

# **Snail Wood Woodland & River Survey:** **31.07.06 – 4.07.06**

## **Basic Woodland information**

Name: Snail Wood  
Size: aprox. 95m x 69m (at deepest points)  
Wood type: Broadleaf  
Woodland features: Coppicing, Dead trees, Stream.  
Land use of woodland boundaries: Trees, Arable, Stream.

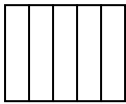
## **Map**

I have drawn up two maps, one to show the outline of the forest and the different habitats within Snail Wood, and another to show what points any experiments were carried out. Each with a key to show what each symbol means.

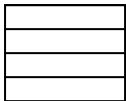
### **General key:**



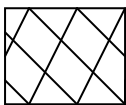
Area containing mostly Lombardy Poplar & Ground Ivy



Area containing mostly older woodland, such as Ash, Sycamore, Hawthorn, Blackthorn, Ivy with less ground coverage.



Area containing mostly Elder with less ground coverage.



Area containing mostly Reeds, Brambles and wild flowers – particularly attractive to butterflies and moths.

## **20m<sup>2</sup> plot analysis**

### **Species of tree found:**

Tree Species	Number of species
Lombardy poplar	12
Elder	28

Within the 20m<sup>2</sup> plot there were only two species of tree present, the Elder tree and the Lombardy poplar tree. Lombardy poplar is not a native tree species to the UK; it originates from Italy and is a variety of Black poplar, part of the Salicaceae (Willow) family. Many of this species have been planted to act as windbreaks for arable land or for ornamental purposes along roadsides. I suspect that the abundance of Lombardy Poplar in Snail Wood has been due to Farmers planting this to protect the surrounding land from high winds. There is also a large quantity of Elder trees which seem to clump together in the shadier parts of the wood. These are divided into two clusters, which are marked onto the map.

### **Quadrat analysis:**

#### **Method:**

From each corner of the 20m<sup>2</sup> plot, a 1m<sup>2</sup> quadrates were thrown randomly, twice, and every species within the quadrat was recorded. An estimation was made as to the abundance of the species in the quadrat using the following scoring system:

- 1 = <25%
- 2 = 26 - 50%
- 3 = 51 - 75%
- 4 = 76%

#### **Results:**

Quadrat	Species found	Abundance Score
1	Nettles	4
	Ground Ivy	3
	Moss	2
2	Nettles	3
	Ground Ivy	4
3	Nettles	2
	Ground Ivy	1
	Moss	4
4	Nettles	4
	Ground Ivy	1
	Moss	2
	Ivy	1
5	Ground Ivy	1
	Lords & Ladies	1
	Elder Sapling	1

6	Nettles	3
	Ground Ivy	2
	Reeds	2
7	Nettles	2
	Ground Ivy	4
8	Nettles	1
	Ground Ivy	3
	Moss	1
	Reeds	1

This method illustrates the abundance of Stinging Nettles (*Urtica dioica*) and Ground Ivy within the central section of Snail Wood. It is important to note that the survey takes into account only the area within the 20m<sup>2</sup> plot (as marked on the map), and so all the species listed are typical of this area, but not, for example the area around the river bed. Also, from general observation that I have made, the species listed are the only ones that I came across during the three days in Snail Wood.

Scattered around Snail Wood is the flower Lords and Ladies; this was found in most areas of the wood in small amounts. The common Reed was found in areas closest to the front edge of the wood, represented by the crosshatched part of the map.

### **General flora analysis**

#### **Table show the species of tree found and their abundance:**

<b>Tree Species</b>	<b>Number of species</b>
Beech	1
Lombardy Poplar	15
Elder	28
Hawthorn	9
Sycamore	9
Blackthorn	6
Ash	16
Brambles	6
Buckthorn	1

The woodland as a whole is fairly diverse, as there are about 3 different habitats. Each of these habitats can be obviously seen once in the wood, but are also marked onto the map, with a key and list to describe which plants are common to that area. The more mature woodland at the back of Snail Wood, running alongside the river bank has the greatest tree diversity in the wood, including all of the ones on the above list.

