

The Lower Plants of an Area of Marline Woods

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November 2006

1. Introduction

In November 2006, Simon Davey Ecological Consultancy was commissioned by Philip Masters of ACTA to undertake a Lower plant survey of the southern end of Marline Wood to the north of Crowhurst Road. The object of the survey was to locate the nearest part of Marline Wood where lower plant communities were significant. The survey took place on 14th November. At the start, the weather was dry, though rather dingy. Towards midday, a persistent and heavy drizzle began to fall, and this hampered the survey to a degree. However it is hoped that sufficient data is now available. At the end of this report are lists of lower plants, which were made during former surveys.

2. Methodology

Starting at the southernmost point of the most southern part of the Reserve (TQ774112), the survey followed a ride that goes north parallel to the railway line to a point at (TQ7744911739) where the ride stops, being blocked by the stream. Beyond the stream, there is pasture. At this point, the survey continued upstream and into the upper Reserve. Knowledge of the Reserve indicated that the better lower plant areas were to be found in this direction. A course was followed in a zigzag fashion crossing a re-crossing the ride in the southern part. Once the end of the ride was reached, the area closest to the stream was looked at, as this was known to have greatest potential for lower plants. At intervals where something noteworthy was observed, a grid reference was taken using a GPS. Any additional lower plants were recorded, and these are listed between the GPS readings.

3. General Observations

At the southern end, and especially towards the east, the woodland is immature and dense. Light levels are too low for a well developed lichen flora, though there are some mature oaks present, especially towards the west. Care was taken to list oaks close to the ride, where light levels were better, giving a better chance of finding the true value of the area for lower plants. No lichens (Either NIEC or RIEC species: Ref: *Indices of Ecological Continuity for Woodland Epiphytic Lichen Habitats in the British Isles*. Brian Coppins: British Lichen Society 2002) indicating ancient woodland were found. One bryophyte on an unpublished list prepared for the British Bryological Society of Ancient Woodland Indicators by Rod Stern, namely *Eurhynchium striatum* was found. Banks at the southern end of the ride looked promising, but supported one or two common liverwort species only.

4. The closest significant lower plant interest

The nearest lichen of real interest is on a large oak at TQ77801194 and is *Opegrapha corticola*. This is an ancient woodland indicator used to calculate the New Index of Ecological Continuity. Another species in this general area of oak and chestnut is *Arthonia vinosa*. Though not seen on this occasion, it was recorded here in 2005. A few metres further into the wood, a GPS reading was taken on the footpath passing through the woods at the closest point to the one of the most important streamside rock outcrops. The reading was TQ 7782512063. At this point, a heavy drizzle was falling, and the descent to the stream would have been hazardous, and it is doubtful whether a more accurate reading could have been taken. On these rocks, the non lichenised fungus (though described in *The Lichen Flora of Britain and Ireland* O.W.Purvis et al., Natural History Museum Publications 1992 and therefore treated as a lichen) *Mniacea nivea* was found by SRD in 1994. It was refound in May 2006 and this is its only known English site. It grows here on the liverwort *Calypogeia arguta*. Also of interest on these rocks is the moss *Tetradontium brownianum* and seen here in 2006. This species is

recorded in just eight tetrads in Sussex and is described as local and rare, and confined to the Hastings Beds (Ref: *Atlas of Sussex Mosses, Liverworts and Lichens* F.Rose et al. Booth Museum of Natural History 1991) All other rarities including the moss *Fissidens rivularis* are located considerably upstream of this point.

In February 2005, SRD undertook a lower plant survey at Marline over four days and under better weather conditions, and in the section of Marline Wood proper, to the south west of the first main waterfall, and north east of the footbridge at TQ7764011920, the following bryophytes which are common, though reckoned by Rod Stern to be ancient woodland indicators were recorded:-

Mosses

Eurhynchium striatum
Isothecium myosuroides
Rhizomnium punctatum
Thamnobryum alopecurum

Liverworts

Chloroscyphus polyanthos
Radula complanata

No ancient woodland indicator lichens were recorded.

