

**BOTANICAL SURVEY  
OF  
SELECTED SPECIES-RICH GRASSLANDS  
IN THE  
WEST WEALD LANDSCAPE PROJECT AREA**

***DOLPHIN ECOLOGICAL SURVEYS  
2011***



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## **EXECUTIVE SUMMARY**

A botanical survey and assessment was carried out in late June and early July 2011 of selected circumneutral grassland in the West Weald Landscape Project (WWLP) Area. The 2011 survey was a continuation of the 2010 WWLP grassland survey and attempted to survey as many as possible of those sites that were not surveyed in 2010.

The selected sites were believed to include species-rich grassland of high biodiversity importance but recent data was not available to the WWLP Officer. The majority of the sites were considered to be of lower priority than those surveyed in 2010. Some of the areas chosen for survey had been identified as Sites of Nature Conservation Importance in the past, but most had no designation.

16 separate sites were surveyed. 12 sites were found to contain areas of particular interest with unimproved grassland vegetation (species-rich MG5, M23, U1 or plant communities) or to support notable plant species, typical of diverse grassland habitats.

The condition of the species-rich grassland sites varied and whilst some areas did receive at least some management by cutting or grazing, others were either unmanaged or received inappropriate management, such as topping with the cut material left in situ. Deterioration of the grassland plant communities was evident in all the sites with species-rich swards.

Contact with landowners was an important part of the survey and every opportunity was taken to promote the West Weald Landscape Project. Several meadow owners were found to be very enthusiastic about their grassland and keen to conserve the biodiversity of their land but were unsure of the best management regime to adopt.

## **1.0 INTRODUCTION**

This survey of a selection of grassland sites within the West Weald Landscape Project Area (WWLP) was commissioned by Rich Howorth the WWLP Manager and was carried out by Kate Ryland of Dolphin Ecological Surveys.

The survey was a continuation of the 2010 WWLP grassland survey and included most of the sites that were not visited in 2010 due to time constraints. In addition a small number of newly identified sites of potential interest were also visited.

The objective was to conduct field surveys of selected, priority sites that were believed to support species-rich dry grassland vegetation, principally of the NVC types MG5 and U4 or diverse wet grassland sites (for example M23 rush pasture), but for which no recent data was available.

The WWLP Officer provided the surveyor with a ranked list of sites for survey and a set of printed maps and aerial photographs of the sites. Where details of landownership were known, these too were provided.

The time available for the survey was limited but within this constraint the survey aimed to provide information for as many as possible of the highest priority sites. Data was collected on the botanical composition, features and plant communities of particular interest, details of management regimes and comments were made on management needs.

An equally important part of the survey was to make contact with owners of species-rich grasslands in the WWLP Area who have not already been involved with the WWLP.

## **2.0 METHODOLOGY**

The field survey work was carried out over 8 days between 21<sup>st</sup> June and 11<sup>th</sup> July 2011.

Starting with the highest priority sites, the known owner (or failing that the resident of the nearest likely property) was approached and asked for consent to survey the fields identified on the maps provided by WWLP. Contact with landowners provided an opportunity to promote the work of WWLP and stress the importance and rarity of unimproved grassland habitats whenever possible.

Some of the sites visited were either wholly or partly designated as Sites of Nature Conservation Importance (SNCIs).

The field survey methodology was based on a walkover survey of every area or field identified on the WWLP maps within individual sites. Any nearby additional fields or areas that appeared to support unimproved grassland were also surveyed where possible and in some instances landowners or managers suggested extra areas to visit.

During the walkover survey plant species lists were prepared for those fields that appeared to have some botanical interest with species abundance recorded on the DAFOR scale. Features of interest and particularly species-rich areas with their probable NVC community were plotted on the site maps. A full NVC survey was not carried out and NVC communities were not routinely mapped for vegetation of low botanical interest.

Notes on the condition and management of each field were compiled from observations in the field and discussions with landowners. Each site was given a very basic condition

assessment on a three-point scale where 1 = good, 2 = moderate and 3 = poor condition. These very subjective assessments included a number of factors including size of the site, whether fragments of species-rich grassland vegetation were present, whether the grassland was receiving appropriate management, evidence of deterioration of grassland sward and presence of problematic species. The likelihood that landowners would be receptive to an approach from WWLP officers was also included in the assessment.

Casual observations of fauna were recorded and representative digital photographs were taken of each field surveyed.

In some cases the fields visited were not of particularly high botanical interest or they were very similar to adjoining areas. In these instances a species list was not compiled.

## 3.0 RESULTS

### 3.1 Overview

Table 1 presents details of the sites that were surveyed, including location, ownership and status. A summary description of each site surveyed is contained in section 3.2.

The full species lists compiled during the survey and maps of the sites with areas of species-rich grassland identified have been submitted to WWLP for entry into the Sussex Biodiversity Record Centre database, and digital photographs of each site are stored on a CD.

In total 14 of the WWLP-identified sites were visited and at least partially surveyed and 2 additional sites were also surveyed (see Table 1).

At 3 sites on the original survey list that were visited (Park Hatch, Reeth and West of Chiddingfold) the owners either could not be found to grant access permission or was unwilling to allow the surveyor on site without supervision (Reeth). The owner at Reeth provided contact details and was subsequently visited by a volunteer surveyor for WWLP.

The owner of Pratts Corner could not be located but a brief survey of the site was made from adjoining roads and at Fittleworth and at Holywell access was gained via public rights of way or apparent de facto access. The WWLP volunteer surveyor also visited the Pratts Corner landowner later in 2011 (see appendix for additional survey data from the WWLP volunteer).

The reaction of landowners to what amounted to a “cold call” approach was very positive on the whole. Some landowners had already had contact with WWLP, WSCC, Sussex Wildlife Trust (SWT) or another conservation advisor, especially those who have land in agri-environment schemes such as HLS. Others had not heard of the WWLP but had a generally benign attitude towards nature conservation and were willing to allow the surveyor onto their land.

The quality of the grassland owned by landowners who showed enthusiasm for the scheme ranged from very poor (Stroud Row) to very good (Hawlands East) and in some cases it was necessary to spend time surveying and discussing some botanically rather dull fields in order to encourage the enthusiasm of the owners and foster good relations with WWLP.

The following grassland NVC communities of high biodiversity value were recorded during the 2011 survey:

MG5 *Cynosurus cristatus* – *Centaurea nigra* grassland

U1 *Festuca ovina* – *Agrostis capillaris* – *Rumex acetosella* grassland

M23 *Juncus effusus/acutiflorus* – *Galium palustre* rush pasture

**Table 1. Summary of Sites Surveyed**

\* Sites on the original list provided by WWLP were prioritised for survey from high to low. Two additional sites came to light during discussion with site owners and are categorised in this table as “new sites”.

Sites are broadly assessed on a scale of 1 to 3 for their conservation status. 1 = good, 2 = moderate, 3 = poor (see report text for further details).

