

# NEWSLETTER

Winter 2014/15

In this issue: be a floodplain meadow ambassador at very low cost (this page), get the dates for fritillary counting, workshops and bee surveys for this year (page 2), find out about the latest in research from the Somerset Levels and a project that links with France (page 3) and come to a workshop on our review of the *Calthion* in England and Wales. Finally our major article this season is on insects of floodplain meadows - a piece designed to raise questions and prompt debate rather than answers. Your feedback would be enlightening!

## Floodplain Meadow Ambassadors (there will be 'Ferrero Rocher' at our reception!)

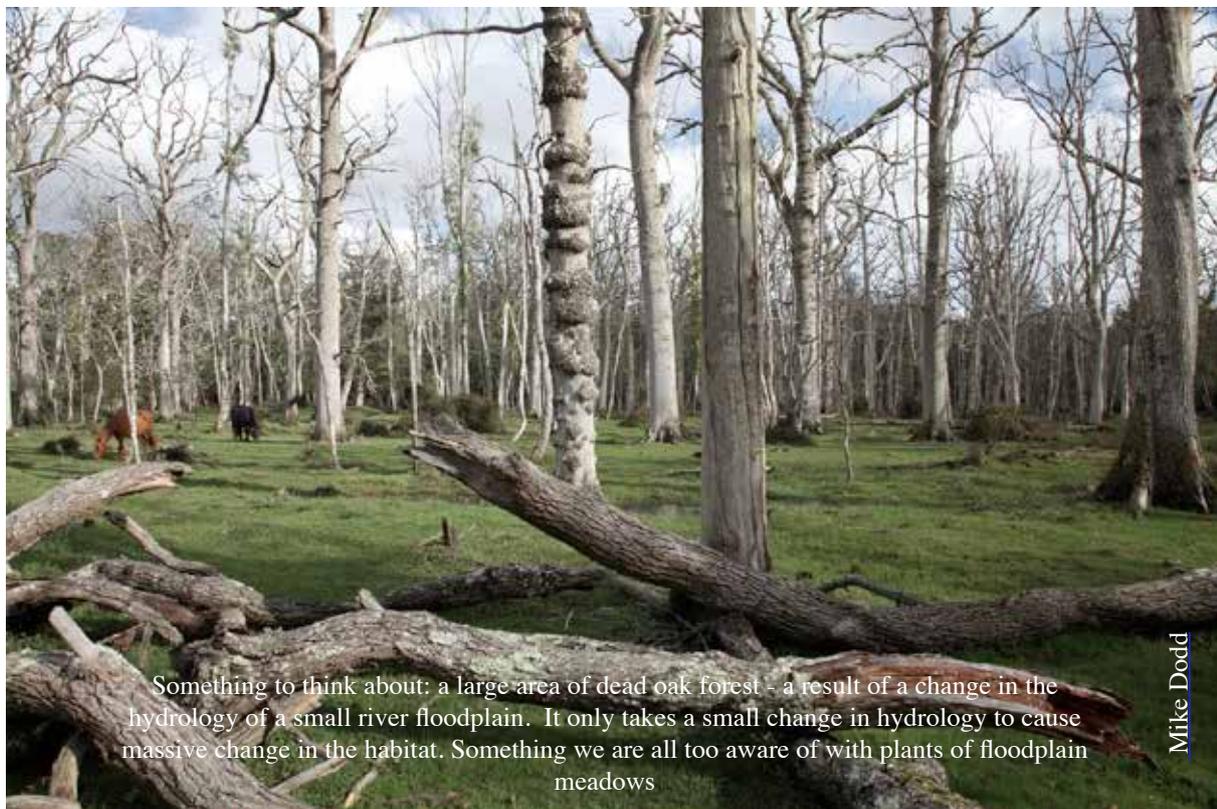
As part of creating a legacy for our project, we have secured funding from the Esmee Fairbairn Foundation for 24 floodplain meadow ambassadors to take part in a 2 year vocational training programme, designed to give more in-depth knowledge of the way soils, water and plants interact within a floodplain meadow environment. We hope that this will result in a spread of specialists in this subject, generating more restoration projects and helping with monitoring, management and restoration advice at a local level. The course will run in two phases, with phase 1 starting this year (12 ambassadors), and running for 2 years, and phase 2 starting in 2016 and running for 2 years. The cost is heavily subsidised, and is a fantastic opportunity to work with others interested in this specialist subject.

