

## Bees, Butterflies and Flowers for the Orchard: The “Hay Meadow” Proposal



This is a document that has been agreed with the Baslow & Bubnell Parish Council as a statement of the case for establishing a hay meadow at the Community Orchard Site. The Community Orchard Group itself originally wanted there to be a larger meadow than in this proposal but has responded to local opinion and the wishes of the Parish Council and now presents this revised case for consideration.

*Picture: the meadow at the Wylam Community Orchard, Northumberland*

## 1 Why?

Our orchard is bereft of colour and wildlife.

Except when the fruit trees blossom, our orchard has no flowers, and so no bees and no butterflies. We can fix this.

By adjusting the management of the small area around the trees in the manner of a "hay meadow", we can add the colour of wild flowers. The flowers will bring the bees, butterflies and other insects. And these will bring birds as well. Our project is aligned with the local "Pollinating the Peak" initiative run by the Bumblebee Conservation Trust in partnership with the National Trust, Derbyshire Wildlife Trust, Chatsworth and others [18], and a long-term collaboration may be possible.

The large closely mown area in the middle, which is the majority of the orchard's area, will remain unchanged, providing ample area for children's games and picnics.



The photos above are of the common blue and small tortoiseshell butterfly. A regular butterfly survey undertaken in Baslow (part of the the UK Butterfly Monitoring Scheme [13]) has found over 20 different species of butterflies locally. Since the butterflies feed on nectar from flowers, the presence of nectar-rich flowers through the year will inevitably attract these beautiful animals to the orchard.

One of the reasons we began the orchard project was a response to the gradual loss of traditional orchards across Britain: 90% of traditional orchards have been lost since the 1950s [1]. By embarking the orchard project we were playing a small part in reversing that

trend. It is a long-term project: the orchard's value will increase gradually over the decades ahead, and it will become more valuable as the trees reach maturity and becomes a habitat for other species of plants and animals.

Another habitat that has been lost in Britain is the traditional hay meadow. As farming practices have changed species-rich meadows have been replaced by monoculture grass leys. Over 97% of our meadows have been eradicated since the 1930s [2].

Species-rich hay meadows support a wide variety of plants – grasses and flowering herbs. The variety of plants in turn support a variety of insects, including bees and butterflies.

Orchards have often been associated with meadows.

By promoting a “meadow” around the trees, while retaining the large area of short grass in the centre of the site, there is an opportunity to enhance the wildlife value of the orchard without losing the recreational facilities.



Other orchard groups have developed meadows as part of their orchards.

The Bradwell Community Orchard has adopted this practice: the photo above is of their orchard taken this May. Other orchards with hay meadows include the Wylam Community Orchard, Northumberland [4] and the National Trust manor house at Plas yn Rhiw [5].

## **2 Pollinating the Peak**

Pollinating the Peak is an ambitious natural heritage project based in Derbyshire that will raise awareness of the links between our countryside, food and bumblebees [18].

*“Pollinating the Peak is an ambitious natural heritage project based in Derbyshire that will raise awareness of the links between our countryside, food and bumblebees. Working with a wide range of partners across all sectors, we will engage with people of all ages and inspire a new generation of entomologists and citizen scientists to look after and look out for bumblebees now and in the future, taking action from planting pollinator-friendly flowers in their own gardens to carrying out bumblebee surveys.*

*By inspiring public action the project aims to help secure the future of the Bilberry bumblebee (a Peak District National Park priority species) and other local bumblebees by improving favourable habitat and monitoring bumblebee populations.”*

It is led by the Bumblebee Conservation Trust and Chatsworth is one of the partners. Through Chatsworth contacts we have made initial contact with the project. We hope to start collaborating with this project. Our tiny meadow could be a link in to their education programme, and there is the prospect of talks in the village, scything demonstrations and the like.



The Bumblebee Conservation Trust has published advice leaflets, including “Managing traditional orchards... for bumblebees” [19] which says “management should ideally mimic that of a traditional hay meadow.”

### **3 What is a Meadow?**

A meadow is a area of perennial grassland maintained by an annual cycle of growing a hay crop, mowing, and grazing. Grasses and perennial flowers grow and are allowed to set their seeds before being cut for hay. The hay making takes place in late summer. Traditionally, the meadow would then be grazed until the winter, before being shut up again the spring to allow the grass to grow.

Over time, removing the hay reduces the fertility of the soil which allows the flowers to better compete against the more vigorous grasses.