Site Name	Grid Ref	Status	Key features	Designation	Ownership Details	WWLP priority*
Roundwyck	SU990287	1	MG5	Part SNCI C60	Mr Hicks, Roundwyck House	High
Hawlands East	SU945350	1	MG5		Mr Bill Carrigan, Catsprey (house adjacent to fields)	Medium
Steers Common	TQ080282	1	MG5	SNCI C61	Mr & Mrs Whitmore, Arnold Cottage	Medium
Lakers Green Common	TQ035357	1	MG5, meadow rue	SNCI?	NK	New site
Wisborough Green Pastures	TQ033238	1	MG5, M23	SNCI	Via Mark Howard, Ingrams Farm	Medium
Newhouse Furze	SU968321	2	Habitat creation		2 owners in Home Farm complex	Medium
Holy Well	SU997362	2	Relict MG5, M23		NK	Medium
Fittleworth	TQ014194	2	Neglected M23		NK	Low-medium
Barberry Bridge Pastures	TQ028321	2	Relict MG5	SNCI	Mr & Mrs Joules, Gennets Farm	Low-medium
Headsfoldwood Meadows	TQ031300	2	Relict U1, M23	SNCI C46	Mr Eccles, Orchard Cottage	Medium
Behind Sun Pub Dunsfold	TQ006360	3			Absentee owner	Low
Upper Sowter	SU905237	3			Cowdray Estate	Low-medium
Swan Bridge	SU963347	3	Fragment of M23		Neville Cherriman, Prestwicke Manor Farm	New site
Pratts Corner	TQ012375	3			High Loxley	Medium
Stroud Row	SU913282	3			Mrs Braithwaite, Lower House Farm	Medium
Upper Ifold	TQ005333 & TQ009336 TQ009333	3	MG5 at the White House		Mr Roger Elliott, Upper Ifold Farm (north field), south field ownership possibly changing in 2011. The White House garden	Low-medium

## 3.2 Site Descriptions

### 3.2.1 Roundwyck (part SNCI)

#### Site characteristics and NVC communities

The areas of species-rich grassland at Roundwyck form an inverted T-shape on the sides of the stream valleys that are associated with the old ironworks in the south of the site.

There is considerable variation in the swards within these valley grasslands with dry and wet areas of different aspects on a range of slopes. Anthills are present in many of the grassland areas, especially on the eastern side of the main stream. Much of the grassland is quite tussocky and in places there is a significant degree of scrub encroachment.

The site is managed by light stock grazing under the control of a grazier but there appears to be a fairly widespread deterioration of the valley grassland swards through too little grazing (both duration and stocking levels may be too low). Rabbit and deer grazing has maintained a short sward in some small areas on the eastern side of the main stream valley.

Collectively the valley grasslands are very species-rich and support the wide range of plants typical of unimproved grassland including notable species such as pepper-saxifrage, cowslip, pignut and betony.

There are many areas with intact, though tussocky MG5 vegetation that contains the characteristic herb-rich sward with species such as common knapweed, common birds-foot-trefoil, ox-eye daisy, agrimony, vetches, clovers, lesser stitchwort, fleabane, cuckoo-flower and meadow vetchling. In the wetter areas in the valley bottoms there are patches of wet grassland/fen vegetation (MG9 and M23 fragments) with species such as meadowsweet, wild angelica, common marsh bedstraw and hemlock water-dropwort.

The transitional areas between species-rich grassland and the more improved swards that occur away from the stream valleys contain a high proportion of tussocky grasses such as false oat-grass, cocksfoot and tall fescue. Tufted hair-grass is present in some of the wetter areas.

The grassland and scrub mosaics are likely to support very rich invertebrate communities as well as good populations of small mammals, amphibians and reptiles. High numbers of lepidoptera were noted during the survey despite poor weather conditions and the owner reports that adders and grass snake are present.

The woodland edge and scrub habitat throughout this area (and probably elsewhere on the property) are potentially excellent for biodiversity, especially in combination with the species-rich grassland areas.

#### Priority management recommendations

Increased grazing pressure would be beneficial in many parts of the valley grasslands to prevent the transition to coarser, tussocky swards and limit the spread of woody scrub. It might be necessary to target grazing animals in different parts of the site using mobile electric fencing to maximise the benefit to the most diverse swards.

Creeping thistle is present in some abundance in many parts of the site and should be targeted for control measures.

### **3.2.2 Hawlands East**

#### Site characteristics and NVC communities

This site comprises two fields separated by a mixed shaw and boundary bank with old beech stools.

The smaller, western field lies on a gentle east-facing slope and is a good example of MG5 unimproved grassland and supports a range of typical herbs and fine-leaved grasses such as common knapweed, common spotted orchid, betony, tormentil, ox-eye daisy, pignut, red fescue, sweet vernal-grass, field wood-rush and bent grasses. However, this field suffers from too little management and there are signs that the sward is undergoing a transition towards MG1 on the western edge where false oat-grass is locally prominent and there are scattered, planted trees adjoining the formal garden area. There is also bracken present on the field margins, which is likely to encroach onto the diverse sward in the absence of appropriate management. This field is rich in invertebrates and is surrounded by very good woodland edge habitats.

The small field is cut annually late in the season and there is evidence of quite extensive rabbit and deer grazing along with badger digging. The owner does not remove the cut material.

The larger, eastern field has a domed shape in its southern part with gentle north-facing slopes. The sward in this part of the site is semi-improved, quite coarse and grassy with a noticeably high proportion of legumes in the sward, especially common birds-foot-trefoil, vetches and meadow vetchling. The sward also includes frequent creeping buttercup, white clover, germander speedwell, lesser stitchwort and ribwort plantain along with a mixture of grasses. The field has an MG6/MG1 transitional character.

There are patches of rushes and occasional more species-rich zones in the western field where common spotted orchid, marsh thistle and common knapweed were noted. Quite extensive stands of false oat-grass in the southern half indicate a deterioration of this field due to lack of management. Whilst not of outstanding botanical interest, this field is likely to be very good for invertebrates.

#### Priority management recommendations

The landowner is very proud of his meadow and would welcome practical help with its management. There is good scope for WWLP involvement on this site.

### **3.2.3 Steers Common SNCI**

#### Site characteristics and NVC communities

Steers Common is a very diverse area of MG5 grassland surrounded by woodland. There are occasional anthills around the site and some small patches where rabbit grazing is evident.

Recent management includes spot spraying of creeping thistle, which is quite widespread in the sward, and maintaining a mown path around the site.

A good range and high proportion of MG5 grassland herbs is present including pepper-saxifrage, betony, agrimony, common knapweed, meadow vetchling, bugle, common spotted orchid, common dog-violet, red clover, lesser stitchwort, common birds-foot-trefoil and meadowsweet in wetter areas.

The sward also includes bramble and ash seedlings, which suggests that management could be enhanced.

#### Priority management recommendations

A regular hay cut and most importantly aftermath grazing management regime is needed in addition to control of creeping thistle. The site is not fenced so the ideal of aftermath livestock grazing could pose problems for the owner that WWLP might be able to help address.

### **3.2.4 Lakers Green Common**

#### Site characteristics and NVC communities

This site was not on the WWLP priority list, but is clearly an area of very species-rich grassland, easily accessible from the road, and it was therefore included in the current survey. It may well be a Surrey SNCI.