The course will enable delegates to gather appropriate field data and provide an evidence base on which to make management decisions. It is an excellent opportunity to develop skills and CV, working with national experts in the science of ecohydrology to benefit floodplain meadows.

**Deadline for applications is 30th Jan 2015**

More detail about the course can be found here <http://www.floodplainmeadows.org.uk/content/events>

Come and be part of an exciting network of specialists.



Something to think about: a large area of dead oak forest - a result of a change in the hydrology of a small river floodplain. It only takes a small change in hydrology to cause massive change in the habitat. Something we are all too aware of with plants of floodplain meadows

Mike Dodd



a million voices for nature



# To Russia with love!

To build on our recent visit to the floodplain meadows of Russia, Irina Tatarenko put together a bid to the Natural Environment Research Council's International Opportunities Fund to build a network of Russian researchers and meadow managers to raise the profile of the habitat, which is widely at risk of dereliction there. We were notified just before Christmas that her bid was successful and the Research Council has agreed to pay £38k toward setting up the network. Irina will spend several weeks in Russia during 2015 to co-ordinate the effort. There is a great tradition of ecological research in Russia and some of their datasets are priceless because they have been collected consistently over so many years. However, there has been little coordination between the various groups up until now. The network we hope to create will allow Russians interested in meadows to share information, support one another and liaise with other European groups to inform their future research and management. At a time when cultural and scientific relations with Russia are under considerable strain for political reasons, we are very grateful to the Research Council for deciding to support this initiative. We will keep you informed of progress.

## Flight of the Fritillary

Once again we will be running our fritillary counting and bumblebee surveys project in 2015. This will include winter workshops, fritillary counts and bumblebee surveys.

### Winter workshops

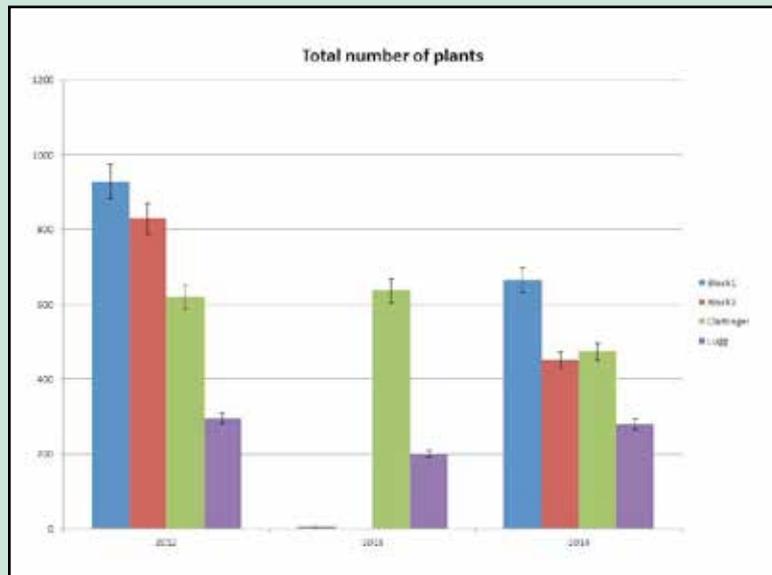
We will be running two winter workshops in February 2015 to summarise findings from 2014 and to plan this year's activities. Please come and join us if you can. Herefordshire: 20th Feb and Wiltshire 25th Feb. Contact us for more information.

### Fritillary counts

**Lugg Meadows Herefordshire** Saturday 18th April. A family fritillary day with guided walks and fritillary counting.

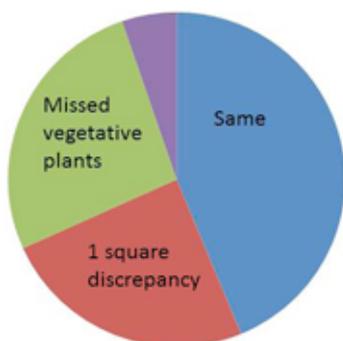
**Clattinger Farm:** Sunday 19th April

**North Meadow:** Thursday 23rd April



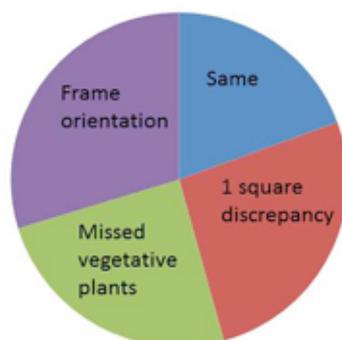
Total fritillary numbers at each site in counted quadrats 2011-2014. Volunteers have observed fritillary dormancy on an unprecedented scale see North Meadow Blocks 1 and 2 counts 2013 compared to 2014)

