

**VEGETATION SURVEY  
OF THE  
PROPOSED WET WOODLAND CREATION AREA  
AT  
KNEPP CASTLE ESTATE**

***DOLPHIN ECOLOGICAL SURVEYS  
2007***

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## **1.0 BACKGROUND**

A survey of the vegetation of approximately 1.5ha of land at grid reference TQ151210, immediately to the west of Tenchford Bridge on the Knepp Castle Estate in West Sussex, was carried out by Kate Ryland of Dolphin Ecological Surveys on 24<sup>th</sup> May 2007 in warm, dry weather conditions.

A sketch map of the site showing the main habitats, vegetation zones and features is given at the end of this report. Casual observations of fauna were also made during the vegetation survey.

Plant species lists were compiled for each of the three separate sections of the site (see below) and a measure of the abundance of each species is given on the DAFOR scale where D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare and L = Locally. The plant species lists are inevitably subject to seasonal bias since the survey took place on only one day in the early part of the field season however, the lists are likely to reflect accurately the plant communities present.

The purpose of the survey was to provide baseline information about the site before plans to create an area of wet woodland are implemented. The proposed wet woodland creation is part of much more extensive habitat enhancement and creation works taking place across the estate. The baseline survey will allow basic monitoring of vegetation changes to be undertaken in the future as the wet woodland habitat develops.

It is recommended that a series of fixed-point photographs should be taken of the area to record changes in vegetation structure over time. More rigorous and detailed monitoring of vegetation change would require fixed quadrats or transects to be set up and recorded.

## **2.0 SITE DESCRIPTION**

The site is approximately rectangular in shape and comprises three distinct vegetation zones; horse grazed pasture to the north and west of the stream, an area of former poplar plantation that was felled in winter 2006/7 to the south and east of the stream and the Lancing Brook itself which separates the two halves of the site (see sketch map). Separate plant species lists were made for each zone though inevitably there is an overlap of species recorded and the vegetation communities in the three areas described.

Lancing Brook runs through the centre of the site and also forms part of the southern boundary. Swallows Lane and Tenchford Bridge lie to the east of the site. There is a patchy roadside hedge of predominantly blackthorn adjoining the eastern edge of the pasture and a more diverse section of hedge with some hawthorn, ash and field maple adjacent to the former plantation.

There is a tall, unmanaged mixed hedgerow with blackthorn, field maple, hawthorn, ash, elder, dog rose and bramble along the northern/western edge of pasture. Mature oak trees are present at each end of this hedgerow.

A further mature and unmanaged hedgerow is present along eastern edge of the former plantation. This hedge comprises ash, blackthorn, grey willow, field maple, spindle, hawthorn and oak. It grades into a more patchy line of trees and shrubs on a distinct bank in the south of the area.

### **2.1 Pasture**

The pasture has a largely improved, species-poor, grass-dominated sward of varied heights. At the time of the survey a single horse was present in the field. Parts of the sward were grazed and other areas mown to a height of approximately 10cm but elsewhere the grass was tall and lush and approximately 60cm in height.

The pasture has two small, shallow wet flushes at the eastern end where lesser spearwort and floating sweet-grass are prominent. A single plant of the uncommon tubular water-dropwort was observed near the flushes in the pasture. This species is listed as “vulnerable” on the latest Red Data List (*The Vascular Plant Red Data List for Great Britain* (2005) ed. Cheffings and Farrell), though it is not considered sufficiently scarce in Sussex to warrant inclusion in the Sussex Rare Plant Register (2001 ed. Mary Briggs).

The majority of the pasture supports common grasses and herbaceous species including creeping bent, foxtails, perennial rye-grass, Yorkshire fog, meadow grasses and buttercups.

## **2.2 Former poplar plantation**

Within the former plantation area there are numerous poplar stumps and piles of brash and deadwood. Many of the stumps cut the previous winter were re-sprouting vigorously in spring 2007. The area supports a varied and structurally diverse flora ranging in height from bare ground areas to around 100cm.

There are some distinct variations in the vegetation across this area, which includes a combination of woodland, wetland and grassland plant species along with patches of ruderal vegetation. This variety of flora and the presence of a well-developed wetland assemblage suggest that the area was wetland or wet grassland prior to the poplar trees being planted. The surrounding habitats, particularly the mature hedgerows, which appear to be long established, will also exert an influence on the vegetation found in this area and the hedgerows are likely to be the sources of the typically woodland species recorded.

Relict woodland ground flora species, including dogs mercury, lesser celandine, lords and ladies, bluebell, wood avens, three-veined sandwort and black bryony, were noted at both the northern and southern ends of the former plantation. At the southern tip of this area the ground layer is quite grassy and appears to have relatively undisturbed soils, unlike most of the former plantation where ground disturbance is common.

