Botanical Survey, Condition Report and Management Advice for High Hirst Wood Meadows- 2023

Survey carried out by Steve Hindle, June 2023

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## Summary

High Hirst Wood Meadows was surveyed in Summer of 2020 and following on from that report, a management plan was created. This survey will look to see how current management is affecting the flora. This will help to see how the current management is working and where changes may need to be made. Two new fields will be joining the project, these have been surveyed to assess current condition. The recently planted wood has also been surveyed to judge its impact on the existing habitat and assess its progress.

## Methodology

The entirety of each field was surveyed in June. The presence of each species was recorded, and each species was given a DAFOR rating. DAFOR is a method to assign an abundance rating for species where D = Dominant, A = Abundant, F = Frequent, O = Occasional and R = Rare.

Consideration was only made of the grassland areas on the fields, i.e. those areas which could be cut or grazed. In the wooded area, just the ground flora was recorded.

Results are laid out in tables showing first the "good" graminoids. This is a mix of fine and medium leaved grasses which tend not to grow tall and collapse. They do not tend to form monocultures or to blanket out other species. Within this group there are species which are less favourable, i.e. Yorkshire Fog but these are also a common constituent of any local meadow and do find a balance within the sward.

Next are the less desirable graminoids, those which have features such as, wide leaves, tendency to collapse and smother other plants, form large stands or tufts and generate large areas of thatch. In some cases, these graminoids can completely take over a meadow, substantially decreasing biodiversity.

The next tables show the forbs or flowering plants mix, again separated into those plants which mix well and those which tend to dominate or detract from the overall diversity of the meadow.

All native plants support other organisms, and some species may rely entirely on one of the less desirable species. The task is to find a balance with the presence/number and location of these species.

### Overview

The north facing site comprises two existing fields and two new fields. The meadow (0.52 ha) is dry acid species rich grassland and is currently managed with a late hay cut followed by aftermath grazing. It has a recently planted hedge down the east side and a line of fruit trees on the west side and across the top.

The western section of the meadow (0.3 ha) is planted with native trees, predominantly Hazel. There is a more established area with more recently planted trees closer to the main area of the meadow. The ground flora is predominantly species rich grassland with an area of heath at the top.

The upper pasture area (0.3 ha) has a small species rich area. There are fruit trees planted along the lower and upper edges and within the body of the field. There is a damp area used to grow willow which is fenced off. There are a few scrapes around that area, none of which held water at the time of the survey.

The new fields border the existing ones on the eastern side. The lower field is species rich dry acid grassland (0.78 ha). It has two standard trees.

The upper field (0.58 ha) has dry acid grassland areas but is much damper with a large area of rush. Between the two fields is a delipidated dry stone wall and two trees.



## Map

## The Meadow

## Grasses/Graminoids

Eleven species of grass and two Woodrush species were recorded. A total of five ancient grassland indicators

Common Name	Botanical Name	
Common Bent	Agrostis capillaris	Y
Meadow Foxtail	Alopecurus pratensis	Y
Red Fescue	Festuca rubra	Y
Rough Meadow Grass	Poa trivialis	Y
Sheep's Fescue	Festuca ovina	0
Smooth Meadow Grass	Poa pratensis	Y
Sweet Vernal Grass	Anthoxanthum odoratum	Α
Wavy Hair Grass	Deschampsia flexuosa	R
Yorkshire Fog	Holcus lanatus	Y
Field Wood Rush	Luzula campestris	А
Heath Woodrush	Luzula multiflora	F

This is a typical range of grasses for the area. Since 2020 there appears to have been an increase in finer leaved graminoids with indicator species at higher frequencies.

The less favourable graminoids are: -

Cocksfoot	Dactylis glomerata
Tufted Hair-grass	Deschampsia cespitosa

The above species can form large stands which exclude other species. They are indicators of areas which have lacked good management. Cocksfoot was present at lower density than during the 2020 survey and both False Oat Grass and Soft Rush which were present in 2020, were not recorded. Tufted Hair-grass was rare.