Lakers Green common lies on two sides of a minor road and comprises a diverse area of very herb-rich MG5 grassland with plants such as agrimony, betony, common knapweed, glaucous sedge, ribwort plantain, clovers, tormentil, fleabane and meadow vetchling.

The wetter flushes, ditches and the area around an old, shallow pond in the southern corner support wetland species including hemlock water-dropwort, silverweed, rushes, marsh thistle and common marsh bedstraw.

Most notable is the stand of meadow-rue on the road edge.

The area is under-managed and the presence of grey willow, hogweed and false oat-grass in the sward suggest that in recent years the common has been neglected.

#### Priority management recommendations

A management regime that includes mowing and ideally grazing is recommended to prevent deterioration of this site.

### **3.2.5 Wisborough Green Pastures SNCI**

#### Site characteristics and NVC communities

This site lies on both sides of a small stream valley and was surveyed as three separate units; the SNCI pastures on the northern side of the stream, the non-SNCI field in the north and the SNCI field to the south of the stream.

The SNCI pasture areas to the north of the stream are very varied with a range of different aspects including south- and east-facing slopes and there are numerous old anthills scattered about the site. The whole area has high levels of scrub and bracken, which are encroaching onto a dry, species-rich MG5 sward on the upper slopes. There is also an area of waterlogged ground along the bottom of the stream valley where a rather species-poor sward with a high proportion of creeping bent and creeping buttercup occurs.

Cattle have access to the site and in the western section there is a tightly grazed, very diverse sward on the remaining open grassland where plants such as wood anemone, common knapweed, betony, cowslip and devils-bit scabious occur. Rabbit grazing seems to be quite intense in the central part of this block where the sward appears to be more semi-improved and of variable quality with locally frequent clover, hawkbits and yarrow.

Coarse species such as bramble, dock and nettle appear to be encroaching into the areas of diverse sward on the edges of scrub blocks. Some scrub has been cleared recently in the southeast of this area, but considerably more scrub management is needed to prevent further loss of high value grassland.

The non-SNCI field lies to the east on the northern side of the stream. This field has a damp, poached, species-poor sward at the foot of the slope, but the drier, south-facing slope has a quite herb-rich MG5/6 sward.

The SNCI field on the southern side of the stream occupies a north-facing slope and has some encroaching scrub and trees along the stream edge and within the field. The field appears to be largely unmanaged with a tall, dense sward, but it could possibly have been awaiting a late-season hay cut.

The sward in this field is quite patchy with both dry and wet areas and some small, coarse, grass-dominated zones, but on the whole it is extremely diverse with some typical species of unimproved MG5 grassland including pepper-saxifrage, cowslip, quaking-grass and pignut.

A notable feature is the large stand of common bistort in the western end of the field. The western part of the field is much wetter than the dry slope in the east and supports an area of M23 vegetation with stands of sharp-flowered rush, common marsh-bedstraw, greater birds-foot-trefoil, oval sedge and scattered hemlock water-dropwort. Common knapweed, meadow vetchling and meadow buttercup are frequent throughout the field.

#### Priority management recommendations

This site has some excellent fragments of species-rich, unimproved grassland but is in urgent need of enhanced management to prevent deterioration of the grassland and loss through neglect, under-grazing and scrub/bracken encroachment.

### **3.2.6 Newhouse Furze**

#### Site characteristics and NVC communities

This large field has been sub-divided and subject to significant amounts of habitat creation and grassland enhancement. The field lies on a generally south-facing slope and its ownership is split between at least two owners of nearby properties in the Home Farm complex.

The northern half of the field has a grassy, improved sward that appears to resemble either MG7 or the most improved U4 sub-community. It is separated from the southern part of the site by a newly planted mixed, native hedgerow. This area was not surveyed due to its apparent lack of botanical interest.

The southern part of the field has been further divided into several areas, which are managed in different ways. There is an un-mown section of sown MG5 meadow, an area grazed by sheep, a mown area and a planted wildflower area with young trees and mown paths.

The sown meadow has a colourful sward with a high proportion of common herbs including ox-eye daisy, common knapweed, meadow vetchling, common birds-foot-trefoil, buttercups, clover, common cats-ear and occasional betony.

There is a wet area in the west of the field where reed sweet-grass is dominant within an area of improved sward.

#### Priority management recommendations

The owner of the southern part of the field is clearly keen to carry out management for biodiversity. The meadow area appears to have a rather dense thatch and would benefit from aftermath grazing (though this may be the intention in future, using the sheep that were seen on site). Contact from WWLP would probably be welcomed.

Extending the habitat enhancement and creation into the northern half of the field would be very valuable.

### **3.2.7 Holy Well**

#### Site characteristics and NVC communities

The main field prioritised by WWLP on the Holy Well site lies on the north bank of the River Rother and comprises an area of floodplain grassland with relict fen and rush pasture vegetation (M23) and a diverse pond in the northwestern corner.

The sward is patchy and has been heavily grazed by horses, leading to some poaching and high levels of docks in places. There are some relict areas of quite herb –rich sward with species such as common knapweed, meadowsweet, meadow vetchling and greater birds-foot-trefoil along with occasional wetter flushes where plants including jointed rush, gipsywort and lesser spearwort were noted. However there are also some stands of dense false oat-grass (MG1) and the eastern part of the field is generally grass-dominated and much less diverse.

The pond is a valuable feature of the site with a range of wetland species in the vicinity including common water-plantain, branched bur-reed, broad-leaved pondweed, common spike-rush, purple loosestrife, hemlock water-dropwort and willows on the northern edges.

The invasive species Indian balsam and Japanese knotweed were noted on the riverbank.

To the north of the riverside field is an area of very heavily grazed and poached horse pasture, which nevertheless retains the ghost of an MG5 sward with common knapweed, common sorrel and red clover visible despite encroaching dock, nettle and bracken.

Further up the south-facing slope is the churchyard, which has quite extensive areas of MG5 sward with a range of typical herbs including ox-eye daisy, creeping cinquefoil, common birds-foot-trefoil, ribwort plantain, agrimony, bugle, common knapweed, mouse-ear hawkweed and common dog-violet.

#### Priority management recommendations

The riverside field would benefit from a more sympathetic grazing regime and the field to its north would certainly be improved by reduced grazing pressure and weed control.

The churchyard has areas where the sward was un-mown in early July (and presumably cut at the end of the summer) but these areas could be extended across even more of the churchyard.

### **3.2.8 Fittleworth**

#### Site characteristics and NVC communities

This is a wet field which appears to be unmanaged apart from a wide path that has been mown around the outside of the site. An owner was not traced but there seems to be de facto open access to the site.

The main part of the field supports wet grassland/rush pasture (M23 vegetation) with quite large stands of creeping thistle and patches of bramble and tree seedlings indicating a lack of management and progressive drying of the sward. Part of the southern end of the field supports vegetation dominated by creeping bent with silverweed (cf MG11).

