

Welcome to the Floodplain Meadows Partnership January 2011 newsletter. We have two major features this edition. The first is on the social history of floodplain meadows with contributions from John Rodwell, Alison McDonald and Bridget Smith on their particular explorations into the archives (pages 2-5). The second, found in the Science Corner is an extended discussion on when to cut a floodplain meadow, an issue which was raised during our workshop last year. We thought it worth dedicating a full length feature article to (page 6)! Events this year are found on page 5.

Floodplain Meadows Partnership: our past and our future

We have now completed the first three years of our project. We have met our objectives and delivered some strong elements and we hope you have found our efforts useful. We are currently in the process of writing several papers that will clarify our findings; in terms of the plant-water relationship and nutrient requirements of meadow communities, together with a revised classification of the Meadow foxtail-Great Burnet floodplain-meadow community. We will publicise these once they are available and summarise the findings in future newsletters.

We had always planned for this project to span 10 years, but that relies on funding being available. Over the past three years, we have managed to secure funds for a range of different activities and are currently applying for funds to support the project staff over the next three years. We have secured some important contributions towards this, but not yet for the whole amount. We are hoping to find out if other applications have been successful early in the New Year. Meanwhile, we will be continuing with our programme of events, research and survey work this summer. Find out what we are up to on page 5.

Our Russian botanist, Irina, considers donning her ice skates at Portholme.



Photo: Mike Dodd



a million voices for nature



The Light
Owler Trust



The Open
University



The 29th May 1961
Charitable Trust



Floodplain Meadows: just a nice site for wildlife or a living resource that reveals the history of our rural economy and landscape?

One of the fascinating things about floodplain meadows is the history that lies behind them. Without their long and rich social history, we would not have such fabulous sites to enjoy today. As the product of a farmed system, and often still only here because of their very complicated ownership arrangements, we should be very aware of the history behind our meadows.

Meadows may not have many obvious historical features that can be easily designated, but the picture of a world that they paint is remarkable. In many cases they were the source of funds to develop villages, towns and cities that may not otherwise exist in the same way today. Anthea Brian and Peter Thomson in their excellent book 'The History and Natural History of Lugg Meadow' state this very nicely;

'As a nation we carefully cherish our ancient buildings and spend large sums annually on their upkeep. In contrast Lugg Meadow which is older still, maintains itself at no cost to us and continues to produce an annual crop of valuable hay. In the past this hay was a source of great wealth to those who built and maintained Hereford Cathedral and a landscape historian, writing to emphasise the importance of the Meadow has said;

'Here at Hereford we are not just looking at a pleasant view or an interesting arrangement of plants. We are looking at an increasingly rare example of an area of land whose management helped to hold together the very fabric of a past society. Without the Lugg Meadows of this world, there would have been no Hereford Cathedral, no Mappa Mundi – perhaps not even a Hereford itself.'

We have asked three meadows enthusiasts, who have found themselves drawn into the world of archives on meadows, to show us what they did, where they looked, and what they found. There are some common themes in their stories; the myriad of uses to which meadows are put; airfields, race courses, skating rinks, and the huge importance they once played in the local economy and rural infrastructure. Not to forget of course that knowing how your meadow was managed in the past will give you big clues as to appropriate management today. If a college owns the land, you have struck lucky (and Oxbridge colleges did once own quite a large slice of England) because these institutions keep impeccable records. It is that past management that has shaped your meadow! Over the next few pages you can read about anecdotes and site histories that may prompt your own activities in this area. Let us know if you do!

You can read extended versions of all three articles on the website. Follow the hyperlinks for each article! I know there are others out there who have carried out similar investigations, so if you would like to write a summary of your work to put on the website, we would be very pleased to have it.

The History of a Floodplain Meadow: Bridget Smith (Hemingford Grey Meadow, Cambridgeshire). [Weblink to extended article](#)

I have lived in the village of Hemingford Grey near the River Great Ouse since 1976 and, like many others, walked the 1½ km into St Ives by the ancient right of way across the 50 hectare meadow. Then one day someone asked me why the cattle were being allowed to eat the wild flowers! I realised that local people loved the Meadow, but knew nothing about its history or how it was managed.

