

## Ecological survey of Knepp Estate Road Verges and assessment for Notable Road Verge designation

Ben Rainbow, Assistant Ecologist, West Sussex County Council, 25.08.10



*Picture 1 - New Smithers Hill Lane Notable Road Verge. The plant Pepper Saxifrage (*Silaum silaus*) in the foreground. This is a plant of damp, unimproved grassland, normally on clay soils.*



*Picture 2 - Zig-zag Clover (*Trifolium medium*) a plant of grassy places, occasional in West Sussex.*

## **Summary**

Of the number of road verges surveyed in the vicinity of the Knepp Estate, Shipley, one has been designated as a notable road verge. This verge is on Smithers Hill Lane (NGR TQ13802286). The flora present on this verge includes several uncommon species indicative of unimproved species-rich grassland, a Biodiversity Action Plan (BAP) and scarce habitat.

Another road verge on the east verge of Pound Lane, near the entrance to Knepp Castle (NGR TQ14892229), had a large diversity of species and habitats, ranging from damp rough grassland, marsh and woodland. This verge was not designated as a notable road verge however as no rare or scarce species or habitats were found, and the current management appears to suit the biodiversity present.

## Introduction

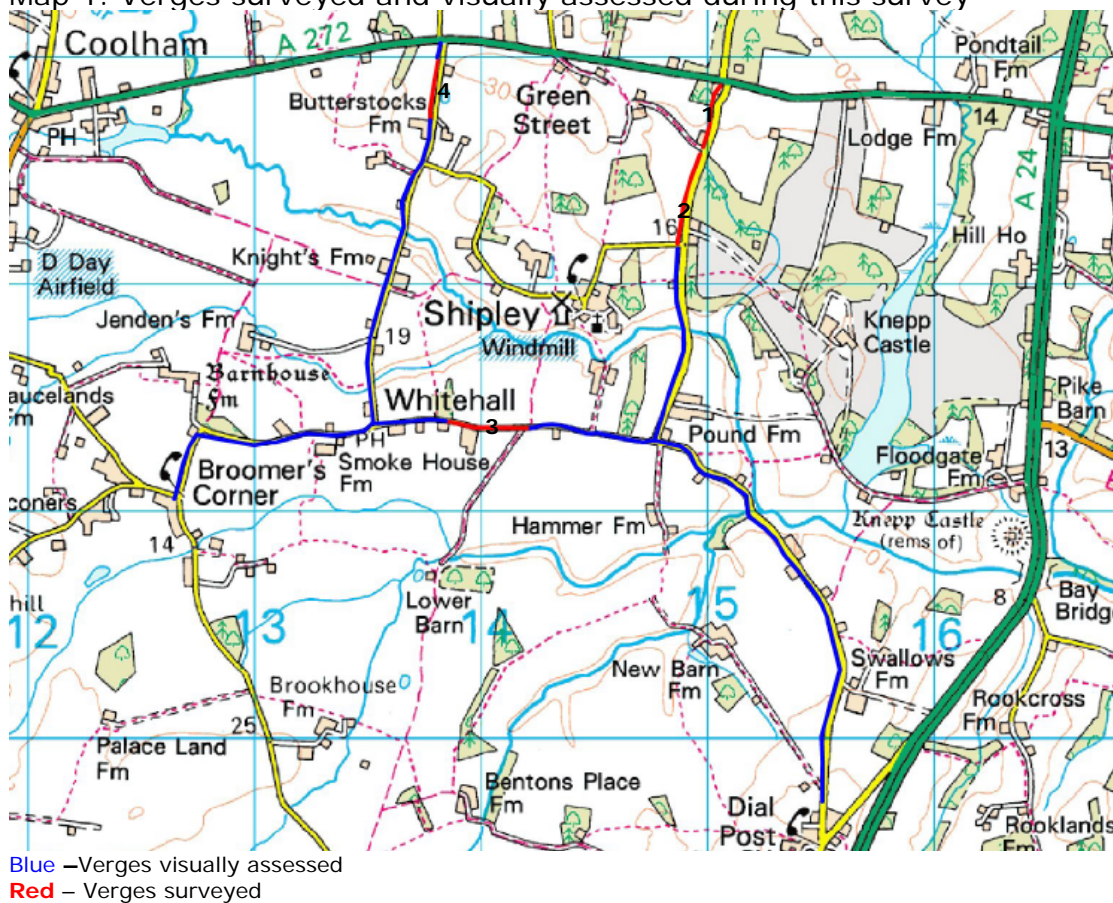
Over the last 5 years, a number of local naturalists, highways engineers and landowners have highlighted road verges in the area of the Knepp Estate, in the Parish of Shipley, as being valuable for wildlife.