The most diverse habitat in the wood, however, is the area marked by crosshatching on the map. It contains approximately 20 different species of tree and plants. All of the plants listed below are found in this area, as well as Elder, Lombardy Poplar, Blackthorn and Hawthorn. This will probably have been caused by the large exposure to sunlight, and the

moist soil which can be found throughout the wood. There has been talk that the original river did flow along this line, before being diverted around the back of the wood, which may also give this area more desirable moisture levels; most of the plants found in this segment preferred wet land area.

The central part of the wood was not a very diverse area, containing mostly Ground Ivy, Stringing Nettles, Moss, Lombardy Poplar, Elder and occasionally a stem of Lords and Ladies. The lack of diversity is probably caused by the abundance of Lombardy Poplar – which most likely was purposely planted – as it provides a lot of shade and will take in a lot of the soil moisture also.

## List of plant species, including Latin names and families

<u>Species Common Name(s)</u>	<u>Latin Name</u>	<u>Family</u>	<u>Genus</u>
<b>Tree</b>			
Ash	Fraxinus excelsior	Oleaceae	<i>Fraxinus</i>
Beech	Fagus sylvatica	Fagaceae	Fagus
Lombardy Poplar	Populus nigra	Salicaceae (Willow)	Populus
Elder	Sambucus nigra	Adoxaceae	Sambucus
Hawthorn	Crataegus monogyna	Rosaceae (Rose)	Crataegus
Blackthorn	Prunus spinosa	Rosaceae (rose)	Prunus
Buckthorn	Rhamnus purshiana	Rhamnaceae	Rhamnus
Sycamore Maple	Acer pseudoplatanus	Platanaceae	Acer
<b>Plant</b>			
Bramble	Rubus fruticosus	Rosaceae (Rose)	Rubus
Hemp Agrimony	Eupatorium cannabinum	Asteraceae (sunflower)	Eupatorium
Fleabane		Asteraceae (sunflower)	Senecio.(Daisy)
Mouse Ear Hawkweed	Pilosella officinarum	Asteraceae (sunflower)	Pilosella
Rosebay Willow Herb	Epilobium augustifolium	Onagraceae	Epilobium
Bittersweet or Woody Nightshade	Solanum dulcamara	Solanaceae	Solanum
Bristly Ox Tongue	Picris echioides.	Asteraceae (Sunflower)	Picris
Sow Thistle	Sonchus asper	Asteraceae (sunflower)	Sonchus
Cut-leaved Cranesbill	Geranium dissectum	Geraniaceae (geranium)	Geranium
Common Mallow	Malva neglecta	Malvaceae (Mallow family)	Malya
Dead Nettle	Lamium purpureum	Lamiaceae (mint)	Lamium
Ragwort	Senecio jacobaea	Asteraceae (sunflower)	Senecio
Spear Thistle	Cirsium lanceolatum	Asteraceae (sunflower)	Cirsium
Knapweed	Unable to find	Asteraceae (sunflower)	Centaurea
Clover	Trifolium repens	Fabaceae	Trifolium

## **Butterfly Sweepnetting**

### **Method:**

Sweepnetting is the process of catching a butterfly or moth in a net, then collecting the species in a viewing glass for identification purposes, before letting the creature go again. I chose to sweepnet on a particular transect – the front meadow of the wood - and spent 15 minutes on it when ever the weather was most advantageous Unfortunately, for the most part, the weather was grey and very windy, which is not good for sweepnetting, as the butterflies rest in the vegetation, making it very difficult to catch or even see the species. The first day did provide some useful data, however, as it was fairly sunny, with moderate winds.

### **Results:**

<b>Date</b>	<b>Weather</b>	<b>Species Family</b>	<b>Species</b>	<b>Tally</b>
31.07.06	Light wind & Sunny	Nymphalidae	Small Tortoiseshell	1
		Lycaenidae	Holly Blue	1
		Satyridae	Meadow Brown	2
01.08.06	Strong wind & Grey	None	None	0
02.08.06	Strong wind & Grey	None	None	0

The data collected shows some of the species that are present within the Snail Wood area. On the first day of butterfly catching, there were a lot of butterflies, however, catching and identifying them is quite difficult, and so, not all were recorded. However, this does illustrate quite nicely that the plants in the area attract butterflies and moths - if, as was suggested to me, the area were left to grow into a small meadow, then the wild plants already there would attract a variety of species.

