schismatomma decolorans, Arthonia spadicea, Opegrapha prosodea* and cf *O. vermicellifera*. *Lecanactidetum premnea* community is present on this tree. The tree is heavily shaded and would benefit from some thinning of the surrounding shrub layer on its West side.

Image showing location o fVT7 note intense shade to the West

Species Table 7 VT7	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Agonimia tristicula									
Arthonia pruinata					✓				
Arthonia spadicea								✓	
Cliostomum griffithii									
Cresponea premnea				2			✓	✓	
Lecanographa lyncea								✓	
Lepraria incana					✓				
Ochrolechia turneri									
Opegrapha prosodea				✓			✓**cf**		
Opegrapha vermicellifera				✓					
Pertusaria hymenea							✓	✓	
Schismatomma decolorans					✓			✓	
Schismatomma niveum									

Veteran Tree 8 (VT8)

Quercus petraea in good condition. Some fence wire is embedded in the bark of the tree. There is strong evidence of sheep rubbing and erosion. *Diploicia canescens* is now surrounding the whole bowl of the tree. There is one large patch of *Lobaria amplissima* (20cm X 10cm) and a few much smaller patches either side and below the main specimen. The *L. amplissima* is partially protected from physical rubbing by stock by its proximity to the fence; this species is clearly 'hanging on' at this site but is still in decline as reported in the last survey. The decline is possibly due to completion from *Diploicia canescens* whose increase is likely to be due to nitrogen input.

Image showing location of VT8

Image of VT8 from the South West, arrow and right insert shows location of Lobaria amplissima, left insert shows detail of the specimen

Species Table 8 VT8	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Amandinea punctata				✓					
Cresponea premnea					✓			✓	
Diploicia canescens	✓			3	2		3	3	
Lobaria amplissima	3			✓			✓		
Ochrolechia subviridis				✓	✓				
Parmelia sulcata	✓								
Punctelia subrudecta	2			✓			✓**poor**		
Parmotrema perlatum	✓								
Pertusaria albescens				✓					
Pertusaria hymenea	✓								
Physconia grisea	✓								
Physcia adscendens				1			✓		
Pyrrhospora quernea				✓					
Ramalina canariensis							✓**poor**		
Ramalina farinacea	1			✓			✓		

Rinodina roboris				✓					

Veteran tree Nine (VT9)

VT9 Q. petraea is in good condition. Like many other trees in area K there is a lot of algal growth covering the lichens which indicates the addition of nitrogen. On the day of the survey sheep stocking density was high in this location, 170 + or – sheep grazing in this field. Species richness remains healthy on this tree.

Image showing location of VT9, insert showing lichen and moss coverage of the trunk

Species Table 9 VT9	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Amandinea punctata				✓					
Arthonia pruinata		1		✓		✓	✓	✓	
Bacidia biatorina					✓				
Calicium glaucellum				✓					
Cresponea premnea						✓		✓	
Diploicia canescens				2			✓	✓	
Flavoparmelia caperata				✓			✓		✓
Hyperphyscia adglutinata				✓					
Lecanora chlarotera				✓			✓		✓
Melanelixia glabratula				✓			✓		✓
Ochrolechia subviridis				✓					
Opegrapha ochrocheila				✓					
Parmelia saxatilis				✓			✓		
Parmelia sulcata				✓			✓		✓
Punctelia subrudecta				✓					
Parmotrema perlatum				✓					

Pertusaria albescens				2			✓		
Pertusaria amara				✓			✓		
Pertusaria hymenea				✓			✓		
Pertusaria pertusa				✓					
Physconia grisea				✓					
Physcia adscendens				✓			✓		✓
Punctelia reddenda				✓			✓		
Pyrrhospora quernea				2			✓		
Ramalina canariensis							✓		
Ramalina farinacea				1			✓		✓
Ramalina fraxinea				✓					
Rinodina roboris				✓					

Veteran tree Ten (VT10)

Oak Quercus petraea in good condition. Some rare species not found from previous survey in spite of three visits to this site. This remains one of the most species rich trees at Nettlecombe. The Lecanactidetum premnae community is present as is the Physcietum ascendentis association, the Parmelietum carporrhizantis association is however in decline. Management recommendations from previous survey apply: namely take care not to cut/trim branches back to the tree trunk resulting in any alteration to the hydrology of the trunk.