In late August 2010 this ecological survey was undertaken of the road verges in the Knepp Estate area, with light to designating the high quality areas as Notable Road Verges. A West Sussex County Council initiative to positively manage and enhance road verges important for wildlife.

## Methodology

Road verges in the area highlighted on the map 1 (below) were visually assessed for species richness from a slow moving and regularly stopping vehicle. Those verges that looked diverse were surveyed on foot, and a species list of flora and fauna made. The DAFOR scale of abundance was used to record the frequency of plant species recorded. Fauna was recorded numerically. The data was inputted into the Sussex Biodiversity Records Centre's Species Recorder Software. Data displayed below has been extracted in this format.

Map 1. Verges surveyed and visually assessed during this survey





## Results

### Location: 1 – Pound Lane, Shipley

Surveyor: Ben Rainbow. Date: 28.08.10

The northern end of Pound Lane on the east side (location 1) is comprised of a hedge bank with some small areas of moderately species-rich grassland including woodland ground flora. Plants present in small quantities include Black Knapweed (*Centurea nigra*), Betony (*Betonica officinalis*), Barren Strawberry (*potentilla sterilis*) and Violet species (*viola spp*). The southern end has a ranker sward with low species diversity.

Species_Name	Grid_ Reference	Abundance	Sex_ Stage	Rarity
Dog violet spp	TQ15062285	DAFOR R	Present	
Sweet Violet	TQ15062285	DAFOR R, LO	Present	
Orache spp	TQ15062285	DAFOR O	Present	
Greater Stitchwort	TQ15062285	DAFOR R, LO	Present	
Creeping Cinquefoil	TQ15062285	DAFOR R	Present	
Crosswort	TQ15062285	DAFOR R, LO	Present	
Yarrow	TQ15062285	DAFOR O	Present	
Silverweed	TQ15062285	DAFOR R	Present	
Garlic Mustard	TQ15062285	DAFOR R	Present	
Dog's Mercury	TQ15062285	DAFOR R, LO	Present	
Ground-Ivy	TQ15062285	DAFOR R, LO	Present	
Creeping-Jenny	TQ15062285	DAFOR R	Present	
Vetch spp	TQ15062285	DAFOR R	Present	
Germander Speedwell	TQ15062285	DAFOR R	Present	
Wood Avens	TQ15062285	DAFOR R	Present	
Barren Strawberry	TQ15062285	DAFOR R	Present	
Primrose	TQ15062285	DAFOR R, LO	Present	
Betony	TQ15062285	DAFOR R, LF	Present	
Bugle	TQ15062285	DAFOR R	Present	
Meadow Buttercup	TQ15062285	DAFOR R	Present	
Agrimony	TQ15062285	DAFOR R	Present	
Meadow Vetchling	TQ15062285	DAFOR R	Present	
Black Knapweed	TQ15062285	DAFOR R	Present	
Blackthorn	TQ15062285	DAFOR R, LO	Present	
Great Tit	TQ15062285		2Adult	
Lesser Stitchwort	TQ15062285	DAFOR R	Present	
Common Bird's-Foot- Trefoil	TQ15062285	DAFOR R	Present	
Stone Parsley	TQ15062285	DAFOR R	Present	
Yorkshire-Fog	TQ15062285	DAFOR O	Present	
Wood Melick	TQ15062285	DAFOR O	Present	
Common Sorrel	TQ15062285	DAFOR R	Present	
Ribwort Plantain	TQ15062285	DAFOR R	Present	
Selfheal	TQ15062285	DAFOR R	Present	
Common Ragwort	TQ15062285	DAFOR R	Present	
Black Medick	TQ15062285	DAFOR R	Present	
Ivy	TQ15062285	DAFOR O	Present	
Wild Privet	TQ15062285	DAFOR R	Present	