To the south east of this, and into the area known as Park Wood and in the section down to the northern end of the ride, the following ancient woodland indicators were recorded in 2005:-

Mosses

Isothecium myosuroides
Thamnobryum alopecurum

Liverworts

Neckera complanata
Radula complanata (recorded as rare)

2 RIEC and 1 NIEC lichen species (Ref: *Indices of Ecological Continuity for Woodland Epiphytic Lichen Habitats in the British Isles*. Brian Coppins: British Lichen Society 2002) were found on the smooth bark of young ash. None were common in Park Wood, although they are generally very common species:-

RIEC species

Enterographa crassa
Pyrenula chlorospila

NIEC species

Phaeographis dendritica

The woodland either side of the ride surveyed during the current survey was not looked at in 2005.

5. The Findings made during The November 2006 Survey

They survey started at TQ774112 At which point, the woods were dense and too shaded for many lichens, or a great variety of bryophytes to be present.

Here, the following common lichen species were recorded:-

On Chestnut

Flavoparmelia caperata
Lepraria lobificans
Pertusaria pertusa

On Hornbeam

Arthonia radiata
Lepraria incana

On Oak

Lepraria incana
Phlyctis argena
Pertusaria hymenea
Pertusaria pertusa

The following common bryophytes were recorded on the woodland floor, on banks and on dead wood:-

Atrichum undulatum
Brachythecium rutabulum
Hypnum cupressiforme
Hypnum lacunosum var *tectorum*
Kurdbergia prolunga (= *Eurhynchium praelongum*)
Mnium hornum

In the ride

Scleropodium purum

On banks to the east of the ride, the following additional liverworts were recorded:-

Calypogeia arguta
Cephalozia bicuspidata

Fungi – On dead wood

Xylaria hypoxylon

TQ7744311396

At this point, the moss *Thuidium tamariscinum* was recorded for the first time, but is rare. This is not an ancient woodland species, but is mildly indicative of some ecological continuity.

Close to this point, an oak was present close to the edge of the ride. It supported a high lichen biomass because of satisfactory light levels. However, the lichen biodiversity was low. Notable was the presence of *Flavoparmelia caperata* covering approximately 80% of the south western surface. Other common species on this tree included:-

Evernia prunastri
Parmotrema perlatum
Pertusaria amara
Phlyctis argena
Pyrrhospora quernea

Between this point and the next GPS reading, the following extra common species were recorded

Lichens

On oak

Chrysothrix flavovirens
Schismatomma decolorans

Bryophytes - Mosses

Thuidium tamariscinum becomes increasingly frequent on the woodland floor

In the ride

Calliergonella cuspidata – scarce in one damp part

Bryophytes - Liverworts

TQ7744911548

On a bank

Bryophytes - Liverworts

Calypogeia muelleriana

Bryophytes – Mosses

On a bank

Pseudotaxiphyllum elegans

On the woodland floor

Eurhynchium striatum – a species on Rod Stern's list reckoned to be an ancient woodland indicator recorded for the first time.

Between this GPS reading and the next

Lichens

On hornbeam

Pertusaria hymenea

On oak

Cladonia coniocraea

Lecanora chlarotera

Pertusaria hymenea

Bryophytes – Mosses

In the ride

Fissidens adiantoides

Fungi

On dead wood

Daldinia concentrica

TQ7744011656

From this point northwards, *Thuidium tamariscinum* is frequent to abundant in the ground flora.

TQ7744911739

At this point, the ride ends, and in front is the main stream beyond which is pasture. Park Wood was now surveyed close to the stream, and the following species were recorded. Light levels were diminishing and a drizzle had begun to fall.

Lichens

On oak

Pertusaria leioplaca

On hazel

Graphis scripta

Bryophytes – Mosses

On the ground

Eurhynchium striatum – is now abundant to dominant

Fissidens taxifolius

Thuidium tamariscinum – frequent to abundant

Bryophytes - Liverworts

on oak

Metzgeria furcata

On the stream bank

Conocephalum conicum

TQ7764011920

This is the point where a footbridge crosses the stream.

6. Notes on current pollution levels

The total absence of the lichen *Xanthoria parietina*, and any other members of the genus *Xanthoria* on oak twigs and branches indicates that there is little or no eutrophication from intensive farming in the area, or ammonia from car exhausts. The presence of the lichen *Parmotrema perlatum* also indicates no sulphur dioxide pollution from any processes such as brick works, fossil fuel power stations etc.