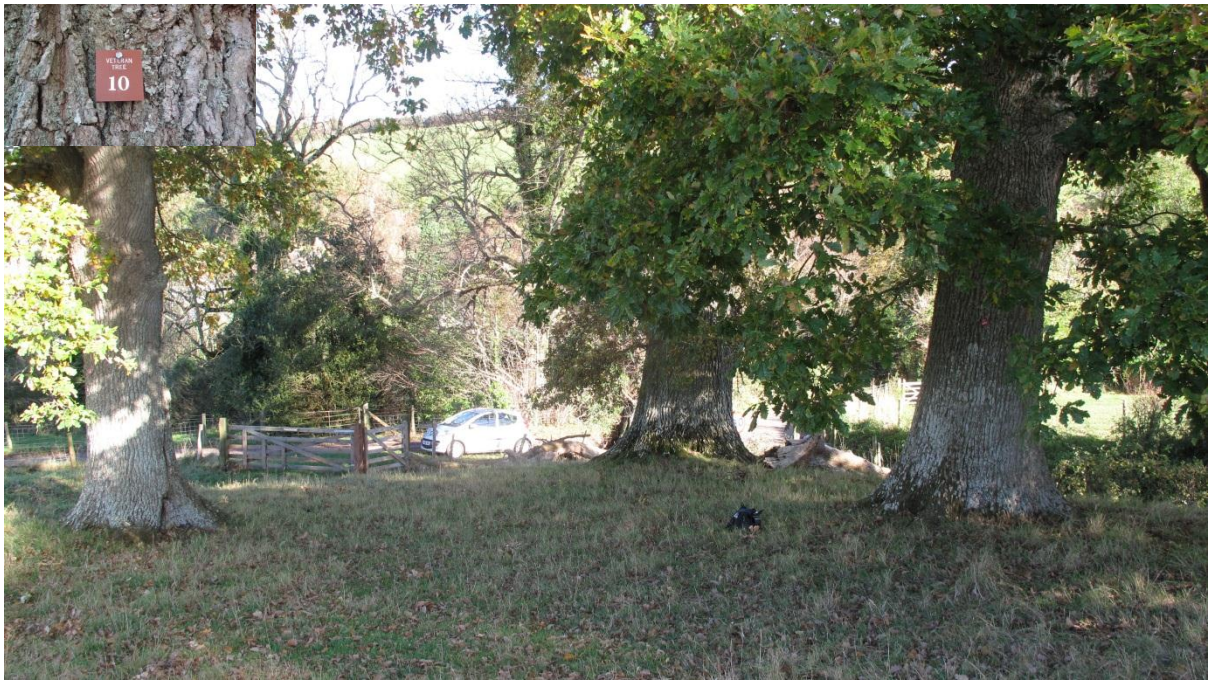

Image showing location of VT10

Species Table 10 VT10	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Anaptychia ciliaris	**2**			**1**			✓		
Arthonia pruinata	✓			✓					
Bacidia biatorina					✓				
Calicium viride	**1**								
Candelariella xanthostigma	✓	✓		✓	✓				
Chrysothrix candelaris		✓			✓				
Cliostomum griffithii	✓			✓					
Cresponea premnea	✓			✓	✓		✓		
Lecanora expallens	✓			✓					
Lecanora dispersa	✓								
Lecanora chlarotera				✓			✓		✓
Lecidella elaeochroma									
Lepraria incana		**3**			✓				
Megalaria pulverea	✓			✓					
Melanohalea elegantula									
Melanelixia exasperatula							✓		✓
Melanelixia glabratula	1			✓					✓
Normandina pulchella	✓								
Ochrolechia subviridis	1			✓					
Parmelia sulcata	1			✓					✓
Parmelina quercina	2			✓					
Japewia subaurifera	✓								
Punctelia subrudecta	1			✓					
Pertusaria amara		**1**			✓				
Pertusaria hemisphaerica							✓**cf**		

Species Table 10 VT10	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Physconia enteroxantha	✓			✓			✓		
Physconia grisea	✓			✓					
Physconia perisidiosa	✓			✓			✓		
Physcia adscendens				✓					
Physcia aipolia	2			✓					✓
Physcia tenella	✓								✓
Pyrrhospora quernea		**1**			✓				
Ramalina canariensis	2			2					
Ramalina farinacea	2			2			✓		
Ramalina fastigiata	✓			✓					✓
Rinodina roboris	✓	**2**		✓			✓		
Schismatomma decolorans	✓	**4**			✓		✓		
Schismatomma niveum									
Usnea subfloridana									✓
Xanthoria parietina	✓			✓					✓