#### Flowering Plants/Forbs

Twenty two species of flowering plant are listed here. There are ten ancient meadow indicator species.

Common Name	Botanical Name	
Bilberry	Vaccinium myrtillus	R
Bitter Vetch	Lathyrus linifolius	LF
Bush Vetch	Vicia sepium	Y
Cleavers	Galium aparine	Y
Common Bird's-foot-trefoil	Lotus corniculatus	0
Common Sorrel	Rumex acetosa	Y
Creeping Buttercup	Ranunculus repens	Y
Dandelion	Taraxacum officianale agg	Y
Heath Bedstraw	Galium saxatile	F
Heather	Calluna vulgaris	R
Hogweed	Heracleum sphondylium	Y
Marsh Thistle	Cirsium palustre	Y
Meadow Buttercup	Ranunculus acris	Y
Meadow Vetchling	Lathyrus pratensis	Α
Pignut	Conopodium majus	Α

Ribwort Plantain	Plantago lanceolata	Y
Tormentil	Potentilla erecta	R
Wood Anemone	Anemone nemorosa	F
Yarrow	Achillea millefolium	Y
Yellow-rattle	Rhinanthus minor	0

Less desirable plants are: -

Bramble	Rubus fruticosus agg
Common Nettle	Urtica dioica
Common Ragwort	Senecio jacobaea

### Summary

Thirty-six species were recorded, of which fifteen are ancient indicator species. When compared to the 2020 results this appears to show a decrease in diversity both in indicators and overall, however, I do not believe this to be the case. The long dry Spring of 2023 led to a more rapid seed setting of grassland plants. By the time the survey was carried out, some plants had completed their cycle and disappeared. These are the missing plants from this survey. Positive signs are a huge reduction in Common Ragwort and an increase in Yellow Rattle. Yellow Rattle is an annual which needs a relatively open sward for its seeds to germinate. This increase shows that current management is changing the distribution of grasses, leading to better conditions for annuals. As Yellow Rattle increases, it will parasitise the grasses, leading to a more open sward and more opportunity for annuals. The spread of indicator species is a slow process so we would not expect to see much increase over a few years. Improved management will allow latent seed to germinate and perennials to become stronger, and this appears to be happening.

### Pasture

#### Grasses/Graminoids

Twelve species of grass, a Woodrush and two Rush species were recorded. A total of four ancient grassland indicators

Common Name	Botanical Name	
Common Bent	Agrostis capillaris	Y
Meadow Foxtail	Alopecurus pratensis	Y
Red Fescue	Festuca rubra	Y
Rough Meadow Grass	Poa trivialis	Y
Sheep's Fescue	Festuca ovina	0
Smooth Meadow Grass	Poa pratensis	Y
Sweet Vernal Grass	Anthoxanthum odoratum	Α
Wavy Hair Grass	Deschampsia flexuosa	0
Yorkshire Fog	Holcus lanatus	Y
Field Wood Rush	Luzula campestris	F

This is a typical range of grasses for the area with a mixture of grasses which prefer both dry and damp conditions.

The less favourable graminoids are: -

Cocksfoot	Dactylis glomerata
False Oat Grass	Arrhenatherum elatius
Tufted Hair-grass	Deschampsia cespitosa
Compact Rush	Juncus conglomeratus
Soft Rush	Juncus effusus

Each of the above species can form large stands which exclude other species. They are indicators of areas which have lacked good management.

Soft Rush is very common in areas which are persistently damp and forms an integral part of damp grassland communities, but it can spread out into drier areas and take over.

### Flowering Plants/Forbs

Twelve species of flowering plant plus fiv are listed here. There are six ancient meadow indicator species.

