

WOODLAND.

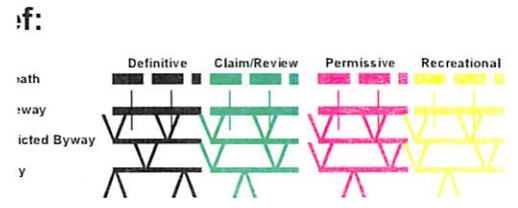
KEY

PHASE 1 HABITAT TYPES

- SI Good semi-improved neutral grassland
- Scattered broad-leaved trees species - poor defunct hedge
- fence

PHOTOS

- 1 SE 310 7837383
- 2 SE 31113 37333
- 3 SE 31129 37350



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Leeds CITY COUNCIL

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DATE: 16th AUGUST 2016

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Species list and abundancies

D	Dominant
A	Abundant
F	Frequent
O	Occasional
R	Rare
LF	Locally Frequent

Sycamore (<i>Acer pseudoplatanus</i>) stump and small trees	O
Common Bent (<i>Agrostis capillaris</i>)	LF
Creeping Bent (<i>Agrostis stolonifera</i>)	LF
Sweet Vernal-grass (<i>Anthoxanthum odoratum</i>)	O
Lesser Burdock (<i>Arctium minus</i> agg.)	R
False Oat-grass (<i>Arrhenatherum elatius</i>)	LF
Hairy Brome (<i>Bromopsis ramosa</i>)	R
Pendulous Sedge (<i>Carex pendula</i>)	R
Common Knapweed (<i>Centaurea nigra</i>)	O
Enchanter's-nightshade (<i>Circaea lutetiana</i>)	O
Cock's-foot (<i>Dactylis glomerata</i>)	F
Broad Buckler-fern (<i>Dryopteris dilatata</i>)	R
Male Fern (<i>Dryopteris filix-mas</i>)	R
Common Couch (<i>Elytrigia repens</i>)	O
Great Willowherb (<i>Epilobium hirsutum</i>)	LF
Broad-leaved Willowherb (<i>Epilobium montanum</i>)	O
Field Horsetail (<i>Equisetum arvense</i>)	R
Red Fescue (<i>Festuca rubra</i> agg.)	R
Ash (<i>Fraxinus excelsior</i>)	O
Cleavers (<i>Galium aparine</i>)	O
Herb Robert (<i>Geranium robertianum</i>)	R
Wood Avens (<i>Geum urbanum</i>)	O
Hogweed (<i>Heracleum sphondylium</i> agg.)	O
Yorkshire Fog (<i>Holcus lanatus</i>)	A
Holly (<i>Ilex aquifolium</i>)	R
Himalayan Balsam (<i>Impatiens glandulifera</i>)	O
Greater Birdsfoot Trefoil (<i>Lotus pedunculatus</i>)	LF
Timothy (<i>Phleum pratense</i>)	F
Ribwort Plantain (<i>Plantago lanceolata</i>)	O
Rough-stalked Meadow-grass (<i>Poa trivialis</i>)	LF
Garden Solomon's-seal (<i>Polygonum x hybridum</i>)	R
Tormentil (<i>Potentilla erecta</i> agg.)	O
Self-heal (<i>Prunella vulgaris</i>)	R
Meadow Buttercup (<i>Ranunculus acris</i>)	O
Creeping Buttercup (<i>Ranunculus repens</i>)	A

Field Rose (<i>Rosa arvensis</i>)	R
Brambles (<i>Rubus fruticosus</i> agg.)	LF
Common Sorrel (<i>Rumex acetosa</i>)	F
Broad-leaved Dock (<i>Rumex obtusifolius</i>)	O
Wood Dock (<i>Rumex sanguineus</i>)	O
Elder (<i>Sambucus nigra</i>)	O
Great Burnet (<i>Sanguisorba officinalis</i>)	R
Giant Fescue (<i>Schedonorus giganteus</i>)	R
Lesser Stitchwort (<i>Stellaria graminea</i>)	R
Dandelions (<i>Taraxacum</i> agg.)	F
Lime (<i>Tilia x europaea</i>)	R
Red Clover (<i>Trifolium pratense</i>)	R
Wych Elm (<i>Ulmus glabra</i>)	R
Stinging Nettle (<i>Urtica dioica</i>)	LF
Bush Vetch (<i>Vicia sepium</i>)	LF
Soft Rush (<i>Juncus effusus</i>)	R
Common Bird's-foot-trefoil (<i>Lotus corniculatus</i>)	R

Site Description

This small rectangular field is 0.96 acres in area and occupies a north-east facing slope. It runs adjacent to Gledhow Valley Road in Chapel Allerton.