Veteran Tree Eleven (VT11)

Oak, Q. petraea, this tree blew down a number of years ago; it is in state of decay, most of the bark as gone there is now a heavy covering of moss over the surface. There is currently little lichen interest on the tree but the lignin may prove a viable substrate for lichens and other groups in the future. There are a number of other trees in compartment E with a similar lichen assemblage to that found in the 1996 survey. VT 245 is close by and has also blown down. VT 243 could be substituted for the purpose of continued monitoring, becoming VT11a; this tree has a good population of *Parmotrema crinitum* which is the only site where this species was found during the current survey; but was found on VT 11 during the 1996 survey. VT 243 is in a section of compartment E with a much more appropriate grazing regime than that of the fallen VT 11.

Image of VT 243 a potential replacement for VT11 blown down and in a state of decay. The insert image is of *Parmotrema crinitum* the only specimen found during the current survey and lost from the blown down VT 11.

Species Table 11 VT11 (Tree fell post 1996)	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Arthonia pruinata					✓				
Cliostomum griffithii				✓					
Cresponea premnea				2	1				
Cyrtidula quercus									
Dimerella lutea				✓					
Enterographa crassa					1				
Flavoparmelia caperata				✓					
Lecanora expallens				✓					
Lecanora chlarotera				✓					
Ochrolechia subviridis				✓					
Parmelia sulcata				✓					
Pertusaria hemisphaerica				✓					
Punctelia reddenda				✓					
Pyrrhospora quernea				✓					
Schismatomma decolorans					1				

Veteran Tree Twelve (VT 12)

This tree is an Oak, Quercus petraea on the ungrazed (North East) side of fence line on the East slope of Area E. The tree is in good condition, Elder is casting a lot of shade on the South West side of the tree and requires removal. Beyond the canopy of the tree the dominant vegetation is Bracken. The Lecanactidetum premnaea community is in decline due to shading and some nutrient enrichment.

Image showing the location of VT12 from the South

Image of VT12 on the fence line, showing growth of Elder and considerable moss cover.

Species Veteran Tree 12 VT12	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Arthonia pruinata					1		✓		
Cresponea premnea				1	3		✓		
Diploicia canescens					1				
Enterographa crassa							✓		
Flavoparmelia caperata				1			✓		
Lepraria lobificans					✓		✓		
Opegrapha varia							✓		
Parmotrema perlatum				✓					
Pertusaria albescens				✓					
Pertusaria hymenea				✓			✓		
Pertusaria pertusa				✓					
Punctelia reddenda				2			✓		
Punctelia subrudecta									
Pyrrhospora quernea					✓		✓		
Schismatomma decolorans					1		✓		

Veteran Tree Thirteen (VT13)

Oak, Quercus petraea 8m from fence line and down slope from VT12. The tree is in good condition. Lower branches casting considerable shade on the trunk. As with VT12 the Lecanactidetum premnaea community is in declining condition due to shade. The recommendation is remove the shade casting shrub layer.

Image showing the position of VT13

Species Veteran Tree 13 VT13	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Cresponea premnea				✓			✓		
Enterographa crassa					✓		✓		
Lecanographa lyncea				✓					
Normandina pulchella							✓		
Opegrapha prosodea				✓			✓		
Pertusaria hymenea				✓			✓		
Schismatomma decolorans					✓		✓		

Veteran Tree Fourteen (VT14)

Oak, Quercus petraea is in compartment K; the tree is in good condition and is located 50m west of the road and 50 East of the footpath. The Xanthorion community is becoming dominated by *Xanthoria parietina* and other nitrophylus species: Physcia species and *Diploicia canescens. Anaptychia ciliaris* reported in the 1996 survey is present but in declining condition. Parmelina quercina was not found during the current survey. We recommend that nitrogen input to this compartment is reduced.

Image showing the location of VT14 in centre left of image.