I started investigating at the Huntingdon Record Office and looked at the Enclosure Act of 1801 and the Award of 1806 which allocated land in the parish and set the rules. What I found there led to nearly 20 years of delving into the history of what was historically known as the Great Meadow. After Enclosure, management passed from the Manor Court to the Vestry. There were rules preventing the impediment of the passage of floodwaters from the meadow and grazing was allocated based on the acreage of Meadow owned. One cow or two cows under 2 years old or three weaning calves or four sheep per acre or one horse per two acres from 13 August to 13 February, announced every August and February in St Ives by the town crier.



Photograph provided courtesy of Geoff Soden

The Enclosure map showed that there were about 30 owners, who usually let to tenants. Meadow strips changed

hands frequently suggesting that land on the Meadow was a good investment for hay and grazing. At Enclosure, one strip was owned by St John's College, Cambridge. Where colleges own land one has a gold mine as their archives are carefully looked after. These took me back to 1635 when the strips in the Meadow were often very small.

Flooding is important for the meadow as it deposits silt, thus maintaining fertility, but it is equally important that water should move off the meadow quickly. Damaging floods were remembered and often recorded in local newspapers, especially when they breached the Meadow Bank and flooded homes in the village. In 1875 the Meadow flooded in July which carried the cut hay downstream and we also have a mid 20th century memory of hay bales being carried down to St Ives sluice and the farmer being charged for their removal.

The 19th and 20th centuries were times of great agricultural change and the Record Office and the Norris Museum in St Ives were able to produce sale notices and writings showing evidence of wildlife such as Land Rail (Corn Crane) on the Meadow. Archived school log books report when and why children were absent, including for haymaking, so we can see how much the cutting dates varied. On June 26th 1874 there was a "small school through the week, bird scaring in the cherry orchards, and hay-making, the chief causes". And in 1889 the hay harvest was late; July 21st "The attendance is still very poor: the hay harvest is now in full swing and many children are away in consequence."

Interviewing farmers and elderly residents revealed how the meadow was used and managed from 1914 onwards. For instance, though the responsible job of marking out (stumping) of the meadows for haymaking had been done by one person in the early 19th century, by the 20th century this job was being done by individual farmers which sometimes led to heated arguments!

The Meadow was always a popular place for walking and courting and for skating when it froze after floods. It was used as a racecourse for a few years in the late 18th century and in the early days of flying as an informal airfield. For the wedding of the Prince of Wales in March 1873, there were sports on the Meadow and a huge bonfire which left signs of damage for several years afterwards. And the memory of a villager explained that what looked like drainage channels were in fact ditches dug in 1940 to prevent enemy planes from landing!

When I started this study in the early 1990s, I could never have imagined how much information there would be about one piece of land. My enthusiasm led me to visit many other floodplain meadows. I believe that a study of almost every floodplain meadow could give similar information; the history of these meadows gives us an insight into their economic value over the centuries for hay and grazing and some of the reasons for their present ecological value. I have given talks, and produced an illustrated booklet and organise guided walks. I think this has really helped local understanding of such a fantastic site and hopefully will protect it into the future!

Oxford Meads: A long term study by Alison McDonald [Weblink to extended article](#)

In my view Oxford Meads are the best places in the world! The array of flowers in May and June is magnificent, full of bees and other insects and home to curlew and larks as well as reed bunting and cuckoos beside the adjacent river. The Oxfordshire Meads occur on the floodplain of the River Thames from Cricklade in the west to the River Cherwell in the east. At the time of Domesday I could have walked that distance and almost never strayed from a flood-meadow! This article details some of the sources I used to investigate their history further.