Distinctive species of flowering plants establish themselves. Species such as ox-eye daisy, meadow cranesbill, cowslips, buttercups, red clover and common spotted orchids might be expected. This photo shows a species-rich hay meadow.



The flowers in a hay meadow are not the same as those associated with cornfields which are cultivated each year. In that case the flowers which can grow are annuals such as poppies, cornflowers and corn marigolds.

This website [3] explains the difference.

## **4 Where Will the "Hay Meadow" be?**

Since the orchard was established we have left the grass in the area around the trees to grow longer, while keeping the large central area closely mown.

The image below is from Google Maps. The footpath is on the right-hand side and the oak tree and story circle are on the left. The closely mown area in the middle can be clearly seen, in contrast to the longer grass surrounding the trees.



The proposal is that some of this longer grassed area is allocated to the meadow, as described on the next page.

The management of the open area in the middle, which has been kept closely mown in the past, will remain unchanged, so that a large area remains for children's play, picnics and Apple Day activities.

Some paths will be mown through the meadow area and between the meadow area and the hedges.

Four neighbouring properties have gates into the orchard and these will be outside the meadow area. Paths will be mown from these gates into the central area.

The image below is a map of the proposed development:

- ◆ The white lines are the borders of the orchard, bounded by the hedges and footpath.
- ◆ The four orange dots on the perimeter show the position of gates from neighbouring properties.
- ◆ The yellow-bordered areas on the top edge and in the bottom left corner are the proposed meadow areas.
- ◆ The blue lines show the position of paths that will be mown from the gates, through the meadow area, and between the meadow area and the hedges.
- ◆ The large area in the middle is the existing closely mown area, which will be maintained unchanged.
- ◆ The red-bordered area in the bottom right hand corner has not been agreed with the Parish Council as part of the proposed meadow. It could possibly be added, either in the initial scheme or at a later time if the meadow is considered a success. We would like to know whether including or excluding this area changes your opinion on the project.



With the graphics tool that was used to create the coloured lines above, it is possible to superimpose a grid and count squares to estimate areas. Using this technique, the top meadow area represents 14% of the area of the total site, the bottom left-hand area is 3% and the bottom right-hand area would add a further 8%. Thus the meadow area would be

17% or 25% of the total.

The closely mown area in the middle will remain as it is, and makes up the majority of the site in any plan.

## **5 How Will it Develop?**

During the 2018 summer, the yellow-bordered area was left unmown until August. Some people felt that this looked untidy. It is important to note that the state of the grass during the 2018 summer is not what we expect the meadow to look like as it evolves.

In a site visit on 12 October 2018, Steve Porter, head gardener at Chatsworth, confirmed that with our proposed management plan the grassed area will rapidly transform into a meadow-like area. By removing the hay at the end of the summer fertility will reduce and flowering species will introduce themselves. Progress will be faster with introduction of yellow rattle (see below) and flowering plants grown in plugs.

The ideal might be like the photograph below: the hay meadows near the Grouse pub above Grindleford. There would be less tall grass, and a wide variety of flowering plants. Different plants will flower in succession, through the spring and summer. The yellow flowers in the foreground are yellow rattle: note that the grass is less vigorous here.



As with the orchard itself, we should think of the meadow project as being a journey of several years. A traditional meadow may be hundreds of years old, and the species of plants and animals will have settled over this extended period. When establishing a new meadow we will artificially introduce flowering plants, and we can expect that it will take some time for a stable pattern to develop.

The web is full of good advice on establishing new meadows: [6] – [11]. These websites



cover meadows of different scales: ours of course is very small. Advice includes:

- ◆ Removing top-soil to reduce fertility. This is likely to be impractical for us, and perhaps too disruptive.
- ◆ Removing weeds. Fortunately our grass area does not suffer from weeds such as dock, thistle and stinging nettle. There are some nettles at the base of the surrounding hedges which will be controlled by mowing the adjacent paths.
- ◆ Cut grass back hard prior to applying seeds. This we should do: perhaps immediately after the Apple Day.
- ◆ Introduce seeds by bringing "green hay" from existing hay meadows and strewing it onto a prepared surface. We could do this but only if we could identify a willing and suitable supplier. (No ideas at present).
- ◆ Grow plants from locally collected seeds as "plugs" (young plants grown in trays). We can sow the seeds this autumn and plant the plugs next autumn.
- ◆ We can source perhaps 100 plants each of ox-eye daisy and common knapweed now, that can be planted this autumn for flowering next summer. If a budget exists, commercially grown plugs could be bought in now and planted this autumn.
- ◆ If planting seeds, then rotavate to expose bare soil. This could be practical in small areas.
- ◆ Spread seeds. We have already harvested certain amounts of local wildflower seeds, and we could buy in seeds.
- ◆ Plant yellow rattle seeds to reduce the vigour of the grass (see below). We have thousands of yellow rattle seeds and we can do this this autumn.

