



# National Plant Monitoring Scheme

## Monitoring our wild flowers

## Newsletter - Summer 2018

### Welcome

Welcome to the 2018 National Plant Monitoring Scheme newsletter! 2017 was another good year for the scheme as volunteers continued to sample the UK countryside, helping us to understand how our environment might be changing, and what this means for our wild plants. This newsletter is a partnership extravaganza, with lots of news about how NPMS methods are being embedded within the landscape monitoring plans of several large land-owning or land management organisations. Great news about the future of the scheme is also revealed!

### Introduction

Surveyor enthusiasm throughout 2017 continued to overwhelm us, and we hope that we have kept pace with all of your questions, data submissions and requests! Last year we were able to make squares available across the UK to around 200 surveyors on our waiting list, which is another great stride forward for our survey.

### Great news for the NPMS!

The NPMS partnership spent a lot of time over the winter negotiating the next 5 years of the scheme, and funding from JNCC has now been secured until 2023. We have lots of exciting things planned for this next 5 year phase, including various updates to the website, hopefully making it easier for surveyors to view data and interpret them.

The next phase of the scheme will also see a big focus on learning how to get the most from the plant community data that are so carefully collected by NPMS volunteers, and, by 2023, we expect to see NPMS data being used in national indicators of plant diversity in the UK countryside!

You can keep up-to-date with our research outputs at:  
[www.npms.org.uk/content/conservation-and-research](http://www.npms.org.uk/content/conservation-and-research)



*Armeria maritima* -- Sea thrift  
Photo: © Heather Lowther



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### THIS ISSUE:

- p.1 Great news for the NPMS
- p.2 New partnership working for the NPMS
- p.3 Rare, scarce and unusual: an overview of some interesting NPMS finds
- p.7 NPMS all a-flit in Omagh!

# New partnership working for the NPMS

Throughout the last three years interest in the NPMS from large land holding organisations, such as the National Trust, and the protected landscapes network has been growing. As shown in last year's newsletter, there is a large overlap between our squares and, e.g., the National Trust; another large number of squares fall within National Parks and AONBs.

Over the next five years the NPMS partnership will be working with a number of organisations to increase volunteer support and NPMS coverage in targeted areas which may be regarded as geographically remote, and which often have a prevalence of some of the upland habitats for which we have fewer plant community records.

Some plans are still under development, but we are very pleased to be working with the Galloway and Southern Ayrshire UNESCO Biosphere Reserve and with the South West Scotland Environmental Information Centre to deliver more training and support to volunteers in this area, with the ambition of enhancing NPMS coverage and creating a strong network of NPMS volunteers. Similarly we are working with the Cumbria Biodiversity Data Centre, and over the next five years we hope to see increased training and a number of coastal squares, particularly in the Solway AONB region, being adopted by volunteers.

Plans are also underway with the Yorkshire Dales National Park and this has already resulted in two training days and a number of new recruits to the scheme. We are currently finalising plans with other national parks and really hope that this approach will see new surveyors accessing the scheme, thus helping to build our understanding of what is happening to wild plant communities in some of our most iconic landscapes.

## Notes from Cranborne Chase AONB

"Cranborne Chase AONB has eleven NPMS squares, and all bar one have been allocated to volunteers. This perhaps reflects the fact that the landscape of the AONB constantly beckons you and asks you to explore. One of the great things about the scheme is its accessible nature. Over a third of the 1200 NPMS volunteers say they are new to biological recording. The way the scheme is designed and the support materials provided help beginners to get involved.

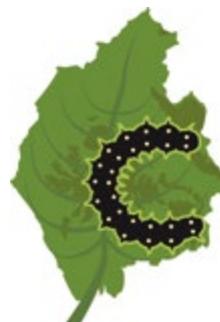
Volunteers have told us that the scheme is helping them to discover new places on their doorstep and helping them understand their local environment more."