Hogweed	TQ15032269	DAFOR R	Present
Water Mint	TQ15032269	DAFOR R	Present
Creeping Thistle	TQ15032269	DAFOR O	Present
Spear Thistle	TQ15032269	DAFOR R	Present
Meadow Buttercup	TQ15032269	DAFOR R	Present
Bramble	TQ15032269	DAFOR O	Present
Dog's Mercury	TQ15032269	DAFOR O	Present
Meadowsweet	TQ15032269	DAFOR R	Present
Black Knapweed	TQ15032269	DAFOR R, LO	Present
Hemp-Agrimony	TQ15032269	DAFOR R	Present
Common Fleabane	TQ15032269	DAFOR R	Present
Vetch spp	TQ15032269	DAFOR R, LO	Present
Oxeye Daisy	TQ15032269	DAFOR R	Present

### **Location: 2 – Pound Lane, Shipley**

Surveyor: Ben Rainbow. Date: 28.08.10

Location 2 is a wide flat verge with varying habitats; damp rough grassland, marsh and woodland. The marshy areas include species, Meadowsweet (*Filipendula ulmaria*), Water mint (*Mentha aquatica*), Hairy Sedge (*Carex hirta*) and Creeping Buttercup (*Ranunculus repens*). The nectar sources present during the survey period are important for invertebrates locally. The damp rough grassland is comprised of species including Black Knapweed (*Centurea nigra*), Common Fleabane (*Pulicaria dysenterica*) and False-fox Sedge (*Carex otrubae*). To the south, the ground flora is typical of a woodland including species Wood Sedge (*Carex sylvatica*), Wood Avens (*Geum urbanum*) and Greater Stitchwort (*Stellaria holostea*).

Creeping Cinquefoil	TQ14942249	DAFOR A	Present
Lesser Stitchwort	TQ14942249	DAFOR O	Present
Black Medick	TQ14942249	DAFOR O, LF	Present
Black Knapweed	TQ14942249	DAFOR O	Present
Roesel's Bush Cricket	TQ14942249		2Adult
Dark Bush Cricket	TQ14942249		1Adult
Long-Winged Conehead	TQ14942249		1Adult
Broad-Leaved Dock	TQ14942249	DAFOR R, LO	Present
Creeping Thistle	TQ14942249	DAFOR R, LO	Present
Hairy Tare	TQ14942249	DAFOR O	Present
Common Blue	TQ14942249		2Adult
Meadow Vetchling	TQ14942249	DAFOR R	Present
Small Copper	TQ14942249		1Adult
Tufted Vetch	TQ14942249	DAFOR O	Present
Red Bartsia	TQ14942249	DAFOR R	Present
Greater Willowherb	TQ14942249	DAFOR O	Present
Common Fleabane	TQ14942249	DAFOR O, LA	Present
Creeping Buttercup	TQ14942249	DAFOR O, LF	Present
Blood-Vein Moth	TQ14942249		1Adult
Meadowsweet	TQ14942249	R, LF	Present
Betony	TQ14942249	DAFOR R	Present
Orache	TQ14892229	DAFOR R, LO	Present
Timothy	TQ14892229	DAFOR R	Present

Redshank	TQ14892229	DAFOR O	Present
Common Fleabane	TQ14892229	DAFOR O, LF	Present
Greater Willowherb	TQ14892229	DAFOR R	Present
Silverweed	TQ14892229	DAFOR O, LF	Present
Meadowsweet	TQ14892229	DAFOR O, LD	Present
Seven-Spot Ladybird	TQ14892229		1 Adult
Creeping Cinquefoil	TQ14892229	O	Present
Lesser Stitchwort	TQ14892229	DAFOR O, LF	Present
Greater Bird's-Foot-Trefoil	TQ14892229	DAFOR R	Present
Broad-Leaved Dock	TQ14892229	DAFOR O	Present
Common Sorrel	TQ14892229	DAFOR R	Present
Bugle	TQ14892229	DAFOR R	Present
Creeping Buttercup	TQ14892229	DAFOR F	Present
Water Mint	TQ14892229	DAFOR O, LA	Present
False Fox-Sedge	TQ14892229	DAFOR R	Present
Soft Rush	TQ14892229	DAFOR O	Present
Red Bartsia	TQ14892229	DAFOR R	Present
Tufted Vetch	TQ14892229	DAFOR O	Present
White Clover	TQ14892229	DAFOR O, LA	Present
Hornet	TQ14892229		2 Adult
Scaeva pyrastris			
Hoverfly	TQ14892229		1 Adult
Meadow Vetchling	TQ14892229	DAFOR R	Present
Hogweed	TQ14892229	DAFOR R	Present
Common Ragwort	TQ14892229	DAFOR R, LO	Present
Marsh Woundwort	TQ14892229	DAFOR R	Present
Cranesbill spp	TQ14892229	DAFOR R	Present
Bramble Spp	TQ14892229	DAFOR R	Present
Nettle	TQ14892229	DAFOR R, LO	Present
Hairy Sedge	TQ14892229	DAFOR R, LO	Present
Crosswort	TQ14892229	DAFOR R	Present
Meadow Foxtail	TQ14892229	DAFOR O	Present
Wood Sedge	TQ14892229	DAFOR R, LO	Present
Wood Avens	TQ14892229	DAFOR R	Present
Ground-Ivy	TQ14892229	DAFOR R	Present
Agrimony	TQ14892229	DAFOR R	Present
Greater Stitchwort	TQ14892229	DAFOR R	Present
Betony	TQ14892229	DAFOR R	Present
Perforate St. John's-Wort	TQ14892229	DAFOR R	Present
Eristalis tenax	TQ14892229		1 Adult