## 6 Yellow Rattle

Yellow rattle (*Rhinanthus minor*) (also known as hay rattle) is an attractive plant that will be an important component of our meadow. The name derives from the sound made by the dry seeds inside their ripe seed pods. Yellow rattle is semi-parasitic on grasses. Where yellow rattle grows the vigour of the grass is diminished, and other flowering plants will be better able to grow, with less competition from the grasses.

We already have a small area of yellow rattle at the North-West corner of the orchard, and it is already apparent that where the yellow rattle grows the grass is diminished.



It is an annual and the seed must be sown fresh. It will germinate the following February. Once established, it will set its own seed each year and spread. This summer we collected many thousands of yellow rattle seeds and these can be spread this autumn.

## 7 Management

Management is simple.

In conjunction with the Parish Council, we will agree a mowing regime to be implemented by the mowing contractor. In essence the meadow area will be left unmown through the spring and summer, except for the paths through the meadow and around the border. A level of flexibility is needed on dates, to reflect the actual weather conditions.

The meadow will be mown in late summer, when flowering plants have set their seeds. When making hay, the hay is left to dry in the sun for two or three days, and is turned to help with this drying. The consequence of this is that most of the seeds of the flowering plants fall out and will germinate for the next year.

The cut grass must be removed. In a real hay meadow, this is the hay crop. Removing the grass leads to a slow reduction in the fertility of the soil. If the grass were to be left to rot then the nutrients would return to the soil. It is the lower fertility that enables the flowering plants to compete with the more vigorous grasses.



This year the grass was cut (strimmed) in late August and left to dry for about three days. We then raked it and bagged it. The hay was removed from the site and given to a neighbouring farmer, to feed to his animals.



## 8 What Flowers Might we Expect?

An established meadow might have dozens of species of grasses and flowers. These will have arrived naturally over years. In our case we need to introduce these ourselves. Ideally we would use locally gathered seeds in order to maintain local DNA.

The following pages shows some of the species that might be found in a hay meadow, and that we might expect in ours.

One of the fascinating aspects is watching the succession of flowers through the months: some will bloom in early spring, and will be followed by others until late August.