My study of the history of West Mead, Yarnton began with a search of records in local museums, libraries and people. I had a fruitful trawl through records in the Bodleian Library where I found the Rev. Vaughan Thomas' notes (1856) on Yarnton tithes and lot meadows. This included an account of how to resolve a problem related to mowing each mead in one day. This custom ensured a fair distribution of plant growth, but when local labour was scarce it led to fighting in the local pubs between the locals and Irish mowers who moved in from the south mowing as they went. Sometimes the fighting went on all night to the dismay of the Rector and some of the villagers. The death of a parishioner finally provided the Rector, the Rev. Vaughan Thomas, with the motivation to get each of the lot meads cut in three days instead of one. It was finally agreed with Sir Henry Dashwood, the Lord of the Manor, that to cut the meads in three days would enable the Yarnton farmers to pay for their own labour, instead of paying for the entertaining of out-of-town mowers with breakfast as well as food and drink all day long. Above all, "the village would be saved from the regular return of Uproar, Drunkenness, Fighting... And the rising generation to whose education Sir Henry has lately contributed so liberally would be saved from the sights of this



Aerial photo showing the lots on West Mead (on left), Oxhey Mead adjacent to and north of River Thames and Picksey Mead to the south (with diagonal stripe). The dark and light lots indicate that they have been cut on different dates. (Royal Air Force. Aug. 1947. Location of negative unknown)

most pernicious practice.” The County Museum, Woodstock (where I found a useful index of field names and small finds) and the County Record Office (where I found references to common rights in Yarnton and the Wolvercote Enclosure Award (1845) but no Award for Yarnton), were also useful.

The most important person I spoke to was Yarnton’s Senior or First Meadsman. He told me of the day to day management of these ancient hay-meadows and mentioned the Tythe Award and map held by the Rector. He showed me the cherry wood balls on which ancient names had been inscribed for the ‘lot ceremony’ when hay was shared between those with access rights to it. The last lot ceremony in which these balls were used was held in a local pub in 1968.



Photo: Alison McDonald

Cherry wood balls used for ‘lot ceremony’ on Yarnton

Flood meadows like arable land were divided into unenclosed strips with a marker or mere stone placed at each end. A strip of hay was associated with a feudal villein’s (tenant of the Lord of the Manor) holding in the arable fields and was based on the amount of land which could be cut by scythe by one man in one day. It was called a ‘customary acre, ‘dole’ or ‘lot’. These were long and narrow to ensure that the mowers did not have to break their rhythm to turn around and this is the same in many meadows across England.

The Domesday Book showed me how much meadow land was in Yarnton at that time and that it was the most expensive land. The Hundred Rolls of Edward I showed me the names of families entitled to a share of the hay, living in Yarnton and Begbroke in 1279, suggesting an uninterrupted management system over a period of more than 700 years. This management had fallen apart by the 20th century. This is demonstrated in an aerial photograph (see previous page). It shows the lots in West Mead in different shades of grey indicating that the lots had been cut on different days and that in some the hay may still have been standing in August 1947.

I found that Walter of Henley compared of the quantity of cheese and butter made in a season in wood pasture, the aftermath of a meadow and the stubble after harvest in the 13th Century and then advocated the use of salt marsh as a more profitable prime pasture for dairy cattle! An understanding on the part of the farmer of the feeding preferences of his stock, and the nutritional value of the different plants which make up a sward, is difficult to determine. However, from Walter of Henley, in the 13th century to Anthony Fitzherbert in the 16th, several writers recommended that the hay should be cut by the Nativity of St. John (24th June) and that it should be properly dried and thatched before it could be spoilt by rain. In an agricultural system which used Saint’s Days to remind farmers of their work for the day, this advice was probably followed throughout lowland England. Anyone now beginning a landscape study in Oxfordshire and other counties should consult the relevant volume of the Victoria County History and the Board of Agriculture volumes published early in the 19th century. I have found both very useful.

Wombwell Ings: A study by John Rodwell [weblink to extended article](#)

The Dearne Valley in South Yorkshire presents a very different picture to that at the Oxford Meadows and Hemingford Grey, but one which is typical of floodplains through the industrial midlands and north of the country. There, no meadows survive and, for several generations, the rivers have been embanked to control flooding of more intensive farmland. In the past century, too, the whole area was dominated by coal mining, many of the collieries located in the floodplain and the land covered by the colliery buildings and those of associated industries. Yet, the history of such places reveals much about how they look now - and even what they might be in the future, particularly with the demise of older heavy industries and the abandonment of land.