Whilst the sward is quite patchy and the edges of the field are rather coarse and locally compacted with wheel ruts, a reasonable range of wet grassland species was recorded

during a fairly brief survey including some good stands of sneezewort, common spotted orchid, lesser spearwort, sharp-flowered rush, oval sedge, marsh thistle, hairy sedge, bugle, common marsh bedstraw, silverweed and hemlock water-dropwort.

#### Priority management recommendations

This site would benefit from active management either by mowing and removal of vegetation or grazing. Ideally rotational management would be employed to maintain the good structural diversity of the site, which is likely to support a range of fauna including invertebrates, small mammals, amphibians and reptiles.

### **3.2.9 Barberry Bridge Pastures SNCI**

#### Site characteristics and NVC communities

The Barberry Bridge Pastures SNCI includes a series of floodplain fields between the eastern bank of the River Arun and the route of the disused Wey and Arun canal. At the time of the survey the fields were being grazed by a small herd of Sussex cattle.

In general the fields have quite grassy swards typical of floodplain grassland with areas of much tufted hair-grass along with extensive creeping bent (MG9). Buttercups are prominent along with white clover and widespread herbs including common sorrel, selfheal, yarrow and creeping cinquefoil. Creeping thistle is locally frequent in places and the invasive species giant hogweed and Indian balsam both occur along the riverbank.

The most diverse areas of grassland sward occur on the edge of the drier slopes of the canal embankment and in the southern part of the site (also on the drier embankment). Fragments of MG5 grassland are present in these areas with species such as common knapweed, burnet-saxifrage, common birds-foot-trefoil, meadow vetchling and bugle.

The southern field is in separate ownership but is now managed by the landowner of the rest of the SNCI. It appears that this part of the site has been neglected in the past and the sward includes areas of bramble and false oat-grass, but the cattle grazing regime should help to restore much of the valuable grassland to better condition.

The canal embankment has a diverse scrub edge, which enhances the SNCI habitat. There appear to be some semi-improved but herb-rich fields on the eastern side of the canal route (also part of Gennets Farm) and occasional plants of betony and pignut were observed on the edge of the canal scrub.

#### Priority management recommendations

Management of the SNCI is already appropriate via the current extensive cattle grazing regime. Control of invasive species on the riverbank would be beneficial, but depends on action throughout the entire river catchment to be effective.

### **3.2.10 Headsfoldwood Meadows SNCI**

#### Site characteristics and NVC communities

This SNCI comprises three linked glades within a wooded area. There is extensive tree and scrub encroachment into the grassland fragments, all of which are heavily rabbit-grazed but otherwise unmanaged. Bracken is also locally abundant in the eastern two glades.

The glade edges are excellent habitat for a range of fauna, especially invertebrates, small mammals and reptiles, but the grassland element of the site appears to be deteriorating.

The western glade has a mixed scrub margin with blackthorn, hawthorn, oak, elder, bramble etc. around a central open area with two large hawthorn shrubs. The sward in this glade

includes much white clover along with hedge bedstraw, creeping buttercup, ground-ivy, creeping cinquefoil and selfheal. Ragwort is very prominent and whilst scattered common spotted orchid and agrimony were noted, much of this area is suffering from intense levels of rabbit activity.

The central glade has an extremely short sward with a large stand of bracken, which the owner cuts annually. The mossy, rabbit-grazed sward has small areas dominated by Cladonia lichen and a much more acidic character than the western glade. Heath speedwell, tormentil, heath bedstraw, sheeps sorrel and field wood-rush all occur in this area.

The eastern glade also has a quite acidic sward and is the wettest area of the SNCI grassland. Marsh thistle and rushes are prominent in a wet flush whilst elsewhere the mossy sward contains plants such as tormentil, devils-bit scabious, common sorrel and oval sedge. Birch seedlings are encroaching into the sward in this glade and there is a large stand of bracken.

Two of the notable grassland species noted in the SNCI description, dyers greenweed and sneezewort, were not seen in the 2011 survey and it is possible that they are no longer be present on the site.

The western glade probably once had an MG5 sward, but this has now deteriorated to a point where it may not be recoverable. The central glade has an area of sward referable to U1 with W25 bracken underscrub, whilst the vegetation in the eastern glade is a mixture of relict MG5 with M23 in the wetter area.

#### Priority management recommendations

The site owner would welcome advice and assistance from WWLP with management of the SNCI grassland and with an additional area of grassland within the property boundary.

### **3.2.11 Behind Sun Pub Dunsfold**

#### Site characteristics and NVC communities

This area of grassland is surrounded by domestic gardens to the north and south with a public footpath on the western edge. The site is believed to have an absentee owner, who may intend to apply for planning permission to develop the area in future. The site was assessed from the footpath since access permission was not obtained.

The grassland has a rather coarse but flowery sward with relicts of cultivation present such as horseradish and several fruit trees. It appears that at least the eastern part of the site was an orchard at one time.

The most prominent grasses in the tussocky sward are false oat-grass, bent grasses and Yorkshire fog and whilst white clover is abundant, there are also occasional grassland herbs present including common knapweed, agrimony and ox-eye daisy. Hogweed and other bulky, tall herbs indicative of neglect were noted.

This field is likely to be of value to invertebrates and small mammals but appears to be of low botanical interest and has the MG1 vegetation typical of unmanaged grassland.

#### Priority management recommendations

The grassland would benefit from active management to promote biodiversity. It appears that the site may be occasionally mown and the cut vegetation left in situ. Removing cuttings and/or grazing the site with livestock would be beneficial.

### **3.2.12 Upper Sowter**

#### Site characteristics and NVC communities

The Upper Sowter site comprises two separate fields on either side of Easebourne Street.

The western field lies on a southeast-facing slope and is heavily horse-grazed with an improved, rather weedy sward that has been badly poached in places. Perennial rye-grass and white clover are dominant in the improved grassland of the valley floor whilst the upper slopes have a more diverse sward with a very high proportion of ragwort and bracken in places. Bramble scrub is encroaching into the field. Yarrow is locally abundant and although a range of common herbs is present, such as crossword, common knapweed, selfheal and germander speedwell, this field cannot be described as being of particular botanical interest and was not surveyed in detail.

The western field is an area of poorly managed U4 grassland.

The eastern field, which lies on a northwest-facing slope, appears to have suffered less agricultural improvement than the western field, but is unmanaged and is deteriorating due to neglect. The southern part has large stands of bracken and there are young trees becoming established in places. Bramble is also encroaching into the grassland sward.

There are good fragments of quite diverse, slightly acid grassland typically containing common bent, red fescue and sweet-vernal grass with common knapweed, yarrow, common cats-ear, common birds-foot-trefoil and common sorrel.

Elsewhere, especially in the northern part of the field, the sward is less diverse where a thatch of dead vegetation has accumulated and coarse species such as cocksfoot and Yorkshire fog are more prominent. Perennial rye-grass and white clover are locally frequent in the north of the field.

The edges of this field provide a rich ecotone and the whole area is structurally diverse and rich in invertebrate life. There is good potential for reptiles on this site.

The eastern field is a mosaic of U4 grassland and stands of W25 underscrub.