**Yarrow**



**Bluebell**



**Hare Bell**



**Common Knapweed**



**Field Scabious**



**Oxeye Daisy**



**Ribwort Plantain**



**Cowslip**



**Devil's Bit Scabious**



**Tufted Vetch**



**Red Clover**



**Meadow Buttercup**



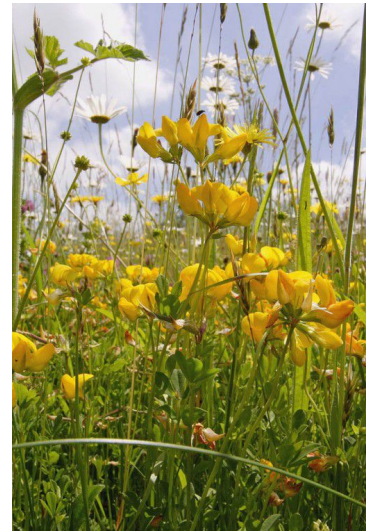
**Eyebright**



**Meadow Cranesbill**



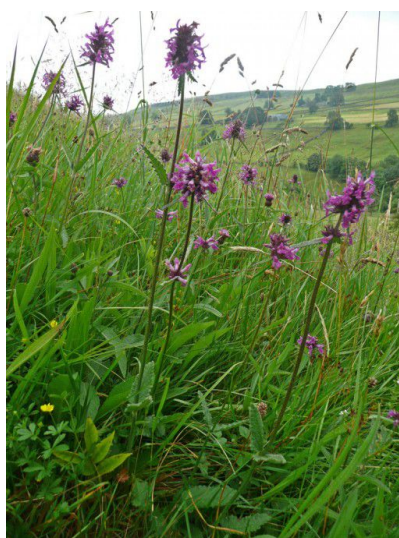
**Meadow Vetchling**



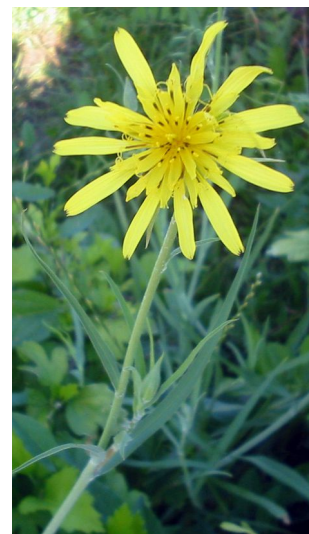
**Birdsfoot Trefoil**



**Smooth hawksbeard**



**Bettony**



**Goat's Beard**



## **9 First Consultation**

Earlier in the year we solicited the views of residents, through the Parish News and with an email to the orchard group mailing list. We received nine responses: six in favour and three against. It is worth recalling that there was opposition to the establishment of the orchard as well.

**Person 1 said:**

*I understand you are looking for views on the hay meadow issue.*

*I would say that if the hay is attracting insects, including butterflies and bees, then that is a good thing. Bees are in decline and if by having the hay this increases the biodiversity of the area then is to be applauded.*

**Person 2 said:**

*Good idea in principle but have only seen grass - maybe plant some wildflower seeds next year? Would be lovely to see some colour amongst the tall grass.*

**Person 3 said:**

*Thanks for the opportunity to comment. The meadow idea does make the field look very untidy and does not sit well with the joint role of the field as a children's play area. Nettles sting !!*

*Before the meadow the field had been a great improvement on what had been there before. Its use as a play area has increased with the increased number of youngsters at this end of the village.*

*A step back perhaps?*

In response to Person 3 we would like to point out that there were no nettles in the meadow area, only some growing from out of the hedges. The Orchard Group removed these. We are not proposing any reduction in the central play area.

**Person 4 said:**

*My views, along with discussions I have had with my neighbours over the last couple of months, will come as no surprise to you.*

*I have been very annoyed by what I regard as the total mess outside my back garden of the grass around your trees & right up to the perimeter of the field. When the layout of this orchard was agreed in 2012 after much discussion with local residents it was specifically part of the deal that the ground would be maintained in a neat & tidy manner with weed control as per the covenants in the Conveyance Redmile - Baslow & Bubnell Parish Council 8.1983.*

*I have no argument whatsoever about the mid part of the field which has been maintained very well nor your other trees on Over Lane where the grass is regularly cut in a tidy manner.*

**SO PLEASE PARISH COUNCIL DO THE PROPER THING & MAINTAIN THE WHOLE FIELD PROPERLY & STOP CAUSING ANNOYANCE TO THE GOOD LOCAL**

RATEPAYERS AGAIN AS IS YOUR DUTY AS PER THE TITLE DOCUMENT.

**Person 5 said:**

*Just wanted to say how much I have enjoyed the meadow this year. I walk past it almost every day. With the sad decline of our old meadows it seems an excellent initiative.*

*Many thanks to those who have undertaken it.*

**Person 6 said:**

*As a member of the Orchard group (and occasional helper) I would like to encourage a small area of meadow to encourage butterflies and wildlife. I have been saddened that neighbours feel the area is too great, but hope we can live in harmony by decreasing the area of meadow. I must stress that this is my personal view!*

**Person 7 said:**

*Hi. I think that the wilder area is brilliant. We need more wild areas for bees which are under threat. Neatness doesn't come into it. It's ridiculous to say so. Natural environments aren't neat.*

**Person 8 said:**

*Thank you very much for the opportunity (Parish News article) to give comments on this.*

*Hurray! I thoroughly approve of the natural appearance of the orchard. It looks wonderful with the meadow around the trees.*

*I am very much in favour of maintaining habitats for wild life and very much against residents mowing hedgerows and generally trying to urbanise and manicure public areas in Baslow.*

*I love the wild flowers on the rab by Chatsworth Golden gates entrance and do not like the "Parks department" planting in the wooden planter on the Village Green and on the rab by Rowley's (except the bulbs there, which I do like.)*

*I like the wild area at the bottom of Eaton Hill.*

*...Baslow resident for 37 years.*

**Person 9 said:**

*We write to express our views on the development of a meadow at the orchard.*

*As neighbours who's property adjoins the orchard we feel that the development of the meadow is inappropriate. The site looks a mess and is untidy. It restricts the area that children used to play on. Any benefit from the development of a meadow is likely to be extremely limited given its relatively modest size. It is much more appropriate for this to be a properly maintained attractive area.*