Photograph courtesy of Jeff Lunn of Natural England, Leeds Office.

A case study on the Floodplain Meadows Partnership website tells the story of Wombwell Ings (seen right foreground on the aerial photograph) as a case study in how you might yourself trace the history of a floodplain and its lost meadows through maps and documents. It shows how you can start with the current Ordnance Survey Explorer maps and work back through earlier editions of the Ordnance Survey obtainable from your local library or from www.alangodfrey.com. Comparing such maps can show you how field boundaries and drainage systems have changed even over just the past century.

Other earlier maps like those produced for the administration of the Tithe Commutation Act of 1836 and Enclosure Awards, which you can obtain from your local record office or from The National Archive at Kew, vary in quality but often have field names, a valuable source of information about past use, landscape character and ownership. Tithe maps can also tell you whether fields were under arable or grass, maybe meadow.

From 1885, Annual Parish Agricultural Returns and the much more detailed MAFF National Farm Survey of the Second World War will reveal the extent of pasture and meadow on parish or farm scale and much about the livestock reared in floodplains and the condition of the land.

Historical explorers always have to be ready for surprise discoveries of maps and documents and, in the Wombwell Ings case study, it emerged that Trinity College Cambridge had once owned part of the floodplain and that their library had a rich archive of maps and letters telling of the use and ownership of the floodplain meadows through the 18th century. Medieval manorial or estate records may also exist or charters produced for particular important landowners. In Wombwell, the lord of the manor and a nunnery both commissioned detailed accounts of their property enabling us to understand the landscape of the early 1500s. The message of all this is to look again at what might seem just an ordinary floodplain. It may prove to be uncommonly interesting!

A comment from Jen Heathcote, Head of Research Policy (Freshwater & Wetlands) English Heritage

Floodplain meadows are quiet and unassuming landscape features whose physical and ecological characteristics contain a range of information about people's relationship with, and manipulation of, their environment over many centuries. They exemplify the intimate relationship between human activity and the natural environment, and give clues about past agricultural traditions and land management practices. Although archaeologically elusive, earthworks, field patterns and stone features can provide physical evidence of hay and water meadow locations, whilst biological remains (i.e. plant parts, insects and snails) may be contained within the soil or reworked in nearby features (e.g. ditches, wells) providing insight into environmental conditions and ecological communities. These are, of course, only ever a snap-shot of what the meadow vegetation would have looked like. Nevertheless, they are valuable in providing analogues for archaeological assemblages and also, potentially, showing us communities that once existed but which have no modern parallel.

Despite their value and significance, designation under the historic environment system is not always appropriate, and we recognise that the best protection for these increasingly rare landscape features is their active management to promote specific ecological communities which, if sensitively handled, may also benefit historic elements of the landscape. The legacy of features inherited from their management can be locally distinctive and contribute to landscape quality and character and useful cross-over work could be done to see whether some of the tools developed for use by historic environment professionals (e.g. Historic Landscape Characterisation) could be useful for identifying opportunities for rehabilitation/restoration/re-creation for nature conservation purposes.

Floodplain Meadows Partnership Events in 2011

Workshop on '**Management of Floodplain Meadows**', in Shropshire aimed at professional conservation staff, site managers and owners. A practical management and monitoring workshop with visits to established and restored meadows. Course dates May 16th-18th 2011, more information and book through the FSC website on <http://www.field-studies-council.org/professional/2011/courseinfo.aspx?id=422>

Workshop on **The Natural History of Floodplain Meadows** course (3-5th June 2011), aimed at a wider audience where we will explore historical aspects of meadows and looking into the archives as well as looking at plants, soils and past and current management practises. John Rodwell will be leading this course (but please note it is not a course on how to use the NVC in meadows). Other contributors will include the FMP team, and landowners. For more info and a booking form go to <http://www.field-studies-council.org/2011/courseinfo.aspx?id=391%20%20>

We are attending one of Natural England's **Open Days** during the Fritillary flowering season at **North Meadow** (16th April 2011) and **Fritillary Sunday at Ducklington Mead** (Oxfordshire, 17th April). We will also be running our annual **Fritillary counting day** (19th April) and are once again asking for volunteers (free lunch provided). No previous experience necessary. Please get in touch if you want to come along!