#### Priority management recommendations

The eastern field does not appear to have been grazed by livestock recently and the grassland fragments are largely maintained by rabbit and deer grazing. The management priorities on this slope should be bracken control and restoration of an appropriate livestock grazing regime.

### **3.2.13 Swan Bridge**

#### Site characteristics and NVC communities

The owner of the riverside fields at Swan Bridge is the tenant farmer at Pockford Farm, which was on the original WWLP survey list. The owner recommended this area for survey instead of the Pockford Farm since he believes the latter is largely improved grassland.

The majority of the riverside grassland had been mown for hay shortly before the survey (5<sup>th</sup> July 2011) and appeared to be a semi-improved, grassy sward referable to the MG11 wet grassland community. There were some small patches of more diverse floodplain grassland with soft rush, greater birds-foot-trefoil and marsh foxtail, which could be fragments of the more uncommon MG13 community, but had been mown too recently to determine.

The most interesting part of this site was a very small area at the southern end of the riverside fields, sandwiched between the river and a wooded bank and a wet woodland area to the south.

This small, wet corner had a diverse wetland plant community including soft rush, marsh thistle, common marsh-bedstraw, redshank, jointed rush, sharp-flowered rush, lesser spearwort, water-pepper, brooklime and bog stitchwort. Creeping bent, perennial rye-grass, sweet-grasses and sweet vernal-grass were also present in some quantity. This small area contains a fragment of M23 rush pasture, which may perhaps be present elsewhere in the river floodplain.

Coarse species within the wetland included nettle and creeping thistle, whilst the invasive and non-native Indian balsam was present along the riverbank and within the wet grassland/fen area.

#### Priority management recommendations

Control of invasive and non-native species is likely to be the priority in this area. In addition to the Indian balsam in the wetland there were some extensive patches of Japanese knotweed on the riverbank along with stands of snowberry.

The wetland area appears to be left unmanaged and provides a good structural contrast to the mown riverside grassland. Occasional grazing and/or cutting of the vegetation to prevent succession to scrub or drying out would be very beneficial.

There may be other small fragments of herb-rich, wet grassland on the opposite bank of the river and further downstream. These may belong to the same landowner and further contact with him is recommended.

### **3.2.14 Pratts Corner**

#### Site characteristics and NVC communities

This site was only briefly viewed from adjacent roads as the owner was not found and there were no public rights of way across the field.

The site appears to be a damp, flushed area at the foot of a large field on a north-facing slope. Hard rush, tufted hair-grass and bracken were locally abundant and the sward appears to be quite rich in common herbs, such as creeping buttercup, meadow buttercup, marsh thistle and meadow vetchling and fine-leaved grasses, particularly bent grasses, sweet vernal-grass and crested dogs-tail. However perennial rye-grass, Yorkshire fog and white clover in abundance suggest a degree of agricultural improvement.

The site appears to support a damp MG6 community.

The owner of this field lives at the property to the south (High Loxley) and owns other fields in the vicinity. The WWLP volunteer surveyor made a follow-up visit to High Loxley later in 2011 (see appendix).

### **3.2.15 Stroud Row**

#### Site characteristics and NVC communities

The fields identified for survey at Stroud Row by WWLP were all found to be of very limited botanical interest and the owner confirmed that they all routinely receive artificial fertiliser. These fields were briefly visited and all support either MG7, MG6 or MG1 communities.

A hay field in the north of the site was recommended by the landowner as less heavily improved and was therefore surveyed. This field lies on a south-facing slope and has a rather lush, tussocky and grass dominated sward with grasses such as Yorkshire fog and Timothy very prominent and an abundance of perennial rye-grass and white clover that have clearly been sown into the existing sward. Creeping thistle is also locally prevalent, especially in the north of the field. There are some more herb-rich patches with widespread forbs such as meadow vetchling, common birds-foot-trefoil, creeping cinquefoil and common sorrel along with meadow and creeping buttercup. The hay field has a MG6/MG1 transitional sward.

The network of hedgerows, woodland and scrub at Stroud Farm appears to be of significantly more biodiversity value than the grassland areas.

Unmown margins in the hay fields and an entire small field in the south of the site have tussocky swards of value to invertebrates.

### **3.2.16 Upper Ifold**

#### Site characteristics and NVC communities

The owners of the two fields comprising the Upper Ifold site were not at home at the time of the survey visit, though neighbours were able to confirm that the northern field is owned by Mr Elliott. The southern field may be changing hands in 2011 to the owner of Upper Ifold House. Both areas were viewed from adjoining rights of way only.

The northern area is a re-sown *Lolium* ley of negligible biodiversity interest. Giant hogweed is present in the ditch on the eastern side of the northern area of grassland.

The southern field has a large area of hard-standing present within an area of unmanaged grassland with a tall, apparently coarse sward. Signs of invasive trees, bramble and shrubs were observed. A path had been mown around the edge of the field.

An additional, very small area of grassland behind The White House was visited briefly with the consent of the householder. This small fragment of herb-rich grassland is managed as a meadow by the owners, though they are struggling with its management. The sward is relict MG5 with patches of betony, pignut, tormentil and fine-leaved grasses but with quite frequent white clover.

Species lists were not compiled for this site since the main 2 areas appeared to be of poor quality.

#### Priority management recommendations

The White House owners may contact WWLP for advice/assistance with hay collection on their site.

## 4.0 DISCUSSION

Previous ecological and botanical surveys over many years have identified most of the unimproved grassland sites in the county and the best of these sites have been designated as either Sites of Special Scientific Interest (SSSI) or SNCIs.

There are, however, always a few fragments of valuable species-rich grassland habitat that slip through the net and some sites known to be of value in the past have not been re-visited for years.

During the 2010 WWLP grassland survey many of the fields surveyed supported at least some areas of species-rich grassland sward and some significant areas of apparently un-designated unimproved grassland were recorded.

The 2011 WWLP grassland survey found far fewer sites with areas of species-rich and unimproved grassland, but nevertheless there were some areas of valuable grassland confirmed or discovered.

The best fields are highlighted in Table 1 and whilst ranking the sites on a three-point scale is very simplistic, perhaps the most significant new/re-finds are the valley grasslands at Roundwyck, the western meadow at Hawlands East and Lakers Green common. The SNCI grassland at Steers Common and at Wisborough Green Pastures was also confirmed as retaining some interest.

The survey was subject to constraints, as is always the case. The prioritised list of sites was based on several different sources, including some quite old data, but served to direct survey effort towards potentially good grassland. In the limited time available not all of the potential sites could realistically be visited, but by the end of the 2011 survey only 5 sites of low-medium or low priority from the original list were either not visited or eliminated from the survey for some other reason.

The weather and seasonal conditions in 2011 were much more conducive to meadow surveying than was the case in 2010, when seasonal constraints were severe. 2011 was also very dry in the southeast of England, but an earlier start to the surveying and a cool spell in May/June meant that most of the grassland sites were in much better condition than in the year before. Few sites had been harvested for hay and in fact many of the areas surveyed were un-managed or under-managed, which is problematic for the vegetation but quite helpful for surveying purposes.