### Clattinger Farm



Not significantly different

### North Meadow



Significantly different  
 Quadrat frame alignment  
 High % non flowering

Other fritillary events around the country include Ducklington Fritillary Fair – Sunday 19th April, Broad Meadow Staffordshire and Motte Meadows Fritillary walks (25th and 27th April) <http://www.floodplain-meadows.org.uk/files/floodplain/Fritillary%20Walks%202015.pdf>

### Bee surveys

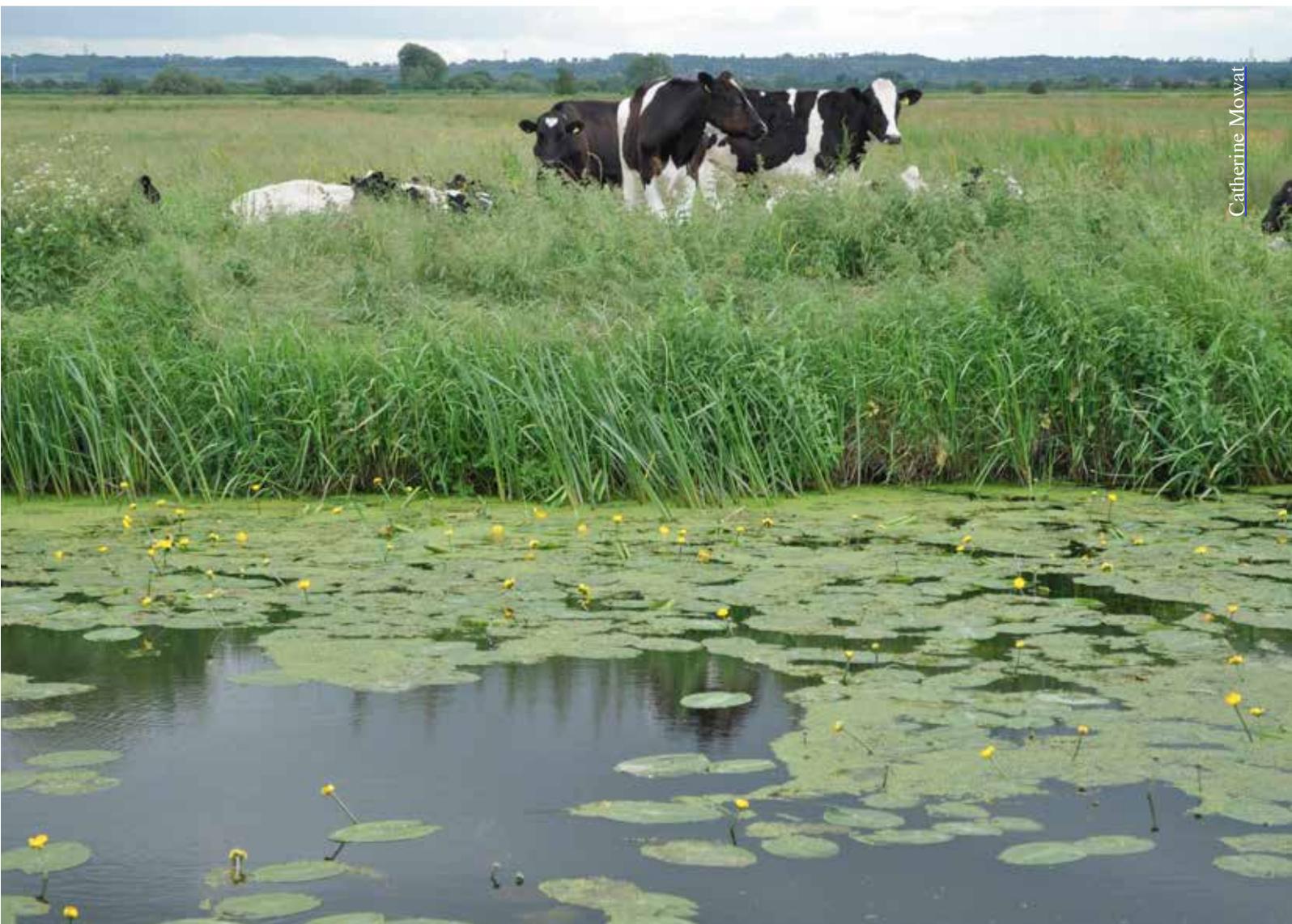
Dates for the bee surveys will be decided shortly and we always need more surveyors, so please consider coming and joining us. You can do as much or as little as you like, and we are all learning together.