On first appearance, this grassland is characterised by tall coarse grasses, but closer inspection found quite a reasonable diversity in flowering plants.

The most abundant grass species occurring are Yorkshire fog (*Holcus lanatus*), followed by frequent cock's-foot (*Dactylis glomerata*) and Timothy (*Phleum pratense*). Common bent (*Agrostis capillaris*), creeping bent (*Agrostis stolonifera*), false oat-grass (*Arrhenatherum elatius*) and rough-stalked meadow-grass (*Poa trivialis*) are locally frequent in numbers. Other typical species include occasional common couch (*Elytrigia repens*), whilst red fescue (*Festuca rubra* agg.) is rare.

The shade provided by the mature trees at the front of the field which results in a low number of woodland species such as hairy brome (*Bromopsis ramosa*) and giant fescue (*Schedonorus giganteus*).

Flowering plants recorded include frequent common sorrel (*Rumex acetosa*) with locally frequent greater birdsfoot trefoil (*Lotus pedunculatus*) in the damper ground. Smaller numbers of common bird's-foot-trefoil (*Lotus corniculatus*), tormentil (*Potentilla erecta* agg.), self-heal (*Prunella vulgaris*), great burnet (*Sanguisorba officinalis*), lesser stitchwort (*Stellaria graminea*) and red clover (*Trifolium pratense*), common knapweed (*Centaurea nigra*) and meadow buttercup (*Ranunculus acris*) are present. Larger species include occasional Himalayan balsam (*Impatiens glandulifera*), an invasive species, as well as occasional hogweed (*Heracleum sphondylium*). Great willowherb (*Epilobium hirsutum*), creeping thistle (*Cirsium arvense*) and nettle (*Urtica dioica*) are in occasional patches in the bottom wetter part of the field and have now been hand-weeded out. Soft rush (*Juncus effusus*) is found in the boundary of the field and also indicates wet and water-logged soils.

Brambles (*Rubus fruticosus* agg.) which are found in a patch in the south-west corner possibly indicate horse manuring in the past.

Tree stumps/seedlings in the field include tree stumps of sycamore (*Acer pseudoplatanus*) in the bottom of the field, ash (*Fraxinus excelsior*), holly (*Ilex aquifolium*) and elder (*Sambucus nigra*) plus a lime (*Tilia x europaea*) and a wych elm (*Ulmus glabra*) next to the bottom fence.

At present the field boundary is a broken fence on the road-side, and barbed wire fencing on the shorter sides. The top is bordered by a tall, overgrown hawthorn (*Crataegus monogyna*) hedge. The boundary is not currently stock-proof.



Photo 1



Photo 2



Photo 3



Great burnet



Black knapweed



Great burnet



Greater birdsfoot trefoil



Tormentil

Conclusions

A lack of management has resulted in tall coarse grasses such as false oat-grass, common couch and tall bulky perennial herbs including great willowherb, broad-leaved dock, creeping thistle and stinging nettle to become more prominent. Brambles and cleavers thrive in areas of nitrogen enrichment probably caused by horse manure and also out-compete more desirable flowering species.

Grasslands in Britain

Different combinations of environmental conditions and management have created a wide range of grasslands in Britain. These can be categorised on the basis of their soil (acidic, mesotrophic or calcareous) and drainage status ('wet' or 'dry'). Grasslands can also be described as 'improved', 'semi-improved' or 'unimproved' depending on their intensity of agricultural improvement.

This field can be described as neutral, but also contains occasional tormentil which is an acid indicator species.

There appears to have been little agricultural improvement, such as use of artificial fertilizers, slurry, intensive grazing, herbicides or drainage to the field. The grassland has been mapped as 'good semi-improved neutral grassland', as 'unimproved grassland' is known to be very rare. However, great burnet, an indicator of damp, neutral, unimproved soils as well as sweet vernal grass and red fescue which are also unimproved grassland indicators which were recorded in low numbers. Brambles and Yorkshire fog possibly indicate nitrogen enrichment which is caused by horse manuring. Further information, such as management history is needed to determine to distinguish between 'improved' and 'good semi-improved'.

The field occupies a north-east facing slope and the bottom of the slope contains species which indicate impeded drainage such as creeping buttercup, creeping bent and Himalayan balsam. The mix of environmental conditions may result in increased species diversity.

Management history

Management history is important for deciding on future management of the field. Anecdotal evidence suggests the field was used as grazing pasture in the past. The field appears to have had little recent agricultural improvement with fertilizers or herbicides, but more recently it has been grazed by a horse. There was no perennial rye-grass (*Lolium perenne*) or white clover (*Trifolium repens*) recorded during the survey. These two species are typically found in reseeded and improved agricultural grasslands.