The best of the circumneutral, unimproved grassland vegetation communities in this part of the West Sussex Weald fall within the MG5 classifications of the National Vegetation Classification (NVC) (Rodwell 1992), though on sandier soils there are occasionally good examples of U1 or U4 vegetation. In wet areas the often diverse but variable rush pasture/fen community M23 was observed on a few sites.

The species lists reveal a similar suite of plant species to be present in many of the fields, which is typical of MG5 grasslands where the characteristic assemblage of common species is more diagnostic of the community than the presence of rarities.

The late-June start to the survey introduced a seasonal bias in the plants recorded. In particular early season meadow specialities that could have been encountered in unimproved grassland (such as adders-tongue or green winged orchid) will not have been evident.

In conclusion, baseline surveying in order to ensure that all the remaining fragments of valuable species-rich grassland are documented is an ongoing task, which always seems to turn up at least a few fragments of diverse grassland habitat.

However, ensuring appropriate management to conserve the best fragments that have already been identified is perhaps even more important, especially as land ownership changes. Agricultural improvement is almost certainly now less of a threat to unimproved grassland habitats than well-meaning neglect.

In addition to documenting some very good areas of species-rich grassland and identifying sites where management of diverse grassland could be improved, a valuable outcome of this survey was to make contact with new meadow owners in the WWLP Area.

## **REFERENCES**

Dolphin Ecological Surveys, 2010. Survey of Selected Species-rich Grasslands in the West Weald Landscape Project Area. Unpublished report to WWLP.

Rodwell, J.S. (ed.) 1992. British Plant Communities Volume 3. Grassland and montane communities. CUP

## **APPENDIX**

Additional survey carried out by the WWLP volunteer surveyor Sam Page

### **BOTANICAL SURVEY OF TWO SELECTED GRASSLAND SITES IN THE WEST WEALD LANDSCAPE PROJECT AREA**

#### **SUMMARY**

Botanical surveys of two circumneutral grassland sites in the West Weald Landscape Project (WWLP) area were carried out by volunteer wildlife surveyor, Sam Page, in August 2011. The two sites Pratts Corner, High Loxley (grid reference TQ013371) and Reeth (grid reference SU911289) had been selected by WWLP and ranked as medium and medium-low priority respectively.

The surveys were carried out very late in the field season so early-flowering plants may have been overlooked, thus affecting the survey results. Severe drought conditions during spring and winter may also have affected species composition.

The grasslands at both sites are being managed as grazing pasture and were found to be moderately diverse overall. At both sites, topographical and hydrological variation produces different species assemblages and habitat structures, thus increasing overall biodiversity. Possible under-management may be impacting negatively on the sward in some areas.

At both sites, landowners responded positively to the survey and requested copies of the final report and species lists. The owners were enthusiastic and keen to conserve the biodiversity of their grasslands where possible. The West Weald Landscape Project was promoted and both landowners gave their permission to be contacted by the project.

#### **1. INTRODUCTION**

Botanical surveys of two grassland sites within the West Weald Landscape Project (WWLP) area were carried out in August 2011 by volunteer wildlife surveyor, Sam Page, under the supervision of WWLP Manager, Rich Howarth. The surveys followed on from work carried out by Kate Ryland who was commissioned by WWLP to survey a selection of grassland sites ranked in order of priority relating to potential species-richness and conservation value.

Due to time constraints, Kate was not able to survey all of the identified sites. Sam Page therefore agreed to survey the remaining 9 sites over the summers of 2011 and 2012 as a volunteer. It was agreed that Sam would aim to follow Kate Ryland's survey methodology as closely as possible.

The WWLP objective was to conduct field surveys of selected grassland sites that were believed to support species-rich dry grassland vegetation but for which no recent data was available. The surveyor was provided with a list of sites for survey, a set of printed maps and aerial photographs of the sites and landownership details where known. Data was collected on the botanical composition, features and plant communities of particular interest and details of management regimes. An equally important part of the survey was to make contact with owners of species-rich grasslands who had not already been involved with the WWLP.

#### **2. METHODOLOGY**

The field survey work was carried out during dry weather on 10/08/11 (Reeth) and 18/08/11 (Pratts Corner). Landowner details for these two sites had been passed to the surveyor by WWLP via Kate Ryland. The owners were approached for consent to survey the fields

identified on the maps provided by WWLP. In both cases, landowners responded very positively and chose to accompany the surveyor on part or all of the walkover survey. This gave the opportunity to promote the work of WWLP and stress the importance and rarity of unimproved or semi-improved grassland habitats.

At both sites, landowners provided the surveyor with useful information about past and current management practices and directed the surveyor to additional fields which were more species-rich. In the case of Pratts Corner, the landowner at High Loxley suggested surveying Jewingshurst field instead of the originally identified field (Pratts Corner) due to the low botanical interest and poor management (over-grazing, herbicide and fertiliser application) of the latter. A further field was also surveyed at Reeth on suggestion by the landowner (Field 1).

The field survey methodology involved a walkover survey of the selected fields. During the walkover survey, plant species lists were prepared with species abundance recorded on the DAFOR scale. (NB. Question marks in parentheses follow any plant species that could not be verified.) At Reeth, quadrats (4m x 4m) were also used to help the surveyor focus in on the less visible species in the sward. This method was not adopted at Pratts Corner as the surveyor was assisted by two other volunteers, Sandra Mills and Laura Henderson, which enabled a more comprehensive walkover survey to be carried out within the allotted time.

A site map with target notes identifying features of interest or particularly species-rich areas was drafted during the survey. Notes on the condition and management of each field were compiled from observations in the field and discussions with landowners. The key management features noted in each field were based on the standard condition assessment protocol used by Natural England to assess SSSIs, for example the presence of positive and negative indicator species. These management features are summarised in Table 2. Casual observations of fauna were recorded and digital photographs were taken. In cases where the fields visited were not of particularly high botanical interest or they were very similar to adjoining areas, a complete species list was not compiled.

### **3. RESULTS**

#### **3.1 Overview**

Table 1 presents details of the fields that were surveyed, including location, ownership and status. Table 2 summarises information about the management and condition of each field. Key plant species (those often associated with unimproved grassland or with a long history of continuous management) recorded during the survey are highlighted in Table 1. A summary description of each field surveyed is also provided. Full species lists compiled during the survey are in a separate spreadsheet.

**Table 1. Summary of Sites Surveyed**

\* Sites on the original list provided by WWLP were prioritised for survey from high to low. Some additional fields came to light during discussion with site owners and are categorised in this table as “new fields”.