Statistical robustness of the volunteer data is demonstrated on Clattinger Farm (not significantly different), but not North Meadow in 2014, due to problems with quadrat alignment.

# Research on the Somerset Levels and Northern France

Over the past two years three NGO's (Somerset Wildlife Trust (SWT), Royal Society for the Protection of Birds (RSPB) and the Farming and Wildlife Advisory Group South West (FWAG SW)) have been working closely together on the Somerset Levels and Moors, funded by the EU INTER-REG channel through a scheme known as the Value of Working Wetlands, or WOW for short. INTERREG schemes encourage cross-fertilisation of ideas between countries, and WOW partners also include five organisations in Picardie, Normandy and Brittany and one in Devon (Devon Wildlife Trust). Much valuable research and advisory work has been undertaken over the past 2 years, and results are in the process of being analysed. A final conference is being planned in March 2015 in France, but there will also be workshops in Somerset prior to this to expand on the findings. The areas of research include assessing ecological networks, looking at forage value, ecosystem services, snipe productivity and carrying out advisory work with farmers. To find out more about the project follow the link here <http://www.floodplainmeadows.org.uk/files/floodplain/Research%20on%20the%20Somerset%20Levels%20and%20Northern%20France%20web%20text.pdf> or contact Catherine Mowat as below.

For further information about the above research, about other floodplain studies being carried out in northern France, and about the workshops, please contact Catherine Mowat, Brue Valley Farming Liaison Officer for the Somerset Wildlife Trust on 01823 652416, or [Catherine.mowat@somersetwildlife.org](mailto:Catherine.mowat@somersetwildlife.org)



Catherine Mowat

# IN BRIEF IN BRIEF IN BRIEF IN BRIEF IN BRIEF IN

## **Bridget Smith In Memorandum**

Bridget Smith died peacefully on 31st December after a brief illness. Bridget flew the flag for floodplain meadows for many years, particularly on her home turf of Cambridgeshire and her local meadow, Hemingford Grey Meadow. She produced a booklet about the wildlife and history of the meadow, which is an excellent summary and represents one of only a handful of published documents highlighting the historic value of floodplain meadows as well as the wildlife value. She gave talks and guided walks about the meadow and tried to raise their profile where ever she could. She contributed greatly to our project, including helping with newsletter articles and projects looking at the heritage value of meadows. She will be greatly missed.

## **Floodplain Meadows: beauty and utility. A technical handbook**

Our Technical Handbook is in the final phase of production. This has been some years in the development, but hopefully we are now on the home run. The book will cover hydrology, nutrients, soils, management, restoration, history and much more. It will be a go-to guide for anyone involved in floodplain meadow, their management, history and restoration. We hope to launch it in June this year and copies will be available free of charge. The development of this book has in part been funded by the Environment Agency and the RSPB. Watch this space for more information.

## **River Restoration Conference 2015**

We are going to be talking at the River Restoration Conference this year 19th-20th May 2015 on the second day in the session on "River Restoration and Biodiversity"

Our talk will cover the multiple benefits to society that floodplain meadows deliver such as biodiversity conservation, flood amelioration, nutrient cycling and habitat for pollinators. Using case studies from the UK, we will demonstrate that these habitats can be restored, given the appropriate soil and water conditions. We propose that where a functional floodplain is being rehabilitated, floodplain meadows offer a sustainable land-use, delivering a wide range of benefits to society and their restoration should perhaps be considered and integrated more widely alongside river restoration schemes.