Image of VT14 showing extensive spread of Diploicia canescens

Species Veteran Tree 14 VT14	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Amandinea punctata				✓			✓		
Anaptychia ciliaris				3			✓ V. poor		
Cliostomum griffithii								✓	
Cresponea premnea							✓		
Diploicia canescens				✓	✓		✓ Lots	✓	
Flavoparmelia caperata				✓					
Lecanora expallens				✓			✓		
Lepraria incana								✓	
Melanelixia glabratula				✓			✓		
Ochrolechia subviridis				✓					
Opegrapha varia							✓cf		
Parmelina pastillifera				✓					
Parmelia sulcata				1			✓		
Parmelina quercina				1					
Punctelia subrudecta				✓					

Pertusaria albescens				✓			✓		
Pertusaria amara				2					
Pertusaria hymenea				✓			✓		
Pertusaria pertusa				✓			✓		
Physconia grisea				✓					
Physcia adscendens				✓			✓		
Physcia aipolia				✓			✓		
Physcia tenella				✓			✓		
Pyrrhospora quernea					✓		✓		
Ramalina canariensis				2	✓			✓	

Species Veteran Tree 14 VT14	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Ramalina farinacea				2	✓				
Ramalina fastigiata				✓					
Schismatomma decolorans					✓			✓	
Xanthoria parietina				✓			✓		

Veteran Tree Fifteen (VT15)

Turkey Oak, Quercus cerris, the tree is in good condition. This tree supports a diverse lichen flora including Xanthorion, Parmelietum and Lecanactidetum communities. Other indicator species found on this tree are *Agonimia tristicula* and Cresponea premnea.

Mage showing location of VT15

Species Veteran Tree Fifteen VT 15	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Acrocordia gemmata				✓			✓		
Agonimia tristicula				✓			✓		
Caloplaca obscurella							✓		
Caloplaca ulcerosa							✓		
Cliostomum griffithii				✓					
Cresponea premnea				2			✓		
Diploicia canescens				2			✓		
Gyalecta truncigena				✓					
Hyperphyscia adglutinata				✓					
Lecanora expallens				✓					
Lecanora chlarotera				✓			✓		
Lecidella elaeochroma							✓		
Lepraria incana							✓		
Melanelixia glabratula				✓					
Melanelia laciniatula									
Normandina pulchella				✓					
Ochrolechia subviridis									
Ochrolechia turneri				✓					
Opegrapha prosodea									
Opegrapha varia				✓			✓		
Punctelia subaurifera									
Parmelia subrudecta				✓					
Pertusaria albescens				✓			✓		
Pertusaria albescens var corallina				✓					
Pertusaria flavida				✓			✓		

Species Veteran Tree Fifteen VT 15	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Pertusaria hymenea				✓			✓		
Physconia grisea				✓					
Physcia tenella				✓					
Pyrrhospora quernea				✓					
Ramalina canariensis				✓					
Ramalina farinacea				✓					
Rinodina roboris				✓			✓		
Schismatomma decolorans				2			✓		
Xanthoria parietina				✓					

Veteran Tree Sixteen (VT16)

Oak, Quercus petraea in good condition. The tree supports Lecanactidium premnaea and Xanthorion communities; other indicator species present are *Rinodina roboris*. The number plate on this tree is bracken and is in need of replacement, the screw holding part of the number tag is still in place.

Image of VT16 top insert shows Brocken tag bottom insert shows Lecanactidetum

community.

Species Veteran Tree Sixteen VT16	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Amandinea punctata				✓			✓		
Anaptychia ciliaris									
Arthonia pruinata					✓			✓	
Cladonia chlorophaea				✓					
Cliostomum griffithii					✓			✓	
Cresponea premnea					2			✓	
Diploicia canescens				2	1		✓	✓	
Flavoparmelia caperata				✓			✓		
Hypotrachyna revoluta				✓					
Lecanora chlarotera				✓			✓		
Melanelixia subaurifera							✓		
Ochrolechia turneri				✓					
Parmelina pastillifera				✓			✓		
Parmelia saxatilis				✓			✓		
Japewia subaurifera				✓					
Punctelia subrudecta									
Parmotrema perlatum				✓					
Pertusaria albescens				✓			✓		
Pertusaria flavida				✓					
Pertusaria hymenea				✓			✓		
Pertusaria multipuncta							✓		
Pertusaria pertusa							✓		
Physconia grisea				✓					
Physcia tenella				✓					
Punctelia reddenda				✓			✓		

Species Veteran Tree Sixteen VT16	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Ramalina canariensis				✓			✓		
Ramalina farinacea				✓			✓		
Rinodina roboris				✓				✓	
Schismatomma decolorans					✓			✓	

Veteran Tree Seventeen (VT 17)

Sycamore, Acer pseudoplatanus, a healthy tree with a good Xanthorion community on the trunk, twigs and branches. This tree is one of the most species rich of the veteran trees.