The southern boundary is marked by a fence and partially reinforced bank where oak, hawthorn, field maple, holly and elder grow. The bank supports several typical woodland ground flora species including bluebell and three-veined sandwort.

The central section of the former plantation has the highest density of tree stumps and deadwood, the most disturbed soil and generally supports coarse vegetation with an abundance of nettle, cow parsley, common cleavers, docks, goosefoot, sow-thistle, crosswort and grasses such as rough meadow-grass.

On the edges of the central, coarse area there are two zones where wetland species are predominant. Hemlock water-dropwort is abundant in these sections along with other species typical of wetland habitats including purple loosestrife, yellow flag, greater pond-sedge, reed canary-grass, marsh woundwort, wild angelica, meadowsweet, water mint, soft rush, brooklime, water chickweed, common marsh bedstraw, ragged robin, common reed and gipsywort.

## **2.3 Lancing Brook and banks**

The Lancing Brook, which separates the pasture and former plantation areas, varies between 1-2m wide and has grassy, steep banks with abundant nettle. Many of the plants recorded on the banks (taken to extend to the break of slope at the banktop) also occur in the surrounding habitats. The stream has very uniform, engineered banks and there was little water flow at the time of the survey.

The stream itself has a varied emergent flora with frequent reed canary-grass, branched bur-reed and hemlock water-dropwort. Yellow water-lily occurs in places in the channel and both fat duckweed and common duckweed were observed on the water's surface.

There are some scattered stands of blackthorn and occasional willows on the stream banks and patches of common reed occur near the stream within the former plantation.

### 3.0 SURVEY RESULTS

#### 3.1 Pasture area

<i>Achillea millefolium</i>	Yarrow	R
<i>Agrostis stolonifera</i>	Creeping bent	FLA
<i>Alliaria petiolata</i>	Garlic mustard	R
<i>Alopecurus geniculatus</i>	Marsh foxtail	FLA
<i>Alopecurus pratensis</i>	Meadow foxtail	ALD
<i>Anthriscus sylvestris</i>	Cow parsley	O
<i>Arrhenatherum elatius</i>	False oat-grass	RLO
<i>Bromopsis sterilis</i>	Barren brome	OLF
<i>Bromus hordeaceus</i>	Soft brome	R
<i>Calystegia sepium</i>	Hedge bindweed	R
<i>Carex hirta</i>	Hairy sedge	R
<i>Cirsium arvense</i>	Creeping thistle	R
<i>Cruciata laevipes</i>	Crosswort	RLO
<i>Dactylis glomerata</i>	Cocks-foot	R
<i>Dipsacus fullonum</i>	Teasel	R
<i>Elytrigia repens</i>	Common couch	O
<i>Equisetum arvense</i>	Field horsetail	R
<i>Galium aparine</i>	Common cleavers	O
<i>Geranium dissectum</i>	Cut-leaved cranesbill	O
<i>Glechoma hederacea</i>	Ground-ivy	R
<i>Glyceria fluitans</i>	Floating sweet-grass	R
<i>Holcus lanatus</i>	Yorkshire fog	OLF
<i>Juncus effusus</i>	Soft rush	R
<i>Lolium perenne</i>	Perennial rye-grass	FLA
<i>Oenanthe crocata</i>	Hemlock water-dropwort	RLO
<i>Oenanthe fistulosa</i>	Tubular water-dropwort	R
<i>Persicaria maculosa</i>	Redshank	R
<i>Phalaris arundinacea</i>	Reed canary-grass	RLO
<i>Plantago major</i>	Greater plantain	R
<i>Poa annua</i>	Annual meadow-grass	LF
<i>Poa trivialis</i>	Rough meadow-grass	FLA
<i>Ranunculus acris</i>	Meadow buttercup	O
<i>Ranunculus flammula</i>	Lesser spearwort	RLO
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Rumex crispus</i>	Curled dock	R
<i>Rumex obtusifolius</i>	Broad-leaved dock	O
<i>Sison amomum</i>	Stone parsley	R
<i>Taraxacum agg.</i>	Dandelion	R
<i>Trifolium repens</i>	White clover	R
<i>Urtica dioica</i>	Nettle	RLO

#### 3.2 Former poplar plantation

<i>Acer campestre</i>	Field maple	R
<i>Agrostis stolonifera</i>	Creeping bent	F
<i>Alliaria petiolata</i>	Garlic mustard	OLF
<i>Alopecurus geniculatus</i>	Marsh foxtail	O
<i>Alopecurus pratensis</i>	Meadow foxtail	F
<i>Angelica sylvestris</i>	Wild angelica	OLF
<i>Anisantha sterilis</i>	Barren brome	OLF
<i>Anthriscus sylvestris</i>	Cow parsley	FLA