*We wholly support the idea of a community orchard but we do not in any way agree with this being a wild unkempt site.*

## **10 Second Consultation**

The Baslow & Bubnell Parish Council have decided to consult residents on the proposal set out in this document. A single sheet (two-sided) has been produced for emailing, and hand delivery to immediate neighbours. That short document references this full document, by way of a link to the Orchard Group website at:

<http://www.baslow-orchard.org/hay-meadow>

The text of the consultation letter follows. The second sheet includes the map on page 7 of this document. The actual leaflet is in the website.

### **Consultation on Establishing a "Hay Meadow" at the Community Orchard**

The Baslow & Bubnell Parish Council wishes to consult further on the possible establishment of a "hay meadow" at the Community Jubilee Orchard.

The Orchard Group's initial experiment with establishing a meadow this summer was adversely affected by the extremes of weather during the year. An earlier consultation with the public attracted mixed responses to the experiment: two-thirds of the respondents were in favour but those against tended to be the residents closest to the orchard site. Further development would be more carefully planned and managed, and reflect consultation feedback.

Responding to these comments, the Orchard Group have submitted a further, more detailed proposal for a hay meadow of significantly smaller area than was attempted this year. They feel that establishing wild flowers will have a positive impact on the local ecology and the environment. It would support another important local initiative - the "Pollinating the Peak" programme run by the Bumblebee Conservation Trust, in partnership with the National Trust, Derbyshire Wildlife Trust, Chatsworth and others.

The Parish Council is sympathetic to the Orchard Group's case but must also reflect the views of the wider local population and especially those residents near to the orchard. Hence, they wish to adopt the following position, subject to this further consultation:

1. That the Parish Council supports the principle of establishing a "hay meadow" in view of the environmental and ecological benefits.
2. That the area to be developed is reduced even further to that initially proposed by the Orchard Group.
3. That the position is reviewed after a period of time sufficient to judge the outcome (2-3 years during which the vigour of the grass should be suppressed and flowers should become established).
4. That in this period the Council regularly inspect the area and takes action if necessary - either to abandon the project or allow its further development.

The Council is interested in your views.

The other side of this leaflet includes a summary of the proposed development, including a map. More detailed information can be found on the Orchard Group's website at:

[www.baslow-orchard.org/hay-meadow/](http://www.baslow-orchard.org/hay-meadow/)

Please send your comments to the Clerk to the Council, Sarah Porter, at [clerk.baslow.bubnell@googlemail.com](mailto:clerk.baslow.bubnell@googlemail.com)

**Summary of the Proposal:**

Some areas of grass around the trees will be managed in the manner of a “hay meadow”. The grass will be left to grow during the spring and summer, then mown and the hay removed. Active measures will be taken to introduce flowers and reduce the vigour of the grass. Paths will be mown around the edges and through the meadow area.

## 11 Propagating Flowers from Seed

Large numbers of plants can be grown with little cost beyond the labour involved. One of us has collected seeds from these plants growing locally:

- ◆ Oxeye daisy
- ◆ Bettony
- ◆ Meadow cranesbill
- ◆ Meadow vetchling
- ◆ Birds-foot trefoil
- ◆ Self-heal
- ◆ Pignut
- ◆ Field scabious
- ◆ Devil's bit scabious
- ◆ Yellow rattle
- ◆ Yarrow
- ◆ Common knapweed
- ◆ Hawksbit
- ◆ Cow slip
- ◆ Ribwort plantain

All of these plants are typical of hay meadows and all should grow well from seed. Seeds can be sown in seed trays in the autumn or spring and transferred to trays like the following for growing on, before being planted out as plugs:



Suitable trays are available from a number of suppliers [14]-[15]. How many people would like to take on this challenge – perhaps to propagate one or two trays of plugs?

Commercially grown wildflower plugs are also available from a number of suppliers [16]-[17]. This could reduce the time required to establish a meadow, but the cost would be high as they sell for at least 60p per plant.

## 12 Costs

We do not expect there to be any additional costs for the Parish Council. If anything, the mowing work might be less which might save a little money.

Plenty of plug trays and compost could be bought for under £100.

## 13 References

If you are reading an electronic form of this document you can click the links and be taken to the websites.