### Location: 3 – Countryman Lane Verge, Shipley CP

Surveyor: Ben Rainbow. Date: 28.08.10

Location 3 is a wide flat rank grassland verge with a low to medium diversity of plant species. Hairy Sedge (*Carex hirta*) is frequent, Hogweed (*Heracleum sphondylium*) and Creeping Thistle (*Cirsium arvense*) are occasional.

Species_Name	Grid_ Reference	Abundance	Sex_ Stage	Rarity
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Hairy Sedge	Unknown	DAFOR F	Present
Creeping Cinquefoil	Unknown	DAFOR O	Present
Vetch spp	Unknown	DAFOR R	Present
Hogweed	Unknown	DAFOR O	Present
Creeping Thistle	Unknown	DAFOR O	Present
Red Bartsia	Unknown	DAFOR R	Present
Bramble Spp	Unknown	DAFOR O	Present
Meadow Vetchling	Unknown	DAFOR R	Present
Common Fleabane	Unknown	DAFOR R	Present
Greater Willowherb	Unknown	DAFOR R, LO	Present
Nettle	Unknown	DAFOR R	Present
Meadowsweet	Unknown	DAFOR R	Present
Smooth Tare	Unknown	DAFOR R	Present
Tufted Vetch	Unknown	DAFOR O	Present
Black Knapweed	Unknown	DAFOR R	Present
Ribwort Plantain	Unknown	DAFOR R	Present
Horsetail spp	Unknown	DAFOR R	Present
Field Bindweed	Unknown	DAFOR R	Present
Greater Stitchwort	Unknown	DAFOR R	Present
Agrimony	Unknown	DAFOR R	Present
Vetch spp	Unknown	DAFOR R	Present

#### **Location: 4 – Smithers Hill Lane NRV, Shipley CP**

Surveyor: Ben Rainbow. Date: 28.08.10

Location 4 is unimproved species-rich grassland habitat with a number of scarce species. Pepper Saxifrage (*Silene saxifraga*) is occasional throughout the verge and Zig-zag Clover (*Trifolium medium*) is present in several locations (see picture 1 & 2). The damp grassland areas include plant species Marsh Bedstraw (*Galium palustre*), Marsh Thistle (*Cirsium palustre*) and meadowsweet (*Filipendula ulmaria*). Black Knapweed (*Centurea nigra*), Hairy Sedge (*Carex hirta*), Red Bartsia (*Odontites verna*) and Agrimony (*Agrimonia eupatoria*) occur frequently (see picture 6).

The sward is rank in parts and would benefit from traditional management practices, such as an annual hay cut.



Picture 6 - Damp unimproved grassland habitat on eastern verge

Species_Name	Grid_ Reference	Abundance	Sex_ Stage	Rarity
Black Knapweed	TQ13802279	DAFOR F, LA	Present	
Agrimony	TQ13802279	DAFOR O	Present	
Red Bartsia	TQ13802279	DAFOR O, LA	Present	
Creeping Thistle	TQ13802279	DAFOR O	Present	
Yarrow	TQ13802279	DAFOR O	Present	
Greater Bird's-Foot-Trefoil	TQ13802279	DAFOR O	Present	
Vetch spp	TQ13802279	DAFOR R	Present	
Creeping Cinquefoil	TQ13802279	DAFOR O	Present	
Ribwort Plantain	TQ13802279	DAFOR O	Present	
Crosswort	TQ13802279	DAFOR O	Present	
Germander Speedwell	TQ13802279	DAFOR R	Present	
Hoary Ragwort	TQ13802279	DAFOR R, LO	Present	
Common Bird's-Foot-Trefoil	TQ13802279	DAFOR O	Present	
Creeping Buttercup	TQ13802279	DAFOR O	Present	
Hogweed	TQ13802279	DAFOR R	Present	
Meadowsweet	TQ13802279	DAFOR O, LA	Present	
Common Sorrel	TQ13802279	DAFOR O	Present	
Meadow Buttercup	TQ13802279	DAFOR O	Present	
Ground-Ivy	TQ13802279	DAFOR O	Present	
Betony	TQ13802279	DAFOR O	Present	Uncommon
Hairy Sedge	TQ13802279	DAFOR F	Present	
Mugwort	TQ13802279	DAFOR R	Present	