<i>Arctium minus</i>	Lesser burdock	O
<i>Arrhenatherum elatius</i>	False oat-grass	O
<i>Arum maculatum</i>	Lords and ladies	R
<i>Barbarea vulgaris</i>	Common Wintercress	R
<i>Bromus hordeaceus</i>	Soft brome	OLF
<i>Calystegia sepium</i>	Hedge bindweed	OLF
<i>Capsella bursa-pastoris</i>	Shepherds purse	R
<i>Cardamine flexuosa</i>	Wavy bittercress	O
<i>Cardamine pratensis</i>	Cuckoo-flower	OLF
<i>Carex riparia</i>	Greater pond sedge	LF
<i>Chenopodium sp.</i>	Goosefoot sp.	LA
<i>Cirsium arvensis</i>	Creeping thistle	RLO
<i>Cirsium vulgare</i>	Spear thistle	O
<i>Conium maculatum</i>	Hemlock	LF
<i>Cruciata laevipes</i>	Crosswort	F
<i>Dactylis glomerata</i>	Cocks-foot	O
<i>Deschampsia cespitosa</i>	Tufted hair-grass	O
<i>Dipsacus fullonum</i>	Teasel	R
<i>Epilobium hirsutum</i>	Great willowherb	O
<i>Epilobium spp.</i>	Willowherb spp.	F
<i>Euonymus europaeus</i>	Spindle	R
<i>Filipendula ulmaria</i>	Meadowsweet	F
<i>Galeopsis tetrahit</i>	Common hemp-nettle	R
<i>Galium aparine</i>	Common cleavers	FLA
<i>Galium palustre</i>	Common marsh bedstraw	O
<i>Geranium dissectum</i>	Cut-leaved cranesbill	O
<i>Geum urbanum</i>	Wood avens	R
<i>Glechoma hederacea</i>	Ground-ivy	OLF
<i>Glyceria fluitans</i>	Floating sweet-grass	LO
<i>Hedera helix</i>	Ivy	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Holcus lanatus</i>	Yorkshire fog	OLF
<i>Hyacinthoides non-scripta</i>	Bluebell	R
<i>Hypochaeris radicata</i>	Common cats-ear	R
<i>Iris pseudacorus</i>	Yellow flag	O
<i>Juncus effusus</i>	Soft rush	O
<i>Lapsana communis</i>	Nipplewort	O
<i>Lolium perenne</i>	Perennial rye-grass	O
<i>Lychnis flos-cuculi</i>	Ragged robin	O
<i>Lycopus europaeus</i>	Gipsywort	R
<i>Lythrum salicaria</i>	Purple loosestrife	O
<i>Mentha aquatica</i>	Water mint	OLF
<i>Mercurialis perennis</i>	Dogs mercury	LF
<i>Moehringia trinervia</i>	Three-veined sandwort	LO
<i>Myosotis aquatica</i>	Water chickweed	R
<i>Myosotis laxa</i>	Tufted forget-me-not	O
<i>Oenanthe crocata</i>	Hemlock water-dropwort	ALD
<i>Persicaria maculosa</i>	Redshank	O
<i>Phalaris arundinacea</i>	Reed canary-grass	OLA
<i>Phragmites australis</i>	Common reed	LA
<i>Picris echioides</i>	Bristly ox-tongue	R
<i>Plantago major</i>	Greater plantain	R
<i>Poa annua</i>	Annual meadow-grass	LF
<i>Poa trivialis</i>	Rough meadow-grass	A
<i>Poplar x</i>	Hybrid poplar	O

<i>Prunus spinosa</i>	Blackthorn	OLF
<i>Quercus robur</i>	Pedunculate oak	R
<i>Ranunculus ficaria</i>	Lesser celandine	F
<i>Ranunculus repens</i>	Creeping buttercup	OLF
<i>Rosa canina</i>	Dog rose	R
<i>Rubus fruticosus</i> agg.	Bramble	OLF
<i>Rumex crispus</i>	Curled dock	OLF
<i>Rumex obtusifolius</i>	Broad-leaved dock	OLF
<i>Salix cinerea</i>	Grey willow	O
<i>Sambucus nigra</i>	Elder	R
<i>Scrophularia nodosa</i>	Common figwort	O
<i>Senecio jacobaea</i>	Common ragwort	R
<i>Senecio vulgaris</i>	Groundsel	O
<i>Sison amomum</i>	Stone parsley	R
<i>Sonchus asper</i>	Prickly sow-thistle	OLF
<i>Sonchus oleraceus</i>	Smooth sow-thistle	O
<i>Stachys palustris</i>	Marsh woundwort	LO
<i>Stachys sylvatica</i>	Hedge woundwort	LO
<i>Stellaria graminea</i>	Lesser stitchwort	R
<i>Tamus communis</i>	Black bryony	R
<i>Tripleurospermum inodorum</i>	Scentless mayweed	R
<i>Urtica dioica</i>	Nettle	FLA
<i>Veronica beccabunga</i>	Brooklime	LO
<i>Veronica hederacea</i>	Ivy-leaved speedwell	R
<i>Vicia cracca</i>	Tufted vetch	R
<i>Viola odorata</i>	Sweet violet	LF