7. Total Lists

7.1 Species recorded before Park Wood either side of the Ride

Bryophytes – Liverworts

Calypogeia arguta
Calypogeia muellerana
Cephalozia bicuspidata

Bryophytes – Mosses

Atrichum undulatum
Brachythecium rutabulum
Calliergonella cuspidata
Eurhynchium striatum
Fissidens adiantoides
Hypnum cupressiforme
Kurdbergia prolunga
Mnium hornum
Pseudotaxiphyllum elegans
Scleropodium purum
Thuidium tamariscinum

Lichens

Arthonia radiata
Chrysothrix flavovirens
Cladonia coniocraea
Evernia prunastri
Flavoparmelia caperata
Lecanora chlarotera
Lepraria incana
Lepraria lobificans

Parmotrema perlatum
Pertusaria amara
Pertusaria hymenea
Pertusaria pertusa
Phlyctis argena
Pyrrhospora querneae
Schismatomma decolorans

7.2 Species recorded on all occasions in Park Wood

This includes records which were part of a major survey undertaken by myself in 2005

Bryophytes – Liverworts

Calypogeia fissa
Cephalozia bicuspidata
Conocephalum conicum
Lophocolea heterophylla
Marchantia polymorpha
Metzgeria fruticulosa
Metzgeria furcata
Neckera complanata
Pellia epiphylla
Radula complanata

Bryophytes – Mosses

Atrichum undulatum
Brachythecium plumulosum - rare
Brachythecium rutabulum
Ctenidium molluscum
Eurhynchium striatum
Fissidens taxifolius
Heterocladium heterophyllum – rare
Homalia trichomanoides
Hypnum cupressiforme
Isoetecium myosuroides
Kurdbergia praelonga
Mnium affine
Mnium hornum
Orthodontium lineare
Plagiomnium undulatum
Polytrichum formosum
Thamnobryum alopecurum
Thuidium tamariscinum

Lichens

Cladonia coniocraea
Graphis scripta
Enterographa crassa
Hypotrachyna revoluta
Lecanora chlarotera

Lecidella elaeochroma
Lepraria incana
Lepraria lobificans
Lepraria umbricola
Pertusaria hymenea
Pertusaria pertusa
Phaeographis dendritica

Opegrapha vulgata

.1.1 **Phlyctis argena**

Pyrenula chlorospila
Pyrrhospora quernea

7.3 The following species were recorded during the 2005 survey between the bridge at TQ 7764011920 to the north in Marline Wood proper and the lowest waterfall

Bryophytes – Liverworts

Calypogeia arguta
Calypogeia fissa
Chiloscyphus polyanthos
Conocephalum conicum
Lejeunea ulicina
Metzgeria furcata
Pellia epiphylla
Radula complanata

Bryophytes - Mosses

Atrichum undulatum
Brachythecium plumulosum
Brachythecium rutabulum
Ctenidium molluscum
Diplophyllum albicans
Dicranella heteromalla
Eurhynchium praelongum
Eurhynchium striatum
Fissidens taxifolius
Hypnum andoi
Hypnum cupressiforme
Isothecium myosuroides
Mnium hornum
Orthotrichum affine
Plagiothecium nemorale
Polytrichum formosum
Pseudotaxiphyllum elegans
Rhizomnium punctatum
Rhynchostegium riparioides
Thamnobryum alopecurum
Thuidium tamariscinum

Lichens

<i>Arthonia elegans</i>	on hazel
<i>Cladonia coniocraea</i>	on hazel
<i>Graphis scripta</i>	on hazel
<i>Opegrapha sorediifera</i>	on oak
<i>Pertusaria amara</i>	on oak
<i>Porina aenea</i>	on hazel
<i>Cladonia chlorophaea</i>	
<i>Cladonia pyxidata</i>	
<i>Lepraria incana</i>	
<i>Lepraria lobificans</i>	

8. Conclusions

The lower plant list that was made in the woodland beside the ride shows little biodiversity. There are no lichens indicated ecological continuity, and only one moss. Going northwards through the woodland of Marline Wood, so the biodiversity increased until the main (the most northern) waterfall in Marline Wood proper.