Current research in the department

We are going to be involved in a number of research projects next year. These include:

FUSE: A research project funded by a research council and led by Reading University. The aim is to monitor soil temperatures in a floodplain meadow with a dense array of sensors to ascertain whether soil temperature is a useful guide to soil hydrology and whether it is a feasible option for monitoring and characterising floodplain soils. The FMP

team will be supervising the ecological inputs to this work and organising a meeting of local stakeholders to identify gaps in knowledge about how a particular site functions.

Wetland Vision and Climate Change: A consortium of conservation bodies pooled their resources to produce a Wetland Vision recently (<http://www.wetlandvision.org.uk/>). A piece of research has now been commissioned to investigate the impact of climate change on UK wetlands over the next 50 years and the implications it may have for wetland management and conservation. The work is being led by Prof Mike Acreman at CEH Wallingford with FMP team contributing a case study based on a floodplain meadow and some advisory inputs about the relationship between soil hydrology and vegetation.

Defra are hoping to commission Rothamsted Research (North Wyke) to undertake a review of information relating to the **Restoration of 'purple moor-grass and rush pasture', fens and associated habitats** for delivery of biodiversity and ecosystem services. The FMP team plan to make inputs relating to fen meadows and related habitats.

Science Corner: When do you cut a meadow?

It became apparent during our workshop in 2010, that the issue of when to cut a floodplain meadow was not a simple one. Some managers follow agricultural tradition and cut as soon as the hay has reached its optimal state in terms of feed value (typically last week of June, if the weather is conducive), many delay their cut into July in response to scheme agreements, whilst others choose to cut very late (August) for aesthetic reasons, to allow certain species to set seed or to encourage fauna. There are a number of factors to take into account when making your decision, and here we consider these different elements and discuss some of the work we are engaged in aimed at providing clarity on the issue.

Nutritional value of the hay crop and the nutrient cycle

The best time to cut a hay meadow to achieve the best feed quality for stock is as soon as the grass has started to set seed but before the seed has dropped. Historically this is what farmers have always aimed for; in a poem of 1926 ('The Land' by Vita Sackville-West) it was expressed as "You shall cut your hay, when grasses stand, in flower, but running not to seed." In the English lowlands, when the spring has been warm and dry this may be as early as mid June, if the weather has been cold and wet it may not be until early July. If the hay is left to stand past being "ready" then its nutritive value will fall quite quickly, partly as a result of seed shedding and partly as a result of mobile nutrients, such as nitrogen being taken back into the base of the plant, where it is stored for the following year. Late cut hay will be of little value for productive stock (dairy, beef and sheep enterprises) but may be favoured by horse owners, who simply want roughage to satisfy appetite rather than nutrition as such. One consequence of leaving hay to stand after it is ready and then cutting it late, is that there will be much reduced nutrient removal from the site. Consistent late cutting will therefore result in increased fertility of the soil, which usually results in the loss of species richness over time. Even without the nutrient factor, persistent late cutting can reduce species richness by allowing dominance of some coarser species that bulk up later in the summer (e.g. *Filipendula ulmaria*), shading out other species and gaining a strong competitive advantage.

Nutrients enter floodplain meadows from numerous sources; flood-deposited silts, farm-yard manure, and atmospheric deposition for example. Removal of the annual hay crop balances these inputs by exporting nutrients in the form of biomass. If the amount removed as hay is reduced through leaving the hay to stand beyond its optimal cutting date, then the nutrient status of the meadow soil will rise and the vegetation will respond accordingly with coarser species excluding the smaller herbs. The Partnership has a number of trials in place to try to quantify these effects. It follows that early hay cuts can also be used as a way to reduce the fertility of a meadow by removing the standing crop when it is at its most nutritious, and therefore can be a useful management tool to have up your sleeve.