Image showing VT17 left insert showing Parmelina pastillifera

Species Veteran Tree Seventeen VT17	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Amandinea punctata				✓		✓			
Arthonia pruinata					4				
Arthopyrenia punctiformis									✓
Cliostomum griffithii				✓	✓				
Cresponea premnea					✓				
Diploicia canescens				1	2		✓		
Evernia prunastri						✓			
Hypogymnia physodes						✓			✓
Hypogymnia tubulosa						✓			
Lecanora expallens									✓
Lecanora conizaeoides				✓					
Lecanora chlarotera				✓					✓
Lecanora confusa						✓			
Lecanora polytropa						✓			
Lecanora symmicta						✓			
Lepraria incana							✓		
Melanohalea exasperata									✓
Melanohalea exasperatula					✓				
Melanelixia glabratula				✓			✓		
Melanohalea laciniatula					✓				
Opegrapha varia							✓		
Parmelina pastillifera				3			✓		
Parmelia saxatilis									✓
Parmelia sulcata						2			✓
Pertusaria albescens					✓		✓		

Species Veteran Tree Seventeen VT17	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Pertusaria hymenea				1			✓		
Pertusaria multipuncta				✓					
Physcia adscendens									
Physcia aipolia						✓			✓
Physcia tenella						✓	✓		✓
Punctelia subrudecta				1		1			✓
Pyrrhospora quernea							✓		
Ramalina farinacea				✓		✓	✓		✓
Ramalina fastigiata						✓			✓
Schismatomma decolorans				✓					
Scoliciosporum umbrinum						✓			
Usnea subfloridana						✓			✓
Xanthoria parietina						✓	✓		✓
Xanthoria polycarpa						✓			

Veteran Tree Eighteen (TV18)

Oak, Quercus petraea in good condition, located in the dip on the fence line, Lecanactidetum premnea community present. The other indicator species present is Rinodina roboris.

Image showing location of VT18

Image showing the trunk of VT18

Species Veteran Tree 18 VT18	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Amandinea punctata				✓			✓		
Anaptychia ciliaris									
Arthonia pruinata					✓			✓	
Cliostomum griffithii				✓					
Cresponea premnea					✓			✓	
Diploicia canescens				✓			✓		
Enterographa crassa					✓				
Evernia prunastri				✓					
Flavoparmelia caperata				✓			✓		
Lecanactis abietina					✓			✓	
Lecanora chlarotera							✓		
Lepraria incana					✓			✓	
Melanelixia glabratula							✓		
Ochrolechia subviridis				✓					
Parmelia sulcata				✓					
Parmotrema perlatum				✓			✓		
Pertusaria albescens				✓	✓		✓		
Pertusaria albescens var corallina				✓					
Pertusaria hymenea				✓			✓		
Pertusaria pertusa				✓			✓		
Punctelia subrudecta				✓			✓		
Pyrrhospora quernea				✓	✓		✓		
Ramalina canariensis									
Ramalina farinacea				✓					
Ramalina fastigiata									

Species Veteran Tree 18 VT18	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Ramalina fraxinea									
Rinodina roboris				1			✓		
Rinodina sophodes									
Schismatomma cretaceum									
Schismatomma decolorans					✓			✓	

Veteran Tree Nineteen (VT19)

Oak, Quercus petraea in compartment J. The tree is in good condition. There is a reduction in the number of indicator species and in species richness since the last survey. The indicator species present are Cresponea premnea and Lecanographa lyncea.

Image showing location of VT19

Image of VT19showing lichen cover on trunk

Species Veteran Tree Nineteen VT19	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Chrysothrix candelaris				✓					
Cladonia chlorophaea							✓		
Cliostomum griffithii				✓			✓		
Cresponea premnea				1			✓		
Entegrapha crassa				✓					
Evernia prunastri				1					
Flavoparmelia caperata				3			✓		
Lecanographa lyncea				✓					
Lecanora expallens				✓			✓		
Lecanora chlarotera				✓					
Lepraria incana							✓		
Melanelixia glabratula							✓		
Normandina pulchella				✓					
Ochrolechia subviridis				1					
Pachyphiale carneola				✓					
Parmotrema perlatum				✓			✓		
Pertusaria albescens				✓			✓		
Pertusaria hymenea				1			✓		
Pertusaria pertusa							✓		
Punctelia subrudecta				✓			✓		
Pyrrhospora quernea				✓			✓		
Ramalina farinacea				✓					
Ramalina fastigiata				✓					
Rinodina roboris				✓					
Schismatomma decolorans				✓			✓		

