

## 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 14<sup>th</sup> 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 One bryophyte on an unpublished list prepared for the British Bryological Society of Ancient Woodland Indicators by Rod Stern, namely *Eurhynchium striatum* was found.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 quernea*  
*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*  
*Isothecium 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.