Site Name	Field(s)	Grid Reference	Notable species	Conservation designation	Ownership details	WWLP priority
Pratts Corner (High Loxley)	Pratts Corner	TQ01253470	Not surveyed	None	Jean Stevenson, High Loxley	Medium
	Jewingshurst field	TQ01573701	Sneezewort, devil's-bit scabious	None	Jean Stevenson, High Loxley	New field (suggested by owner)
Reeth	1	SU91282885		None	Ros & Caroline Reith, Reeth	New field (suggested by owner)
	2	SU91212891	Tormentil, Devil's-bit scabious	None	Ros & Caroline Reith, Reeth	Low-medium
	3	SU91152893	Devil's-bit scabious	None	Ros & Caroline Reith, Reeth	Low-medium

**Table 2. Management Condition and Comments**

Site name	Field(s)	Level of management	Grazing/hay cut/mown	Other management comments	Positive indicators	Negative indicators	Excessive litter layer	Overall condition & approx. NVC
Pratts Corner (High Loxley)	Pratts Corner  (NB. Walkover survey not carried out)	Over-grazed	Cattle & sheep grazed May-Oct (sheep from late Aug). Sward very short.	Field managed by tenant farmer. Recently sprayed with Round-up herbicide. History of fertiliser use. Excessive poaching near gate.  Anthills present.		Abundant dock.	No	Poor
	Jewingshurst field	Possibly slightly undermanaged	Cattle & sheep grazed July-Oct.	Field managed by tenant farmer. No fertiliser or herbicide improvements for last 7 years. Some poaching near trough in northern section.  Frequent anthills throughout.	Most herb-rich in eastern section and around wet flushes. Sneezewort concentrated in wet areas in north of field and southwest corner.	Bracken encroachment in western section and along northern edge. Small area of oak seedling establishment near eastern boundary. Creeping thistle frequent throughout.	No	Moderate  MG1/MG5 M23
Reeth	1	Possibly slightly undermanaged	Sheep grazed.	Field topped once a year. Some herbicide spraying and ragwort-pulling. Rabbit control.	Better quality sward in eastern section.	Coarse grasses locally abundant and spreading e.g. false oat-grass. Bracken	No	Moderate  MG1/MG5

						encroachment in southeast corner.		
Reeth	2	Adequate	Horse & sheep grazed.	Drainage ditch running south through field dug out 8 years ago.  Field topped once a year. Spot-spraying weed control & ragwort-pulling.	Patches of herb-rich sward. Unimproved wet grassland indicator species found in ditch area.	Perennial ryegrass locally frequent in north.	No	Moderate  MG5/MG6
	3	Fenced northern section over-grazed.  Full survey not carried out	Northern section fenced for horse grazing in summer – very short sward. Rest of field sheep grazed	Field topped once a year. Spot-spraying weed control & ragwort-pulling. Some bracken control	Patches of herb-rich sward.	Bracken encroachment near eastern boundary.	No	Moderate

## **3.2 Pratts Corner, High Loxley**

The field selected by WWLP for survey was Pratts Corner, located northwest of High Loxley farmhouse. However, a full botanical survey of this field was not carried out due to its low botanical interest (resulting from over-grazing, fertiliser and herbicide treatment) and very short sward. A brief description of the field is included below.

On the landowner's suggestion, Jewingshurst field was surveyed instead – a much less intensively managed field which holds significantly more botanical interest, situated southeast of the farmhouse.

### **3.2.1 Pratts Corner field**

Pratts Corner is a sizeable (6ha) field on a slight north-facing slope. It is bounded by a thin strip of woodland to the north, a good quality mature hedgerow to the east and a poor, gappy hedgerow and fence to the southwest. The field is managed by a tenant farmer and heavily grazed by cattle and sheep. The sward is extremely short sward and there is excessive poaching in places. The field had recently been sprayed with Round-up herbicide at the time of survey and has a history of fertiliser treatment which has impacted negatively on the grassland's biodiversity.

### **3.2.2 Jewingshurst field**

Jewingshurst field lies on a gentle south-facing slope and is approximately 3.8ha in size. The field is topographically varied with several wet flushes and a ditch which divides the lower section of the field (marked as field boundary on OS map). The wetter areas support a range of wetland plants, most notably sneezewort, which is associated with unimproved meadows and occurs in sizeable stands in the northern section of the field and southwest corner near the ditch, where common fleabane is also locally abundant. Other wetland plants occurring in the ditch include common marsh-bedstraw, marsh thistle, mint sp. and wild angelica. Rushes including compact rush, hard rush and sharp-flowered rush tend to dominate the damp area in the north and are scattered in the southwest corner.

Common knapweed is frequent throughout Jewingshurst field but particularly prominent in the central area and southwest corner. Red clover and common bird's-foot-trefoil are also abundant throughout, with frequent lesser stitchwort, creeping buttercup and meadow buttercup. The drier, eastern section of the field is generally more species-rich, supporting a range of forbs including cat's-ear, beaked hawks-beard, yarrow, agrimony, common centaury, meadow vetchling, selfheal, germander speedwell, common mouse-ear, lesser hawkbit, rough hawkbit, ribwort plantain, hop trefoil and common sorrel. Hedge bedstraw, creeping cinquefoil and vetches (e.g. tufted, common) are also locally frequent in this area.

The sward supports a range of grasses including common bent, black bent, meadow foxtail, Yorkshire fog, fescue spp., cock's-foot and false oat-grass. In general, no single species appears to dominate and fine-leaved grasses such as common bent are frequent to locally abundant. However, there are patches where coarser grasses (e.g. false oat-grass) are developing, causing the quality of the sward to deteriorate. Other negative indicators suggesting a recent history of under-management include frequent creeping thistle (most prominent in the central area) and stands of bracken along the field edges in the west, south and north which are encroaching into the grassland. Prolific oak seedling establishment near the eastern boundary threatens the herb-rich sward in the drier eastern area. These issues are likely to become problematic and reduce the overall quality of the grassland in the future without some control.



**Figure 1: Northern section of Jewingshurst field, looking towards northeast corner (stands of sneezewort and rushes in foreground)**

Scrub and scattered trees are found in the western section of the field which, together with the surrounding mature hedgerows, add to the ecological value of the site. Woody species in this area include willow and gorse scrub (near ditch), holly, blackthorn and hazel, among mature ash and oak standards. Bracken is encroaching but relict woodland ground flora can still be found such as locally frequent common hemp-nettle, herb-robert, violet sp. and wood avens. The area also supports spring-flowering plants such as primrose and bluebell (landowner pers. com.).

Anthills are frequent throughout the field. Anthills are associated with a long history of grazing and provide valuable microhabitats with drier and warmer soil conditions, resulting in a greater diversity of flora and fauna. They provide an important food source for Green Woodpecker (seen foraging in the field during the survey) and basking sites for butterflies and reptiles. Several common grassland butterflies (e.g. common blue, meadow brown) were recorded during the survey.

### **3.3 Reeth**

Three fields of linked grassland (approx 2.5ha, divided by fencing) were surveyed at Reeth. In addition to the two main fields identified by WWLP, the field to the east of these (Field 1) was also surveyed on suggestion of the landowner. The small area immediately southwest of the house identified for survey by WWLP was not surveyed as it is a part of the domestic grounds.

### 3.3.1 Field 1

Field 1 lies on a south-facing slope and supports a mosaic of sand and clay soils, dry areas and wet flushes. The field is sheep grazed and topped once a year. There is a fenced-off sanded horse arena (approx 850m<sup>2</sup>) in the centre of the field. Field 1 is bounded in the north by a fence which separates it from a smaller area of less species-rich, sheep-grazed grassland which was not surveyed due to its low botanical interest. Mature broad-leaved woodland lies east and south of the field providing excellent edge habitat. A fence dividing Fields 1 and 2 forms the western boundary.