Veteran Tree 20 (VT20)

Ash, Fraxinus excelsior, in good condition with one very large branch missing from many years ago. The tree now appears more interesting aloft and would require ladder and ropes for a more thorough survey. There is now extensive moss cover on the NE side of the trunk. Veteran tree 296 to the SW of VT20 is now better in terms of species richness; the Xanthorion community of the branches of this tree is especially good.

Image showing location of VT20

Image showing extensive moss cover of VT20

Species Veteran tree twenty VT20	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Amandinea punctata				2					
Arthonia pruinata							✓		
Bacidia biatorina									
Bacidia rubella				1					
Chrysothrix candelaris				✓				✓	
Cladonia chlorophaea							✓		
Cliostomum griffithii				✓					
Dimerella lutea							✓		
Diploicia canescens				✓			✓		
Evernia prunastri				✓		✓			
Flavoparmelia caperata				✓		✓	✓	✓	
Fuscidea lightfootii						✓			
Hypogymnia physodes						✓			
Hypogymnia tubulosa				✓		3			
Lecanora expallens				✓					
Lecanora conizaeoides						✓			
Lecanora chlarotera							✓		
Lepraria incana								✓	
Ochrolechia subviridis				✓					
Opegrapha varia				✓			✓		
Parmelia saxatilis				2		1			
Parmelia sulcata				2				✓	
Parmotrema perlatum									
Pertusaria albescens				✓			✓	✓	
Pertusaria albescens var corallina				✓					

Species Veteran tree twenty VT20	1982			1996			2010		
	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches	South/ Sunny Side	North/ Dark Side	Trigs And Branches
Pertusaria amara				✓					
Pertusaria hymenea				✓			✓		
Pertusaria multipuncta									
Pertusaria pertusa							✓		
Pertusaria hemisphaerica				✓					
Phlyctis argena				✓					
Platismatia glauca						✓			
Punctelia reddenda									
Punctelia subrudecta				✓		✓			
Pyrrhospora quernea								✓	
Ramalina canariensis				✓					
Ramalina farinacea				✓				✓	
Ramalina fastigiata				✓					
Schismatomma decolorans				3					
Scoliciosporum umbrinum						✓			
Xanthoria parietina				✓		✓			

NOTES AND RECOMMENDATIONS ON THE COMPARTMENTS

The table below shows details of the attributes measured and if the target conditions have been met. In most cases the targets were met and the lichen interests at Nettlecombe are on the whole in favorable condition. Two attributes require attention, one is in compartment K and concerns VT 12 & 13 where Elder should be removed to allow more light to impinge on the trunk bark. A second attribute, the perceived level of NOX input in compartment K requires attention; in this compartment nitrophylous lichen species are on the increase and may interspecifically compete with lichen species that have a higher conservation value.

Epiphytic Lichen Flora Parkland Form. Unit 1

Nettlecombe Park SSSI Interest Feature 'Epiphytic Lichen Assemblages'

Attribute	Measure	Target	Comments	Use for CA
Lichen assemblage Lecanactidium premnea	Lichens recorded from 20 tagged trees showing outstanding assemblage	No reduction in the quality of the Lactidium premnea assemblage	Most trees remain in good condition. Two trees lost due to storm damage, which can be substituted by remaining trees having high quality assemblage. Some reduction in the quality of this assemblage in area 'A' algal overgrowth. **Favourable**	
Lichen assemblage Lobarion pulmoarieae	Lichens recorded from 20 tagged trees showing outstanding assemblage	No reduction in the quality of the Lobarion pulmonarieae assemblage	Loss of Lobaria pulmonarea from tree 4 at observable level (the assemblage higher up the tree will require access by rope and or ladder); this loss is to no obvious reason. The Lobaria amplissima on this tree and on	