## **CAP REFORM, COUNTRYSIDE STEWARDSHIP & PROSPECTS FOR UK GRASSLANDS**

**UK Grasslands Forum meeting 15th April York. Contact John Rodwell [johnrodwell@tiscali.co.uk](mailto:johnrodwell@tiscali.co.uk)**

With the generous cooperation of Natural England, the next UK Grasslands Forum meeting will be held at their York offices on Wednesday 15 April 2015, 10.30 – 3.30. The main focus will be on CAP Reform & Countryside Stewardship, the recently released information on which can be found on <https://www.gov.uk/government/collections/common-agricultural-policy-reform>. Many details are yet to be decided but Steve Peel, the Senior Specialist in Eco-agronomy for Natural England and his colleagues will outline the priorities, eligibility and structure of the proposals. There will then be ample time for discussion of how the new framework will serve the sustainability of UK grasslands – their wildlife value, cultural importance and aesthetic appeal as well as their productivity. And there will be opportunity to hear how past agri-environment funding has helped – or not – your own vision and work, and what your hopes might be for the future.

The meeting will also provide an opportunity to hear about the revision of the EUNIS habitat classification being undertaken by the European Environment Agency and the DG(Environment) Red List of European Habitats. Both these projects have implications for how we understand the range of grasslands present in the UK and how vulnerable they are to ongoing threats and a changing environment (NB this meeting is now fully booked, but if you wish to register an interest and be considered for a cancellation space, contact John Rodwell

## Floodplain meadows and pollinating insects

During site visits, courses and meetings, we often find ourselves in a debate about the value of floodplain meadows for invertebrates. We have over the years had discussions with various organisations and individuals with an interest in this subject about what is currently known, and what management advice should be. This can be a controversial subject; we know from our own data that regular late cuts reduce the plant species diversity of floodplain meadows, but many entomologists tell us that the hay cut is a drastic event for invertebrates and that, combined with potentially intensive grazing for a period followed by flooding means these habitats can be uninviting for invertebrates completing their life cycles. General management advice for increasing the diversity of invertebrates should focus around leaving the hay cut until later on in the summer, leaving uncut margins/areas and even considering pasture management rather than a hay cut.

However, all of these options, whilst possible, run the risk of reducing the botanical species diversity of a habitat that is already very rare in the UK.

A recent article published in *Antenna*, the Journal of the Royal Entomological Society (Jefferson and Porter, 2014), looked at this matter in relation to specialist flower feeding insects in particular in some detail. It looked not at what hay meadows didn't have, but what **potentially they do have**. We felt this article was very pertinent to our debate, and so the rest of this newsletter is given over to summarising this paper and its conclusions.



Copyright Roger Key

### What is known?

Meadows are well known for their value for species foraging for nectar and pollen and their role in supporting insect pollinator populations which are in global decline (Potts et al 2010). In the UK, loss and fragmentation of flower-rich semi-natural grasslands, including meadows is considered to be one of several key factors in the decline of bumblebees (Carvell et al 2006). It is assumed that species that feed widely on nectar and pollen of flowers (tourist species) are using meadows opportunistically and that the habitat is important seasonally for insects such as sawflies (*Hymenoptera*), hoverflies (*Diptera*) and various beetles (*Coleoptera*).

However less is known about which species depend on the flowers and seeds to complete their larval development; or about adult insects where particular meadow plants are the main food source.



Copyright Roger Key

Common carder bee, *Bombus pascorum* an example of a tourist species using floodplain meadows throughout the season (our own surveys of bumblebees on floodplain meadows show us that even after the hay cut, these species are using other resources around and on the meadow.



larva feeds on the seeds of yellow rattle, and is also able to complete its larval stages before the hay is cut.

Some meadow plant species re-flower after the hay has been cut, such as devil's-bit scabious (*Succisa pratensis*), red clover (*Trifolium pratense*) and yarrow (*Achillea millefolium*). Some insect species would be able to use these flowers therefore, such as *Griselda stagnana*, a micromoth, whose larva feeds on the flowers and seeds of devil's bit-scabious.



Orange tip butterfly *Anthocaris cardamines* has larvae associated with the flower and seeds of the cuckoo flower

### Decision making in site management

The authors conclude that given the rarity of the meadow habitat and the potential threat to it from changing the management routine, the best option to improve the chances of invertebrates in general is to concentrate on creating additional flower-rich grassland or similar habitat in the surrounding countryside for both generalist flower-visiting species and, where possible, specialist flower feeders. Not least because insects capable of exploiting any new management regime may never colonise due to the highly fragmented nature of the existing resource.