- [1] [Traditional orchard decline](https://ptes.org/campaigns/traditional-orchard-project/traditional-orchard-decline/) – People's trust for Endangered Species website.  
*https://ptes.org/campaigns/traditional-orchard-project/traditional-orchard-decline/*
- [2] [Real action needed to save our vanishing meadows](https://www.plantlife.org.uk/uk/about-us/news/real-action-needed-to-save-our-vanishing-meadows) - Plantlife website.  
*https://www.plantlife.org.uk/uk/about-us/news/real-action-needed-to-save-our-vanishing-meadows*
- [3] [Are you sure your meadow is a meadow?](http://plantlife.love-wildflowers.org.uk/wildflower_garden/when_a_meadow_isnt_a_meadow/) - The Wildflower Garden website  
*http://plantlife.love-wildflowers.org.uk/wildflower\_garden/when\_a\_meadow\_isnt\_a\_meadow/*
- [4] [Creation of a community orchard and meadow](http://www.magnificentmeadows.org.uk/assets/pdfs/Creation_of_a_community_orchard_and_meadow.pdf) – Magnificent Meadows website  
*http://www.magnificentmeadows.org.uk/assets/pdfs/Creation\_of\_a\_community\_orchard\_and\_meadow.pdf*
- [5] [Orchard and meadow at Plas yn Rhiw](https://www.nationaltrust.org.uk/plas-yn-rhiw/features/orchard-and-meadow-at-plas-yn-rhiw) - National Trust website  
*https://www.nationaltrust.org.uk/plas-yn-rhiw/features/orchard-and-meadow-at-plas-yn-rhiw*
- [6] [How to restore an orchard meadow](https://www.countrylife.co.uk/gardens/restore-orchard-meadow-61553) – Country Life September 2014  
*https://www.countrylife.co.uk/gardens/restore-orchard-meadow-61553*
- [7] [Management of Meadows and Grassland](https://wildseed.co.uk/page/management-of-meadows-and-grassland) – Emersgate Seeds website  
*https://wildseed.co.uk/page/management-of-meadows-and-grassland*
- [8] [Seeding new Coronation Meadows](http://coronationmeadows.org.uk/conservation/loss-stats/) – Coronation Meadows website  
*http://coronationmeadows.org.uk/conservation/loss-stats/*
- [9] [Start a wildflower meadow](https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/startawildflowermeadow/) – RSPB website  
*https://www.rspb.org.uk/get-involved/activities/give-nature-a-home-in-your-garden/garden-activities/startawildflowermeadow/*

- [10] [Coronation Meadows](#) – Plantlife website  
<http://www.plantlife.org.uk/uk/our-work/conservation-projects/grassland/coronation-meadows>
- [11] [Wildflower meadow: establishment](#) – RHS website  
<https://www.rhs.org.uk/advice/profile?PID=436>
- [12] [Yellow rattle: the meadow-maker's helper](#) – Guardian website  
<https://www.theguardian.com/lifeandstyle/gardening-blog/2012/sep/27/yellow-rattle-meadow-grassland>
- [13] [The UK Butterfly Monitoring Scheme](#) – Scheme website  
<http://ukbms.org/>
- [14] [60-cell seed trays](#) – Nutleys Kitchen Garden website  
<https://nutleyskitchengardens.co.uk/sowing-growing/propagators-seed-trays/plug-trays/20-extra-large-plug-plant-root-trainer-60-cell-seed-trays>
- [15] [84-cell plant tray](#) – Quickcrop website  
<https://www.quickcrop.co.uk/product/84-cell-plant-tray-3-pack>
- [16] [British Native Wildflower Perennial Plug Plants](#) – Meadowmania website  
<https://www.meadowmania.co.uk/wild-flower-meadow/wild-flower-plug-plants.htm>
- [17] [Wildflower Plug Plants](#) – Wildflower shop website  
<https://www.wildflower.co.uk/all-wildflower-plug-plants/>
- [18] [Pollinating the Peak](#) – Bumblebee Conservation Trust website  
<https://www.bumblebeeconservation.org/pollinating-the-peak/>
- [19] [Managing traditional orchards... for bumblebees](#) - Bumblebee Conservation Trust  
[https://www.bumblebeeconservation.org/wp-content/uploads/2017/08/BBCT\\_Land\\_Factsheet\\_8\\_Managing\\_traditional\\_orchards.pdf](https://www.bumblebeeconservation.org/wp-content/uploads/2017/08/BBCT_Land_Factsheet_8_Managing_traditional_orchards.pdf)