			others trees is in an acceptable to good condition. **Favourable**	
Lichen assemblage Xanthorion parietinae	Lichens recorded from 20 tagged trees showing outstanding assemblage	No reduction in the quality Xanthoria parietinae assemblage	No loss **Favourable**	
Niche availability	Visual assessment of tagged and other trees	No loss of wooded area of parkland or wood pasture	Loss of tagged veteran trees 2 and 11 due to storm damage. These lost trees will contribute to the 'dead wood' fraction. The substitution of lost trees with other trees having similar high quality Lichen assemblages **Favourable**	
Niche availability	Visual assessment of the potential successional opportunities for epiphytic lichen colonisation.	No more than 5% decline in: • Number of veteran trees • Quality of fallen dead wood • Number of trees with attached dead wood	There is a continual supply of standing and fallen dead wood for many years. It *is however apparent that there is a 200 year± gap in the age structure of the Oaks which will reduce the available niche at some stage.* ***Favourable***	
Negative indicators: Shade	Visual assessment	No observable increase in dense shrub or climber growth particularly from evergreens' e.g. Rhododendrons', Ivey and Holly around tree trunks	There is some dense vegetation mostly Elder shading in area E especially round Veteran trees 12 & 13, this point was made on the 1996 assessment, photographs	

			indicate that offending shrubs were not removed **Unfavourable**	
Negative indicators: pollution	Evidence of loss of lichen cover or changes in composition of lichens in twig communities and on trunks. National and local trends in air pollution data.	SO2 levels should not exceed 30μg/m3. Annual averages of peak loads of NOX should not increase in average of peak conditions.	An increasing level of algal overgrowth of some lichens and an increase in the population density of nitophylous lichens is indicative of an increase in nitrogen, possibly from too high a stocking density of sheep. **Declining but favourable**	

COMPARTMENT G

TV1, the trunk is heavily shaded by low hanging branches from the same tree, recommend trimming. VT2 requires a substitute for continued monitoring after the loss of this tree to storm damage.

COMPARTMENT M

There is only one tree VT10 in this compartment. Closely monitor for fertiliser drift. Ensure that any arboricultural work undertaken on this tree does not change the hydrology of the trunk.

COMPARTMENT H

Contains TV's 15, 16 and 17. All trees and lichen communities are in good condition with appropriate grassing with a good influx of light and airflow.

COMPARTMENT E

Remove shrubs within 5m of TV's 12 & 13. Substitute the fallen VT11 with VT 243 for the continual monitoring of lichen quality condition. Veteran Tree 3 hosts a Lobarion community which is 'hanging on' this tree is close to the road and protected from traffic pollution by a dense hedge of Holly which should be retained. The dense hedge will also help to retain humidity. This tree is open to the South and enjoys an appropriate influx of light which should be maintained.

COMPARTMENT D

The lichen communities on VT's 5 and 6 are in good condition, the field in which they are in is appropriately grazed to maintain the lichen communities. The pond and woodland in this area should continue to be managed in such a way as to maintain the current level of humidity. Veteran Tree 7 will benefit from the removal of some shrub layer vegetation on its Western side.

COMPARTMENT J

Veteran Tree 19 is the only tree in compartment J with a special lichen interest. The condition of this compartment is more aligned with that in compartment K than any other. A number of species found in the 1996 survey were not refound in the current one; most noticeable is *Rinodina roboris* for which Natural England have an International Responsibility.

COMPARTMENT K

Compartment K has 5 trees of lichen interest in it. This compartment is of greatest concern from a lichen conservation point of view. There has been a noticeable increase in the lichen flora that benefit from an increased level of nutrient input. Many trees show an increased abundance of *Diploicia canescens, Xanthoria parietina* and Physia species which tend to be associated with increasing levels of nitrogen (Wolseley et al 200???). My on-site observations lead me to two possible reasons for the increased level of nutrient input. Firstly high sheep stocking density might be having an impact. Secondly agro-chemical input from the intensively managed land to the East of this area. Obviously there could also be a combination effect. We must not however play down the fact that the high stocking density benefits 'trunk lichen species' by preventing shade and maintaining appropriate light levels

CONSERVATION STATUS OF LICHENS

The conservation status of lichens on the site are identified in Table 13 and accord with the conservation evaluation undertaken by Woods & Coppins 2003, this evaluation is in the process of been up-dated by Brian Edwards pers. com.

There are a total of 23 species of lichens on the site that have been evaluated as having conservation importance. These lichens fall in to five designated categories; 14 species are included in the New Index of Ecological Continuity. Nine species have had been given a status following IUCN Red D Data Categories and Criteria, for detail see Woods & Coppins (2003). There is one BAP priority species, two Red Data Book species and 12 species for which Natural England have an International responsibility.