## **Mammal Trapping**

This experiment did not produce any results as to what mammals are in the wood. There is sufficient evidence, such animal droppings, a rabbit sighting and animal dropping to conclude that there is a population of rabbits present, and other smaller mammals, such as mice, and possibly water rats. Due to time constraints, the mammal trapping could only be done during the day - which meant that most of the mammals would be asleep, as they are nocturnal – and so, it is unsurprising that there were no mammals caught.

## **River Survey**

### **General information:**

Date	02.08.06
River name	River Snail
River Width	<1m (aprox. 32cm)
What's the river bed made of	Mud, silt and rocks in places.
Velocity	2.8 m/s
What's the river bank made of	Earth
What's the river bank shape	Steep
River litter: no# items in 50cm stretch	2
Type of litter	Beer Cans
Artificial features?	Fallen Bridge / Ladder?
Fishing activity?	No
Surrounding land use	Arable & woodland
River pH	Aprox. 7

### **Plants:**

There was no vegetation in the river itself; however, there was a fair amount of vegetation on the river bank.

<b>Bank Vegetation</b>	<b>No# of quadrates it appears in</b>
Ivy	4
Grass	2
Stinging Nettles	3
Hawthorn	1
Elder	2
Sycamore maple	1
Moss	3
Bramble	1

The species found on the river bed are typical of the species found further inside the wood. A major difference was that, there was a greater diversity of flora, and that Ivy showed a large abundance, and yet no Ground Ivy was found, although it had high prevalence further into the depths of the wood. This may be to do with the conditions in which the two different Ivies were growing in. Ground Ivy had a lot of competition from Nettles and Poplars, and so, this plant is probably adapted to needing less water and space. Ivy had little competition from plants or shrubs, and its roots stuck out into the river, rather than in the soil, so this species probably needs more water and space than Ground Ivy.

### **Invertebrates:**

Below is a list of all the invertebrates found in the River Snail between the points marked on the map.

Blood Worm  
Rag-tailed Maggot  
Freshwater Shrimp  
Pond Snail  
Leech  
Cased Caddisfly

Using this information, I can use BMWP (Biological Monitoring Working Party) System to estimate the cleanliness of the water. Some Species are not included in the calculation, and they do not indicate either clean or polluted water.

Species	BMWP Score
Blood Worm	N/A
Rag-tailed Maggot	3
Freshwater Shrimp	6
Pond Snail	N/A
Leech	3
Cased Caddisfly	7

### **Method of calculation:**

1. Add up the BMWP score
2. Divide the total BMWP score by the total number of species

$$3 + 6 + 3 + 7 = 19$$

$$19/4 = \mathbf{4.75}$$

### **What does the number mean?**

10 = Clean water containing the least pollution resistant species e.g. stonefly nymph or mayfly nymph. These species have gills for gaseous exchange; polluted water restricts this gaseous exchange.

0 = Polluted water containing the most pollution resistant species e.g. rat-tailed maggot; this has a 'snorkel' which it puts to the top of the water to take in air from the atmosphere, and so can survive anywhere.

This indicates that the water is fairly clean, and despite the methods lack of reliability, it allows us to have a good idea of what different species signal and the condition of a river.

### **PH testing**

Two samples of river water were taken from points 1 and 2 on the map to have their pH tested. Sample 1 had a pH of 7.85 and sample 2 had a pH of 7.79. The most likely reason for the difference in the two pHs is that the pH meter used failed its calibration test on this experiment; not by a large margin, but enough for it to be unreliable. However, the experiment does serve to show that the pH of the water is about neutral, which is what would be expected.

## **Summary**

Snail Wood is quite a diverse area, home to not different species of trees, but small mammals, plants life, butterflies and moths. However, in the main centre of the wood, the biodiversity drastically falls, and the wood is dominated by Lombardy Poplars, Stinging Nettles, Ground Ivy and Elder, with evidence of some small mammals. Around the outside of the wood, there are more native tree species, such as Ash and Sycamore – particularly found alongside the river - and many species of wild plants, which are attracting a lot of butterflies and moths – found mostly on the grassy side of the wood. HFL's proposal to clear the wood to make it into not only a more native type of wood, but one much more usable and social, so that people may enjoy the benefits of Snail Wood, will not effect the already existing species too greatly as they already have plans to keep many of the species along the outskirts of Snail Wood.