Maintaining the quality of the hay crop for stock (as was the traditional practice of farmers over the generations) is perhaps the best way of ensuring the conservation of a diverse plant community. The requirement for a timely cut is a particular feature of floodplain meadows because they rely so heavily on hay removal for maintenance of their nutrient balance. Cutting dates in dry meadows are more flexible, because those systems do not receive regular influx of nutrients from floods.



Photo: Adrian Markham

Setting Seed

Occasionally, meadow managers choose to leave the hay cut as late as August to allow the plants to set seed. However, it should be borne in mind that of the eighty plant species regularly encountered in floodplain meadows, only a handful are annuals or biennials. The vast majority, including all the keystone species are perennial and most of them are very long-lived (some scientists estimate forbs can live to 500 years and some grass clones to 1000!). Annual seed rain therefore has a very minor role in maintaining the plant community. The perennial species do need to set seed occasionally, and this will happen under normal agricultural practice whenever there is a wet summer (e.g. 2007, 2008). There may also be some seed rain from uncut margins so it is generally unnecessary to deliberately leave the hay itself to stand for this purpose.

Ground nesting birds

Ground nesting birds may not have fledged chicks until early or even mid July and some advice says not to cut meadows until mid July to ensure that ground nesting birds have had time to fledge. HLS agreements are set at a hay cut date of 1st July (or even 15th July) for this purpose, but if you know you have ground nesting birds on your site in any one year, then you may want to think about the timing of the cut and also the way in which the hay is cut. Perhaps cutting in blocks or strips, leaving the nesting areas until later or even uncut that year. It should not be necessary to delay the cut of the whole site however. Cutting from the inside out to allow time for small animals and birds to get out of the way is another method occasionally used. Of course the use of such techniques may be dependent on the person responsible for cutting the hay and is probably only an option where financial support for conservation management is available. In some fields, it may be too fiddly to be viable even then!



Photo: Mike Dodd

A pattern cut like this over time could be beneficial to meadow plants by providing diversity in the cutting times across the meadow such that different areas are cut at different times in different years. It is not advisable to leave the cutting of meadows until mid July consistently 'just in case' there are ground nesting birds, as this could upset the balance of nutrient cycling as described above and lose some of the special plant interest of the site. The increased productivity of a nutrient rich system would also not favour the birds as many are not suited to rapid early grass growth in spring.

Invertebrates

There is a perception amongst some conservationists that meadows are a less interesting habitat for invertebrates than pastures, because the habitat is devastated when the hay is cut. Therefore, there are arguments from entomologists that later cuts can improve invertebrate populations by providing refuges for longer. However, meadows are uniquely rich nectar sources during the flowering period, and many species (particularly hoverflies and weevils) rely on such sources of food. Many are specialised to feed on particular species, so as a general rule, the more diverse the plant community, the more diverse the invertebrate community. Many species of Lepidoptera use meadows at all stages of their life cycle (e.g. chimney sweeper moth, burnet moth, orange tip butterfly and small copper). Invertebrates benefit overall from plant diversity within a grassland and from a diversity of grassland types in the wider landscape i.e. a mosaic of meadows, pastures, road verges and hedge banks. Therefore, where there is a dearth of nectar and pollen sources in the near vicinity of a meadow, then the focus should be on re-establishing these, rather than risking late cuts in the meadow itself, which will result in a decline in the value of the meadow plant community to invertebrate populations. In terms of meadow management, the maintenance of plant diversity is key.



Photo: Mike Dodd

The weather

In recent years (2007-2009,) weather conditions for hay making have been good in June, but then spectacularly bad in July. Therefore sticking rigidly to pre-defined dates can be counter productive. If hay is not cut during the summer and left as a wet crop that cannot be removed due to poor ground conditions even in the autumn, then the impacts on species diversity can be disastrous. Detailed monitoring data from North Meadow, collected over the past 12 years, shows us that areas not cut for just a single year suffer a significant decline in species richness, losses are greatest amongst the smaller herbs and less competitive grasses. This is due to both the effects of shading and changes in nutrient status. If this pattern is repeated, then long term declines can be observed. However, species diversity can be recovered by ensuring a prompt, or even early, hay cut the following year to remove the build up of

nutrients and thatch. Of course you can have wet Junes too and in those years it is better to leave the hay standing till July when hopefully it will get a chance to dry. It is not a good idea to cut early when the soil is damp; firstly because it is difficult to make decent hay in such conditions, but more importantly, you would risk damaging the soil structure by compacting it with heavy vehicles (particularly hay trailers); this can take decades to reverse.