Table 13. List of all epiphytic species found during the surveys undertaken in 1984, 1996 and 2010, and lists compiled by individuals to date. The species identified with a status are species found in the 2010/11 survey only. The status of each species is defined by Woods & Coppins 2003 and Coppins & Coppins 2002.

Species	New Index of ecological continuity including bonus	Conservation Evaluation	BAP Priority Species	RDB Species 97	International Responsibility

	species				
Acrocordia gemmata					
Agonimia tristicula					
Amandinea punctata					
Anaptychia ciliaris	✓	Vulnerable A		✓	
Arthonia pruinata					
Arthonia radiata					
Arthonia spadicea					
Arthopyrenia lapponina					
Arthopyrenia punctiformis					
Bacidia biatorina					
Bacidia rubella					
Caloplaca obscurella					
Caloplaca ulcerosa		Nat. Scarce			
Calicium glaucellum					
Calicium viride					
Candelariella xanthostigma					
Catillaria atropurpurea					
Chaenotheca trichialis					
Chaenothecopsis nigra		Nat. Scarce			
Chrysothrix candelaris					
Cladonia chlorophaea					
Cladonia coniocraea					
Cladonia macilenta					
Cladonia polydactyla					
Cliostomum griffithii					
Cresponea premnea					✓
Cyrtidula quercus		Nat. scarce			

Dimerella lutea					
Diploicia canescens					
Enterographa crassa					
Enterographa sorediata	✓	Endemic	✓	✓	✓
Evernia prunastri					
Flavoparmelia caperata					
Fuscidea lightfootii					
Gyalecta truncigena					
Hypocenomycis scalaris					
Hypogymnia physodes					
Hypogymnia tubulosa					
Hypotrachyna revoluta					
Hyperphyscia adglutinata					
Lecanactis abietina					
Lecanactis subabietina					
Lecanographa lyncea	✓				✓
Lecanora albella					
Lecanora expallens					
Lecanora dispersa					
Lecanora conizaeoides					
Lecanora chlarotera					
Lecanora confusa					
Lecanora polytropa					
Lecanora symmicta					
Lecidea doliiformis		Nat scarce			
Lecidella elaeochroma					
Lepraria incana					
Lepraria lobificans					
Lobaria amplissima	✓				✓

Lobaria pulmonaria	✓				✓
Megalaria pulverea					
Melanohalea elegantula					
Melanelixia exasperata					
Melanohalea exasperatula					
Melanelixia glabratula					
Melanelixia subaurifera					
Melanohalea laciniatula					
Normandina pulchella					
Ochrolechia subviridis					
Ochrolechia turneri					
Opegrapha prosodea	✓	Nat. scarce			✓
Opegrapha varia					
Opegrapha vermicellifera					
Pachyphiale carneola	✓				
Parmelina pastillifera					
Parmelia saxatilis					
Parmelia sulcata					
Parmelina quercina		Nat. scarce & vulnerable			
Punctelia subaurifera					
Parmotrema crinitum	✓				
Parmotrema perlatum					
Pertusaria albescens					
Pertusaria albescens var corallina					
Pertusaria amara					
Pertusaria coronata		Nat. Scarce			
Pertusaria flavida					
Pertusaria hymenea					

Pertusaria multipuncta	✓				
Pertusaria pertusa					
Pertusaria hemisphaerica					
Porina coralloidea	✓	Nat. scarce			✓
Porina hibernica	✓	Nat. rare & near threatened			✓
Phlyctis argena					
Physconia enteroxantha					
Physconia grisea					
Physconia perisidiosa					
Physcia adscendens					
Physcia aipolia					
Physcia tenella					
Platismatia glauca					
Punctelia reddenda	✓				
Punctelia subrudecta					
Pyrrhospora quernea					
Ramalina calicaris					
Ramalina canariensis					
Ramalina farinacea					
Ramalina fastigiata					
Ramalina fraxinea					✓
Reichlingia leopoldii					
Rinodina roboris					✓
Rinodina sophodes					
Schismatomma cretaceum					✓
Schismatomma decolorans					
Schismatomma vivarium	✓				✓

Scoliciosporum umbrinum					
Thelotrema lepadinum	✓				
Usnea subfloridana					
Xanthoria parietina					
Xanthoria polycarpa					
Totals	**14**	**9**	**1**	**2**	**12**

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