Phase 1 Habitat Survey

A Phase 1 Habitat survey is an environmental audit of the site. The aim of the survey is to provide relatively rapidly, a record of the semi-natural vegetation and wildlife habitat over large areas of countryside. Ideally, a Phase 1 Habitat Survey should be followed up by a Phase 2 survey, which defines the vegetation of selected areas more precisely in terms of its plant communities. This is also called an NVC (National Vegetation Classification) survey.

NVC (National Vegetation Classification) type

The National Vegetation Classification is a system of identifying and documenting the vegetation of all natural, semi-natural and major artificial habitats in Great Britain, using a standard description of named and logically identified and arranged vegetation types. It is accepted as a standard, not only by the nature conservation and countryside organisations, but also by forestry, agriculture and water agencies, local authorities, non-governmental organisations, major industries and universities.

A 'walkover survey' was carried out on 16th August 2016 to determine the Phase 1 Habitat types and NVC types, as well as a category of grassland, such as acidic, mesotrophic or neutral and basic soil type, drainage status and levels of agricultural improvement.

The field can be ascribed two NVC types; MG10 – Yorkshire fog – soft rush rush pasture on the damper ground at the bottom of the slope. MG9b - Yorkshire fog - tufted hair-grass grassland – false oat-grass sub-community is found on the slope itself. Both MG10 and MG9b grasslands are mesotrophic (neutral) grasslands and are widespread throughout the British lowlands.

Management recommendations

Management is to be aimed at returning the site to a more desirable state, followed by maintenance management to encourage plant and insect species diversity. Monitoring surveys should ideally take place at least every three years. An insect survey would also be useful.

As there is so little good semi-improved neutral grassland in the Leeds area it would be a great opportunity to maintain this field and to slowly increase plant diversity.

Before the influence of people, grasslands would largely have been restricted to areas where woody plants could not grow; on thin or infertile soils, where environmental conditions were harsh or in some heavily disturbed areas. From Neolithic times (4000 – 5000 years BP) our landscape has been altered through clearance of woodlands for farming, which would have allowed plants and animals from the existing grasslands to extend their range. Grazing, cutting and burning of the newly created agricultural grasslands arrested succession and in doing so, maintained suitable conditions for naturally occurring grassland plants and animals and a number of introduced species.

The aim is to try to replicate nature and to prevent succession and to stop the field turning into scrub and woodland. Already, some small saplings have been removed during Action Mornings.

There are a few different options for managing the grassland. These are as follows:

Cattle

Ideally the field should be grazed by cattle at low density during the summer. Cattle feed by wrapping their large, rasping tongue around the herbage and cutting it between their lower teeth and upper dental pad as they swing their head. They are able to consume coarser herbage than horses and will feed on taller vegetation than sheep. The advantages of using cattle, such as they are selective in the patches of vegetation they feed on, and this, together with their heavy trampling, tends to produce an uneven sward consisting of short and tall vegetation and disturbed and bare areas. These areas are generally better for insects. Store

animals, fattening beef animals and sucklers will be the most suitable cattle to use at the majority of sites.

Summer grazing is necessary to bring back species which resulted from grazing which was the original management regime.

So it would be better to be grazed in the future to continue to provide a habitat for the same suite of insect species.

Anecdotal evidence suggests that dairy cows grazed this pasture possibly 100 years ago. Therefore cattle would be the best animal to use to recreate conditions for a similar suite of insects to return to the site.

Cattle grazing would reduce tall coarse grasses and herbs, including false oat-grass, common couch and bramble, great willowherb, broad-leaved dock, creeping thistle and stinging nettle.

East Keswick Wildlife Trust may have cattle to borrow. Stock fencing with wire on top would need to be erected to keep in all types of animals.

Sheep

Sheep bite vegetation close to the ground and prefer short, fine swards to coarser grasses. Sheep grazing can therefore result in a combination of under- and over- grazing. They are therefore generally unsuitable for restorative management. Sheep cause very little trampling except on loose or sandy soils, or on steep slopes.

During the day time sheep drop their dung on specific area. At night, though, they often congregate on areas of short (and often botanically interesting) sward. Dung deposited during the night on these areas will cause nutrient enrichment which may be deleterious to the flora. Sheep are less suitable for use on wet grassland than cattle as they are more susceptible to diseases such as foot rot.

Horses and ponies

Horses and ponies can be very selective grazers and browsers and are capable of completely eliminating individual plant species from a site, so considerable care should be taken when introducing them to areas of high botanical interest.