Water Mint	TQ13802279	DAFOR R, LA	Present	
White Clover	TQ13802279	DAFOR R	Present	
Soft Rush	TQ13802279	DAFOR R, LF	Present	
False Fox-Sedge	TQ13802279	DAFOR R, LO	Present	
Marsh Thistle	TQ13802279	DAFOR R	Present	
Creeping-Jenny	TQ13802279	DAFOR R, LF	Present	
Jointed Rush	TQ13802279	DAFOR R, LO	Present	
Marsh Bedstraw	TQ13802279	DAFOR R	Present	
				Uncommon, unimproved grassland indicator
Pepper-Saxifrage	TQ13802279	DAFOR R	Present	
				Uncommon, unimproved grassland indicator
Pepper-Saxifrage	TQ13802286	DAFOR O	Present	
				Occasional in West Sussex
Zigzag Clover	TQ13802286	DAFOR R	Present	

## Conclusion

The survey was undertaken in late Summer 2010 and consequently not all species may have been present or identifiable. It is recommended that another survey be undertaken in spring and early summer in 2011 so earlier flowering plants such as woodland species, and especially orchids, can be recorded and inform this ecological assessment. This information may lead to amendments to the extent of notable road verges designated.

Location 1 and 2 on Pound Lane have a moderate diversity of plants but no rare or scarce species or habitats were found and will therefore not be designated as a Notable Road Verge.

Location 3, Pond Lane, has a good diversity of species and habitats. This verge has not designated as a notable road verge however as no rare or scarce species or habitats were found, and the current management appears to suit and maintain the biodiversity present.

Location 4 on Smithers Hill Lane (NGR TQ13802286) supports a species-rich flora and several scarce and uncommon plant species. The diversity of other plants present is also high. This verge will therefore be designated as a notable road verge. A copy of the new site description is appended below:

## WEST SUSSEX NOTABLE ROAD VERGES

<b>Road Name and WSCC Code:</b> N21 – SMITHERS HILL LANE, SHIPLEY		<b>Road Number and Section Number:</b> D116/105
<b>Grid Ref:</b> TQ 138 228	<b>Parish:</b> SHIPLEY	<b>Side of road:</b> EAST & WEST
<b>Interest:</b> BOTANICAL	<b>Length (m):</b> 170m	<b>Works Unit/Highways Area Team:</b> THREE / NORTHERN
<b>Site Description:</b>  <p>This wide verge is predominantly unimproved species-rich damp grassland, and seasonal pond. An abundance of plant species is present including Pepper Saxifrage (<i>Silaum silaus</i>), which is occasional throughout the verge, and Zig-zag Clover (<i>Trifolium medium</i>), which is present in several locations.</p> <p>The damp grassland areas include plant species Marsh Bedstraw (<i>Galium paulustre</i>), Marsh Thistle (<i>Cirsium pulustre</i>) and Meadowsweet (<i>Filipendula ulmaria</i>). Black Knapweed (<i>Centurea nigra</i>), Hairy Sedge (<i>Carex hirta</i>), Red Bartsia (<i>Odontites verna</i>) and Agrimony (<i>Agrimona eupatoria</i>) occur frequently.</p>		
<b>Species of interest: Common Name</b>  PEPPER-SAXIFRAGE ZIG-ZAG CLOVER		<b>Species of interest: Scientific Name</b>  <i>Silaum silaus</i> <i>Trifolium medium</i>
<b>Management Recommendations:</b>  <b>LATE CUT ONLY</b> (September) and grass cuttings removed where possible		

## Appendix 2 – Maps on location of plant species from local West Sussex County Council Highways Engineer