There are of course management options that can be considered to improve the diversity of the insect and wider invertebrate interest within an existing meadow.

1. Cut all or parts of fields, such as the margins later, resulting in greater structural diversity and providing a later supply of nectar and pollen.
2. Leaving partial uncut margins or fields which would also then be subject to aftermath grazing later in the year, but rotating these areas each year so the same areas are not late cut regularly.
3. Occasionally substitute a hay cut with grazing animals, prolonging the flowering of certain species as material is removed more slowly through grazing compared to hay cut.

The authors stress though that effecting such changes should be carefully assessed and should not proceed if they may have detrimental impacts on the meadow plant community.

### Seed harvesting

There is guidance available to help minimise the impacts of seed harvesting for the use of meadow restoration on invertebrates (Crofts & Jefferson 1999, Waring 1990).

### Comments and debate?

If anyone has thoughts about this article, about the wider issue and about other invertebrates and their use of floodplain meadows, please get in touch and join the debate. Some questions to ponder based on feedback already received might be:

1. Is the larval stage critical (pupation is risky in hay meadows, as is overwintering unless burial in the soil is an option as there are few refuges from floods)?
2. Could floodplain meadows be a sink habitat, mostly dependent on regular immigration from other habitats nearby?

3. Is the main fauna of floodplain meadows likely to be species like click beetles which complete their egg, larval and pupal stages amongst the root layer and emerge as adults to feed on flowers and mate for a brief period in spring/early summer?

## References

- Carvell, C, Roy, D B, Smart, S M Pywell, R F, Preston, C D & Goulson, D 2006 Declines in forage availability for bumblebees at a national scale. *Biological Conservation* 132: 481-489
- Crofts, A & Jefferson, R G (eds) 1999 *The Lowland Grassland Management Handbook*. English Nature/The Wildlife Trusts, Peterborough  
<http://publications.naturalengland.org.uk/publication/35034>
- Jefferson, R.G. & Porter, K. 2014 Insects and meadow flowers. *Antenna* 38, 149-157  
<http://www.floodplainmeadows.org.uk/content/invertebrates> (scroll to bottom of page)
- Potts, S G, Biesmeijer, J C, Kremen, C, Neumann, P, Schweiger, O & Kunin, W E 2010 Global pollinator declines: trends, impacts and drivers. *Trends in Ecology and Evolution* 25: 345-353
- Waring, P 1990 Observations on invertebrates collected up during wild flower seed harvesting in a hay meadow with particular reference to the butterflies and moths. *British Journal of Entomology and Natural History* 3: 143-152 <http://www.biodiversitylibrary.org/page/29946779#page/192/mode/1up>

## The *Calthion* in the UK: the findings from a review of the floodplain meadow communities of the NVC - a workshop invitation

A reappraisal of grassland subcommunities on floodplain meadows was one of the target outcomes for the Floodplain Meadows Partnership (FMP). This work was undertaken in 2 phases. Phase 1 was a revision of the *Sanguisorba officinalis-Alopecurus pratensis* (MG4) community. Phase 2 was a revision of the *Calthion* (MG8 and associated communities) through a complete revision of grassland at the damper end of the hydrological gradient. We were advised to ignore the MG8 of the NVC and start again with a complete overhaul of the *Calthion* alliance in England and Wales.

Quadrat data were collated from a large number of surveys across England and Wales including data from the wettest end of the 'grassland spectrum' where spike rush *Eleocharis palustris*, reedgrass *Phalaris arundinacea*, sweet reed grass *Glyceria maxima* and large sedges e.g. *Carex acuta* and *C. acutiformis* were prevalent in situations that were not permanently water-logged and thus not 'true' swamps.

The units defined by this analysis have been compared against recognised continental plant communities from a wide spectrum of alliances to allow their placement within a wider European context. We would like to present our findings to anyone interested, but particularly those interested in end use of the NVC and therefore we have organised a workshop on 4th March 2015 near Oxford.

### Workshop objectives

- Take the opportunity to share the findings from the review of the MG4 community
- To familiarise attendees with the methods and findings from the review of the *Calthion* in England and Wales.
- To agree new community groupings and appropriate names for them.
- To agree an appropriate mechanism for disseminating the findings to appropriate end users.

If you would like to come and join the debate, please get in touch