### 3.3 Lancing Brook and banks

<i>Acer campestre</i>	Field maple	R
<i>Achillea millefolium</i>	Yarrow	R
<i>Agrostis stolonifera</i>	Creeping bent	F
<i>Alisma plantago-aquatica</i>	Common water-plantain	R
<i>Alopecurus pratensis</i>	Meadow foxtail	F
<i>Angelica sylvestris</i>	Wild angelica	O
<i>Anthriscus sylvestris</i>	Cow parsley	O
<i>Apium nodosa</i>	Fools watercress	R
<i>Barbarea vulgaris</i>	Common wintercress	R
<i>Calystegia sepium</i>	Hedge bindweed	A
<i>Carex riparia</i>	Greater pond sedge	LF
<i>Cirsium arvense</i>	Creeping thistle	O
<i>Cruciata laevipes</i>	Crosswort	O
<i>Dactylis glomerata</i>	Cocks-foot	O
<i>Dipsacus fullonum</i>	Teasel	R
<i>Epilobium hirsutum</i>	Great willowherb	O
<i>Equisetum arvense</i>	Field horsetail	O
<i>Equisetum fluviatile</i>	Water horsetail	OLF
<i>Filipendula ulmaria</i>	Meadowsweet	O
<i>Galium aparine</i>	Common cleavers	F
<i>Geranium dissectum</i>	Cut-leaved cranesbill	O
<i>Glechoma hederacea</i>	Ground-ivy	O
<i>Hedera helix</i>	Ivy	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Holcus lanatus</i>	Yorkshire fog	OLF

<i>Iris pseudacorus</i>	Yellow flag	O
<i>Juncus effusus</i>	Soft rush	O
<i>Lemna gibba</i>	Fat duckweed	LF
<i>Lemna minor</i>	Common duckweed	LF
<i>Lolium perenne</i>	Perennial rye-grass	O
<i>Lycopus europaeus</i>	Gipsywort	R
<i>Lysimachia vulgaris</i>	Yellow loosestrife	OLF
<i>Lythrum salicaria</i>	Purple loosestrife	R
<i>Mentha aquatica</i>	Water mint	OLF
<i>Myosotis scorpioides</i>	Water forget-me-not	R
<i>Nuphar lutea</i>	Yellow water-lily	R
<i>Oenanthe crocata</i>	Hemlock water-dropwort	FLA
<i>Persicaria maculosa</i>	Redshank	O
<i>Phalaris arundinacea</i>	Reed canary-grass	F
<i>Picris echioides</i>	Bristly ox-tongue	R
<i>Poa trivialis</i>	Rough meadow-grass	A
<i>Populus x</i>	Poplar hybrid	O
<i>Prunus spinosa</i>	Blackthorn	O
<i>Ranunculus acris</i>	Meadow buttercup	R
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Rosa canina</i>	Dog rose	O
<i>Rubus fruticosus</i> agg.	Bramble	OLF
<i>Rumex obtusifolius</i>	Broad-leaved dock	O
<i>Salix cinerea</i>	Grey willow	O
<i>Scrophularia auriculata</i>	Water figwort	O
<i>Sison amomum</i>	Stone parsley	OLF
<i>Solanum dulcamara</i>	Bittersweet	R
<i>Sparganium erectum</i>	Branched bur-reed	OLF
<i>Stachys palustris</i>	Marsh woundwort	O
<i>Taraxacum</i> agg.	Dandelion	R
<i>Urtica dioica</i>	Nettle	ALD

### 3.4 Fauna observed during the survey

#### Butterflies and moths

Orange tip *Anthocharis cardamines*

Holly blue *Celastrina argiolus*

Peacock *Inachis io*

Cinnabar moth *Tyria jacobaeae*

#### Dragonflies and damselflies

Beautiful demoiselle *Calopteryx virgo*

Banded demoiselle *Calopteryx splendens*

Azure damselfly *Coenagrion puella*

Black tailed skimmer *Orthetrum cancellatum*

# *Proposed Wet Woodland Area At Knepp Castle Estate*

## *Vegetation Survey Sketch Map*