Hay cutting on the Shannon Callows, Ireland.

Photo: Richard Jefferson

Control of aggressive species

Cutting can be used to help control some species. For example, cutting thistles before they flower controls their spread. We are currently investigating the role that early and late cutting play in the susceptibility of the meadow to invasion by large competitive sedges (*Carex acuta/acutiformis/riparia*). Early cutting may also be used to control the abundance of tall species, such as false oat grass (*Arrhenatherum elatius*) which can make a sward coarser and less species rich especially when cutting is regularly delayed.

What do other people do?

We collect management data annually from the five Floodplain Meadow SAC sites in the UK, and also from a number of the other sites we regularly survey. Most sites were cut in early July this year (as a result of HLS restrictions), but at least this was better than the previous three years when several were not cut until August, or were not cut at all, due to the persistently poor weather! There seems to be quite a bit of evidence to show that historically meadows were cut in June more consistently than they are now (see article on page 2).

The answer?

So what is the best solution? Well, as ever it really depends on your site objectives. If the overriding concern is a functioning meadow management unit with a farmer who is happy with his/her crop and the maximum plant species diversity, then the hay should be cut as soon as it is ready (before seed drop). This will result in a diversity of cutting dates over a number of years which will benefit the plant species diversity. It should be borne in mind that such meadows were historically prized in the traditional agricultural system because of their naturally high productivity, which gave good yields of high quality hay and this cultural heritage should be an important consideration in the management of meadows today. It is the very reason we have such species rich systems and we ignore past management practises at our peril!

Please don't forget that if the farmer isn't happy with the quality of the crop and your management infrastructure is lost, then the whole habitat could be lost in just a few years, because floodplain meadows are absolutely reliant on the annual cycle of cutting to sustain their plant biodiversity. We often go to sites and advise managers to consider varying the time of the hay cut to enhance diversity. Some years, cutting early is good, and gives early maturing species, such as meadow foxtail (*Alopecurus pratensis*), a competitive advantage, whilst in other years, weather-delayed cutting benefits some of the later-developing species, such as the common bent (*Agrostis capillaris*). Variation of cutting date is probably beneficial to the diversity of the sward, though it is a challenge to demonstrate this scientifically. The Floodplain Meadows Partnership is trying to gather evidence from across the country so that we may be in a position to tackle this issue. To do this, we rely on the good will of site owners/managers in passing the information on. Please keep us posted.

The best current advice is probably to be guided by the weather. If the hay is ready and the weather good, then go for it as soon as you can, accepting that once every few years, the weather will be adverse and that you should wait till it improves. A late cut once in a while is not a bad thing and indeed may have positive results, but in floodplain meadows should probably never be the norm.



Hay Time: a new book for an old habitat

Of the many wonderful habitats and landscape features that the Yorkshire Dales are renowned and loved for, it is arguably the flower-rich hay meadows that are the most iconic. Hay meadows are the product of years of careful management by generations of Dales farmers to ensure ample winter fodder for their livestock. Visually stunning and teeming with wildlife, they are also a living and vibrant link to the past, rich in folklore and tradition and an important part of our rural heritage. The Yorkshire Dales Millennium Trust has recently published Hay Time in the Yorkshire Dales. It is filled with superb photos, charming illustrations, beautiful artwork and evocative poetry. It has a foreword by John Craven, and includes contributions from Dales farmers, John Rodwell, Roger Smith, authors such as Bill Mitchell and David Joy, academics with a specialist interest, and many others. Hay Time in the Yorkshire Dales is softback, 270pp, full colour throughout and costs £12 (plus £2 p&p). You can buy a copy from

YDMT on 015242 51004, email info@ydmtd.org, or online at www.ydmtd.org.