Common Name	Botanical Name	
Bilberry	Vaccinium myrtillus	R
Bush Vetch	Vicia sepium	0
Common Sorrel	Rumex acetosa	0
Cow Parsley	Anthriscus sylvestris	0
Creeping Buttercup	Ranunculus repens	0
Dandelion	Taraxacum officianale agg	0
Germander Speedwell	Veronica chamaedrys	R/LF
Greater Bird's-foot-trefoil	Lotus pendunculatus	R/LF
Heath Bedstraw	Galium saxatile	0
Meadow Buttercup	Ranunculus acris	F
Meadow Vetchling	Lathyrus pratensis	F
Pignut	Conopodium majus	F

A mixture of species which prefer dry and damp environments.

Less desirable plants are: -

Bramble	Rubus fruticosus agg
Creeping Thistle	Cirsium arvense
Curled Dock	Rumex crispus
Common Nettle	Urtica dioica
Rosebay Willowherb	Chamerion angustifolium

Each of the above can form large stands. Bramble is a good nectar and food source as well as providing habitat for nesting birds.

Creeping thistle is an excellent nectar source but quickly forms large stands, spreading underground with rhizomes.

Common Nettle and Rosebay Willowherb also spread through creeping roots.

#### Summary

Comparing to the previous survey we see a similar trend to the meadow; fewer species overall are recorded but some will be present. Common Ragwort was not recorded but would have been were it there because it is just starting to flower.

This site has become more complicated to manage due to the tree planting which restricts grazing. The consequence of this is that problem species now dominate the areas around the fruit trees. This will change as the trees develop and start to create shade but until that happens human intervention will be required if those areas are to remain accessible. This could involve, pulling, strimming, scything or some combination of the above. The lower part of the field requires more grazing, the sheep are on site for a limited period and probably prefer the sweeter grasses of the lower slope. This area requires extra management, and I will propose an option later in the report.

Several ponds/scraped have been cut into the pasture, close to the willow area. These were dry and cracked at the time of the survey. Because of the topography of the site, these ponds will only hold water when the water table

is very high and will drain rapidly in drier periods. It would be good to have a permanent pond, but for that to happen it would need to be a prefabricated pond or to be located at a point where water is always flowing. There may be a possibility for this in the new area but it's not currently clear. I would be inclined to fill these scrapes back in unless a solution can be found to hold water through the year. I don't believe there is any attenuation gain from these ponds as there is not a high level of overground flow.

I did look at the allotment pond and was pleased to see that it did contain water, the water appeared to be coming from a hose. If that is mains tap water, it is not ideal, being chlorinated, but I did see a Broad-bodied Chaser flying over the pond. Given the proximity of the allotment pond it serves to provide extra diversity to the site overall. As suitable flora develops around the pond it will boost diversity with associated species.

### Coppice area

This area was not surveyed in 2020 but this time I looked at it from different perspectives. It still supports ancient grassland species, so I carried out a grassland survey. I also looked at the overall health of the trees and the balance of light getting through to the floor.

### Grasses/Graminoids

Eight species of grass, two woodrushes and one rush species were recorded. A total of four ancient grassland indicators

The less favourable gran	ninoids are: -	
Tufted Hair-grass	Deschampsia cespitosa	0
Soft Rush	Juncus effusus	0

No strict woodland grasses were present.

### Flowering Plants/Forbs

Eight species of flowering plant plus four are listed here. There are five ancient meadow indicator species.

Common Name	Botanical Name	
Bilberry	Vaccinium myrtillus	0+
Bush Vetch	Vicia sepium	F
Common Bird's-foot-trefoil	Lotus corniculatus	R/LF
Common Sorrel	Rumex acetosa	0
Creeping Buttercup	Ranunculus repens	R
Heath Bedstraw	Galium saxatile	R
Heather	Calluna vulgaris	0
Hogweed	Heracleum sphondylium	F
Meadow Buttercup	Ranunculus acris	F
Meadow Vetchling	Lathyrus pratensis	F

Less desirable plants are: -		
Bramble	Rubus fruticosus agg	0
Common Nettle	Urtica dioica	0
Common Ragwort	Senecio jacobaea	R
Rosebay Willowherb	Chamerion angustifolium	R/LF
The ferns Broad Buckler, Lady an	d Common Male, were all prese	nt but rare.