At moderate densities horse and pony grazing tends to produce a patchy mosaic of short and tall swards. This may be a problem on sites of uniformly high botanical interest and may also lead to problems of under and over-grazing. In more complex sites or those of lower botanical interest, though, this is likely to create interesting diversity.

The structural mosaic produced by moderate horse and pony grazing will in most cases be beneficial to invertebrates, and particularly good for butterflies.

At high stocking rates, particularly in summer, horse and pony grazing can create a very short, botanically uninteresting sward interspersed with tall patches of unpalatable species such as docks (*Rumex* sp.) and common nettle. Such conditions are poor for insects. Horses usually repeatedly drop their dung in the same area, causing problems of local nutrient enrichment. These regular dunging areas are also avoided by grazing horses and ponies as they find the grass sour, with the result that they often develop stands of rank, unpalatable vegetation such as common nettle, thistles and common ragwort (*Senecio jacobaea*). Horses and ponies may be more readily available for grazing in an urban area such as Gledhow Valley Woods. As horses and ponies are herd animals they might be happier if there were two horses in the field. If so they would need to be grazing the field for less time to avoid over-grazing.

Also to be considered are that animals in general need:

- Fresh clean water available every day
- To be checked at least once a day, ideally twice a day
- A suitable fenced and stock-proof field

Hedges and Fences

Fencing with a mixed hedge planted on two short sides. The hawthorn hedge at the back of the field could be hedge-layed to make it stock-proof. The front hedge needs to be fenced with stock fencing. A hedge would not thrive under the trees on the boundary as well as the lime trees on the verge. The trees cast too much shade. Ideally, a hedge comprising a mix of species including hawthorn, blackthorn (*Prunus spinosa*), dog rose (*Rosa canina*), hornbeam (*Carpinus betulus*) and hazel (*Corylus avellana*) will attract a larger number of insect and bird species.

Also consider planting one or two other species including buckthorn (*Rhamnus catharticus*), food plant of the brimstone butterfly, holly (*Ilex aquifolium*), food plant of the holly blue butterfly, dogwood (*Cornus sanguinea*), field maple (*Acer campestre*), crab apple (*Malus sylvestris*), guelder rose (*Viburnum opulus*), field rose (*R. arvensis*), sweet-briar (*R. rubiginosa*) and certain willows (*Salix* sp.).

Try to keep some of the existing tall shrubs/saplings in the hedge as this is good for birds, as they need variations in height. If planting new trees, then a gap of 10m+ needs to be left between the trees. Consider digging a ditch next to a hedge as this provides an extra habitat.

The animals would graze for a few weeks in the summer and then be taken off. The animals would need to be taken off the field for the Fun Day and also if local natural history societies or Leeds University students visit the field.

Three photos of the field August 2016 with grid references. Also photos of great burnet, tormentil, black knapweed and greater birdsfoot trefoil with scientific names

Bees

The group has been approached by a beekeeper who would like to put bee hives on our field. Is a north-east facing slope suitable for bees? Would having bee hives in the field be a problem for when we want to let public into the field such as on Fun Day and during field trips by various groups such as amateur naturalists and students?

Conclusions

I recommend maintaining the field by scything or mowing as cattle, sheep may be stolen or even shot. At the Great Yorkshire Show in July 2016 I sought advice from a member of staff at the farm at Temple Newsom and also a member of the Rare Breed Trust who were exhibiting at the show and he advised against keeping animals in a field in the centre of Leeds.

A horse would need to be taken off the field at various times of the year as they field may become over-grazed. A horse would also need to be taken off the field during Fun Day and other days when people want to visit the site. I was advised by my friend John Scott who is a farmer north of Doncaster and a botanist with an interest and experience in developing grasslands for nature conservation that the field is small enough to 'garden'.

Mowing and Scything

A combination of mowing and scything would be the most practical method of managing the field. Cut the grass in early July with scythes or a flail.

As soon as possible start by removing Yorkshire fog dead thatch which is smothering regeneration of preferential species. This could be done with a robust rotary mower to cut rough grass in small patches or carried out manually with forks.

It is best to adopt a simplistic approach, and to begin diversification by introducing relatively tough meadow species such as oxeye daisy (*Leucanthemum vulgare*), black knapweed and yellow rattle. Since yellow rattle is parasitic on grasses, it is an important ingredient as it helps suppress the grasses, and so reduces the competition for other desirable species.

Yellow-rattle (*Rhinanthus minor*) seeds were scattered over the field in November 2016

Hand-pulling of great willowherb, creeping thistle, broad-leaved dock and Himalayan balsam needs to take place in the early summer every year. This could also be done with a mower to 'top' the docks and thistles. If possible remove the weeds from the site.

Treat tree stumps with a stump grinder or with Round Up.