The best quality sward is found in the drier eastern section where fine-leaved grasses (e.g. common bent, red fescue) are abundant and there is a higher proportion of herbs to grasses than elsewhere in the field, although bracken is encroaching in the southeast corner. Other prominent species in this area include abundant common bird's-foot-trefoil and frequent selfheal, smooth hawk's-beard and Yorkshire fog. False oat-grass and common fleabane are locally frequent and there is occasional red and white clover, meadow vetchling, creeping buttercup, ribwort plantain, yarrow and common knapweed.



**Figure 2: Eastern section of Field 1 at Reeth**

Damp flushes near the northern boundary and west of the horse arena are generally less species rich with coarse grasses such as false oat-grass and perennial rye-grass starting to dominate and the sward becoming tussocky. Lesser stitchwort is the most prominent herb in these wetter areas, which tend to dry out in the summer.



**Figure 3: Northern section of Field 1 at Reeth, with views of Field 2 in the background. A sanded horse arena is located in the centre of Field 1.**

In the western section, drier more species-rich areas are found north and south of the damp flush (west of horse arena). Yorkshire fog, yarrow and ribwort plantain are abundant in the northwest, with frequent cat's-ear, common bird's-foot-trefoil, common mouse-ear and red clover. To the southwest, common bent is abundant with frequent red fescue, Yorkshire fog, common knapweed, common bird's-foot-trefoil and rough hawk's-beard. The southwest corner is heavily shaded by the adjacent woodland and less species-rich.

On the southern boundary, a small area is left unmanaged and creeping thistle has been allowed to dominate. However, annual topping and weed-wiping prevents encroachment into the rest of the grassland. Ragwort is also kept under control.

A scrape in the southern section of the field provides habitat variation and an ideal basking site for reptiles. The area was scraped a year ago (to remove a soil pile dumped when the horse arena was created) and left to recolonise naturally, allowing abundant scarlet pimpernel and creeping buttercup to develop on the sandy subsoil. Spear thistle is frequent in and around this area.



**Figure 4: Recent scrape in southern section of Field 1**

Deer are known to graze in Field 1 and rabbits are controlled by the landowner. The field supports common grassland butterflies and bees as well as a large slow-worm population (landowner pers.com.).

### 3.3.2 Field 2

Field 2 lies between Fields 1 and 3 (separated by fences) on a gentle south-facing slope. Field 2 is slightly more varied and species rich than Field 1 and coarse grasses such as false oat-grass are less prominent. It is managed by horse and sheep grazing as well as annual topping and spot-spraying of weeds. The field is bounded in the south by broad-leaved woodland and sweet chestnut coppice. A fence separates the field from a domestic garden to the north.

A pond situated in the southeast corner of the garden feeds into a ditch which runs south through the eastern section of Field 2. The ditch was dug out eight years ago for drainage purposes and supports an interesting range of wetland specialist plants, adding important ecological value to the grassland. Plants recorded in and around the ditch include common marsh-bedstraw, greater bird's-foot-trefoil, lesser spearwort, brooklime, marsh thistle, corn mint, hedge woundwort, St.John's-wort sp., wall speedwell and some unidentified ferns. Rushes such as compact rush and sharp-flowered rush are locally abundant in the associated wet flushes near the ditch. There is a risk of garden and pond escapees colonising in Field 2 but this did not seem to be a significant problem at the time of survey.



**Figure 5: Dug out ditch (with small bridge) and rush-dominated associated wet flush in eastern section of Field 2**

A sandy south-facing bank in the northwest of the field has abundant yarrow, ribwort plantain and Yorkshire fog. Other plants in this area include frequent perennial rye-grass, white clover, creeping buttercup and occasional common bird's-foot-trefoil, common mouse-ear, smooth hawk's-beard, creeping thistle and dandelion. Devil's-bit scabious was recorded on the steep slope of the bank and tormentil is prominent towards the foot of the bank.



**Figure 6: Sandy bank in northwest of Field 2, with dug-out ditch in foreground**

The most herb-rich sward in Field 2 is found in the central/southern section. Here there are patches of abundant fine-leaved grasses such as common bent occurring with frequent common knapweed, common bird's-foot-trefoil and ribwort plantain and locally prominent red clover. Other plant species in this area include Yorkshire fog, perennial rye-grass, smooth hawk's-beard, common centaury, selfheal, agrimony, common and hoary ragwort (controlled by pulling), creeping buttercup, meadow buttercup, white clover, vetch spp. and common mouse-ear.

A wet flush mid-way along the western boundary is dominated by rushes including compact rush and sharp-flowered rush, with locally frequent corn mint and common marsh-bedstraw. The southwest corner of the field is less herb-rich and used to be very wet due to the presence of a spring but dried out since the field was drained.

### **3.3.3 Field 3**

Due to time constraints, a full survey of Field 3 was not carried out. The sward and species composition appeared quite similar to that of Field 2, however, although possibly less herb-rich. The northern third of the field is fenced off for horse-grazing and here the sward is extremely short (suggesting over-grazing) and appears parched. The rest of the field is grazed by sheep only. Field 3 is bounded to the east by a wet ditch and broad-leaved woodland with sweet chestnut coppice, which also extends south of the field.

Species of note found during the preliminary walk-over include patches of locally frequent devil's-bit scabious and common fleabane. There is a rush-dominated wet flush mid-way along the eastern boundary with Field 2. Corn mint and common marsh-bedstraw were also recorded in this area. There is a spring-fed ditch and associated wet flush in the southeast corner of the field. Bracken is encroaching along the western boundary and will need to be controlled.

#### **4. DISCUSSION**

All of the fields surveyed supported a moderately diverse sward and had at least some areas with a high abundance of fine-leaved grasses such as common bent and a good proportion of forbs (not including Pratts Corner field which was not surveyed due to low botanical interest). At both sites, the diverse topography and hydrology produces wet and dry areas which support different species assemblages, significantly adding to the ecological value of the grasslands. Mature hedgerows, scattered trees and scrub in Jewingshurst field at High Loxley and mature broad-leaved woodland adjacent to the fields at Reeth provide excellent edge habitat, further increasing the overall biodiversity of the sites. Negative indicators such as coarse grasses, bracken and creeping thistle are prevalent in some areas, threatening the quality of the grasslands and suggesting a recent history of under-management.

The late timing of the surveys was not ideal and introduces a seasonal bias to the survey results as early-flowering plant species (some of which are important indicators of old unimproved or good quality grassland e.g. adders-tongue fern, green winged orchid) may have been overlooked. There was limited time available to carry out in depth surveys to determine the specific plant communities, sub-communities and transitional communities present in the fields (e.g. National Vegetation Classification) which can be useful in informing future management.

A valuable outcome of this survey was to make contact with new meadow owners in the WWLP area, both of whom are keen to see the results of the survey and happy to be contacted by the project.