In addition to the planted trees, I recorded three self-seeded species, Pedunculate Oak, Hazel and Rowan. Along the lower hedge line there were several Blackthorn suckers.

### Discussion

This area still supports 9 grassland indicator species, exceeding the threshold for a Local Wildlife Site. With current understanding, this area would not have been deemed appropriate for tree planting. At the time the trees were planted the importance of these grasslands was understood but their local relevance was not known.

The upper area of the planted site is dry heath. This has a particular community of plants including Bilberry, Heather, Heath Bedstraw, Wavy Hair Grass and Haircap Moss. This is a small but important heath fragment; it clearly covered a larger area before the trees were planted. Beneath the trees there is quite a bit of dead and dying Heather. For the sake of diversity, the trees impinging on this heathland area should be removed or thinned. This area could tolerate some well-spaced trees, Birch or Rowan, but these should have the lower branches removed to allow the light through. There is some self-seeded Rowan in this area. The presence and survival of the self-seeded trees in this area suggests that the threat of deer is not as great as it might be.

Blackthorn has been planted in the hedgerow along the bottom of this section. Blackthorn is not present locally other than as a planted species. It is a thicket forming species, putting up many suckers and spreading in all directions. The suckers are initially soft and could be grazed but quickly become spiny. Again, these suckers are not being grazed, suggesting that deer are not actively browsing in this area. If access to the lower part of the wood is to continue, these suckers will need to be removed.

The majority of the planted trees are Hazel. The trees are closely planted and are now completely shading the ground in some areas, resulting in bare earth. On sloping ground this could lead to erosion and the lack of ground cover has a negative effect on natural flood management.



The plant you can see in the above image is a garden daffodil.

Hazel planted at this density requires coppicing on a five-year rotation. This coppice would benefit from that process starting now, before too much ground flora is lost. Coppicing will allow more light into the ground and into the other trees, which will result in the production of more hobs. Hazel requires a lot of light to produce flowers and set seed. Hob production is not dependant on the number of trees but on the amount of light each tree receives. If each tree can spread into its own space it will produce more hobs and these will be more accessible for collection.

The coppicing could be carried out in sections or in a checkerboard fashion.

Hazel is a shrub which puts up a lot of growth from the base, putting up new stems and forming a stool. In the above image you can see a shoot coming up from the base of the tree, however the tubes are preventing this, and they are causing other problems. An examination of the tubes show that some are cutting into the bark of the trees, other trees are severely constricted. It is imperative for the health of many of these trees that the tubes are removed. Trees on the meadow side are younger or less well developed and could retain their tubes, however I do not believe they are at risk. In the next image you can see the pressure being exerted onto a tube. You can also see new growth coming up from the base of this tree and the one behind, more evidence that browsing pressure is low. Hazel regenerates well and can stand some light browsing and damage from rubbing. Given the density of the planting and the lack of natural attrition, some damage would be in keeping with a more natural woodland. The trees in the section have grown well and are now in need of management to maintain the health of both them and their surroundings.



## The New Fields

## Dry Acid Grassland

## Grasses/Graminoids

Eleven species of grass two woodrushes and two rush species were recorded. A total of six ancient grassland indicators

Common Name	Botanical Name	
Common Bent	Agrostis capillaris	0
Mat-grass	Nardus stricta	0
Meadow Foxtail	Alopercurus pratensis	0
Red Fescue	Festuca rubra	F
Rough Meadow Grass	Poa trivialis	0
Sheep's Fescue	Festuca ovina	0
Sweet Vernal Grass	Anthoxanthum odoratum	F
Wavy Hair Grass	Deschampsia flexuosa	F
Yorkshire Fog	Holcus lanatus	Α
Field Wood Rush	Luzula campestris	0
Heath Woodrush	Luzula multiflora	0

The less favourable graminoids are: -CocksfootDactylis glomerataFalse Oat GrassGlyceria fluitansTufted Hair-grassDeschampsia cespitosa

Soft RushJuncus effususOPart of this field is boggy and therefore should support a healthy rush community. This can be a species rich area if<br/>properly managed. Other aggressive grasses should become less frequent with good management.

Juncus conglomeratus

0

0

0

0

### Flowering Plants/Forbs

Compact Rush

Thirty-two species of flowering plant plus four are listed here. There are fourteen ancient grassland indicator species.

Common Name	Botanical Name	
Bilberry	Vaccinium myrtillus	0
Bitter Vetchling	Lathyrus linifolius	0
Broad-leaved Willowherb	Epilobium montana	R
Bush Vetch	Vicia sepium	F
Cleavers	Galium aparine	R
Common Bird's-foot-trefoil	Lotus corniculatus	Α
Common Mouse-ear	Cerastium fontanum	R
Common Sorrel	Rumex acetosa	F
Cow Parsley	Anthriscus sylvestris	0
Creeping Buttercup	Ranunculus repens	F
Dandelion	Taraxacum officianale agg	0
Fox and Cubs	Pilosella aurantiaca	0
Foxglove	Digitalis purpurea	0
Germander Speedwell	Veronica chamaedrys	O/LF
Greater Bird's-foot-trefoil	Lotus pendunculatus	F
Heath Bedstraw	Galium saxatile	F
Hogweed	Heracleum sphondylium	0
Lesser Stitchwort	Stellaria graminea	F
Marsh Bedstraw	Galium palustre	R
Marsh Thistle	Cirsium palustre	0

Meadow Buttercup	Ranunculus acris	F
Meadow Vetchling	Lathyrus pratensis	Α
Mouse-ear-Hawkweed	Pilosella officinarum	R
Pale Lady's-mantle	Alchemilla xanthochlora	0
Pignut	Conopodium majus	Α
Red Clover	Trifolium pratense	F
Ribwort Plantain	Plantago lanceolata	F
Tormentil	Potentilla erecta	0
Wavy Bitter-cress	Cardamine flexuosa	R
Wood Anemone	Anemone nemorosa	R
Yarrow	Achillea millefolium	0
Yellow-rattle	Rhinanthus minor	0
Less desirable plants are: -		
Broad-leaved Dock	Rumex obtusifolius	R
Common Ragwort	Senecio jacobaea	0
Curled Dock	Rumex crispus	R
Rosebay Willowherb	Chamerion angustifolium	0

#### Summary

This is the most botanically diverse area on the site with a total of twenty indicator species. The site has different habitat types with both dry acid and damp rush pasture areas. The dry acid areas will respond well to a late summer graze, this should help to increase flowering plant abundance and diversity. To enhance the rushy areas, stronger measures will be required.

## Rush Pasture

#### Grasses/Graminoids

Tn species of grass, one sedge and two rush species were recorded. A total of three ancient grassland indicators

Common Name	Botanical Name	
Common Bent	Agrostis capillaris	F
Crested Dog's-tail	Cynosurus cristatus	R
Meadow Foxtail	Alopercurus pratensis	0
Red Fescue	Festuca rubra	F
Rough Meadow Grass	Poa trivialis	F
Smooth Meadow Grass	Poa pratensis	0
Sweet Vernal Grass	Anthoxanthum odoratum	F
Wavy Hair Grass	Deschampsia flexuosa	0
Yorkshire Fog	Holcus lanatus	А
Oval Sedge	Carex leporina	R
The less favourable graminoids are	e: -	

Tufted Hair-grass	Deschampsia cespitosa	F
Compact Rush	Juncus conglomeratus	0
Soft Rush	Juncus effusus	F

This field is dominated by rushes and they are in their natural habitat here. Rushes can move out of wetter areas due to seasonal inundation and start to take over drier land. With positive management these areas of rush may prove to host many species of flowering plant.

## Flowering Plants/Forbs

Eighteen species of flowering plant plus five are listed here. There are eight ancient grassland indicator species.

Common Name	Botanical Name	
Broad-leaved Willowherb	Epilobium montana	0
Bush Vetch	Vicia sepium	F
Cleavers	Galium aparine	R
Common Bird's-foot-trefoil	Lotus corniculatus	R
Common Bistort	Persicaria bistorta	0
Common Mouse-ear	Cerastium fontanum	0
Common Sorrel	Rumex acetosa	F
Cow Parsley	Anthriscus sylvestris	0
Creeping Buttercup	Ranunculus repens	F
Cuckoo Flower	Cardamine pratensis	0
Germander Speedwell	Veronica chamaedrys	R
Greater Bird's-foot-trefoil	Lotus pendunculatus	F
Heath Bedstraw	Galium saxatile	0
Marsh Thistle	Cirsium palustre	F
Meadow Vetchling	Lathyrus pratensis	Α
Tormentil	Potentilla erecta	R
Wavy Bitter-cress	Cardamine flexuosa	R
Wood Anemone	Anemone nemorosa	R

Less desirable plants are: -		
Broad-leaved Dock	Rumex obtusifolius	0
Common Nettle	Urtica dioica	0
Common Ragwort	Senecio jacobaea	0
Creeping Thistle	Cirsium arvense	F
Curled Dock	Rumex crispus	0

#### Summary

This field is less diverse but still exceeds the threshold for a Local Wildlife Site. Indeed, all of these fields are designated as LWS. However, positive management is lacking for this and the lower field. Historically, fields in active management in the area tend to have been drained to enhance productivity. The presence of areas of rush and their associated communities are therefore rarer and can be home to many rarer species. Given the current condition of the field it is difficult to make an accurate assessment.

#### Management of the new fields

Taking on the new fields is an opportunity to allow more space for nature. These fields have more diversity of habitats and are a good size which allows more room for a range of microhabitats. It's likely that these fields will have less human traffic so can be a little wilder. In the first instance I think it will be good to allow sheep to graze the field. There are areas that they will favour, and these are likely to be the areas supporting grassland fungi. Grazing before the fungi season starts will enable a CHEGD survey to be carried out in the Autumn.

To help manage the ancient grasslands at Hardcastle Crags, the National Trust have recruited a herd of wild Exmoor Ponies. These ponies have evolved with ancient grasslands and can have a transformative effect on species abundance and diversity when managed well. Some of the Trust's fields are very similar to these new fields and the ponies have had a very positive impact on them, bringing about an explosion of flowering plants and diversity in the rushy fields.

If we consider a traditional grazing ecosystem, the herd size is determined by the available grazing in the winter. The ponies build up fat stores going into the winter but must then survive on the less palatable plants which have grown through the summer. During the winter they eat rough grasses and rushes, opening everything up and letting the light in. Some areas of rush will have developed over years and will be very thick, blocking out all light so preventing annuals and perennials alike. If those plants are grazed during winter, perennials and annual seeds get a chance to grow again.

I propose that the National Trust ponies are brought onto site to graze the new fields at some point during the autumn/winter. They could also be given access to the existing upper pasture, with electric fence used to protect the fruit trees. They would make an impact on those species unpalatable to the sheep. It will be much easier to get a sense of the site and its hydrology once the ponies have done their work. In order to get the ponies on and off site there would need to be some infrastructure improvements, fencing would need to be checked and may need replacing. Ideally a gate should be fitted in the meadow where there is currently a deer jump, this would allow access to the new fields without requiring the ponies (or cattle) to go up through the meadow and through the top gate. In order to load the ponies into a vehicle, some form of holding area is helpful. The exact nature and placement of this will require more thought.

In an agricultural setting, winter grazing is not encouraged, there is likely to be some damage to the sward and animals will lose condition through the winter. However, from an ecosystem perspective, this forced grazing of rough forage and the breaking up of areas means new niche habitats and more diversity.

In conclusion, the management of the meadow is having a positive effect. The pasture requires some revision to manage rougher grasses and the areas between the fruit trees. The coppice area needs a new plan and active management. The new fields need a good winter graze to get a clearer idea of the existing important habitat and where there are opportunities for habitat creation.