## And the surveyor perspective...

"As the weather warms up the diversity of flora within the Cranborne Chase AONB is starting to show. Over the bank holiday I enjoyed a wonderful walk in my local woods, the warm air scented with bluebells and primroses. Jack by the Hedge and Stitchwort acted as a white foil to the blue hues with red campion accessorising the colour palette. My evening walks around the village continue to bring me joy. The hedges and road verges are full of violets, celandine and some early purple orchids. Sadly the windflower has gone over. In a few weeks time I will be taking my annual walk onto the downs to revel in the diversity of orchids. All of this is a gentle reminder that this year I will be revisiting my NPMS square soon."

## An update from the Cumbria Biodiversity Data Centre

CBDC is developing new biological recorders with the National Trust in Whitehaven and the Solway Coast AONB. They have already begun their identification training and have started making plant and animal records of the things that they see "on their doorstep". When looking at the NPMS squares we noticed that 4 of them are "on the doorstep" of our 2 existing projects. Thus we have extended our existing programmes of local training to include NPMS. CBDC will be able to support the volunteers to practice surveying. We hope that this investment at the beginning of the square surveying as well as incorporating it into something that is locally relevant will encourage the volunteers to continue to take part in the NPMS." – Deb Muscat, Manager, CBDC



## NPMS data in 2017

The NPMS continues to grow, and last year there were over 1000 visits to 448 1 km squares by volunteers, resulting in almost 2000 plots. The NPMS database overall now contains information on around 3200 plots! It's clear that this resource is increasingly becoming one of the most comprehensive databases on British plant communities in existence, and all thanks to your efforts! We have also been extremely pleased by the number of volunteers who have commented on their improved understanding and appreciation of habitats as a result of their NPMS surveys

## Website and app updates

Recent updates to the website have focused on improving the transition of squares and plots between surveyors – clearly an important part of the long-term nature of our survey. Changes to the display of squares, plots and samples through the website will also be mobilised later in the year, making the display less cluttered as the fruits of our labours accumulate! A move to a new website hosting platform should also be complete by the time this newsletter is released, and is expected to result in significant speed improvements. A new version of the app is currently being tested – watch out for an update alert on your phones or tablets!

## Plant and habitat training in 2017

Twenty-two NPMS training workshops were held last year, with around 175 volunteers attending. Again, this year, we have had a number of workshops on offer, varying from introductions to the NPMS methodology, to walks focused on the identification of NPMS Indicator species. Don't forget that a selection of NPMS habitat ID videos are also available at: <http://tombio.uk/NPMShabitats> courtesy of the Field Studies Council and Nick Law.

## Rare, scarce and unusual: an overview of some interesting NPMS finds

Although the NPMS 1 km squares were purposefully weighted towards rare types of land cover in the UK, the nature of random sampling means that the majority of plots recorded will be of relatively common plant communities and typical species, these obviously being most likely to turn up in a randomly placed quadrat. However, rare and interesting finds are still possible, and the number of volunteers and plots that the NPMS is very fortunate to have across the UK means that unexpected and rare plants will occasionally turn up. All NPMS plots are incredibly useful for documenting change in the countryside, and the set of plots that the scheme is accumulating is certainly the largest of its kind ever collected by voluntary activity in the UK; however, we thought that a brief look at some of the more unusual finds would make a nice topic for a newsletter article! Monitoring the occurrence of these scarcer species will certainly be fascinating for those volunteers lucky enough to have them in their plots; for the rest of us, the simpler pleasure of understanding plant communities and change in the countryside will have to suffice!



*Carex limosa* - Bog Sedge  
Photo: Pete Stroh

## Rarities

*Sorbus arranensis* – This is one of the rarest trees in the UK, with only a handful in existence. The whitebeams are renowned for “microspecies” diversity, and this lineage has been recorded by Jackie Kemp and Sarah Cowan on Arran.

Numerous other nationally uncommon species have been recorded by NPMS recorders in their plots. For example, Bog Sedge (*Carex limosa*) – 5 plots; Grey mouse-ear (*Cerastium brachypetalum*) – 1 plot, Broad-leaved spurge (*Euphorbia platyphyllos*) – 1 plot; Snakes-head Fritillary (*Fritillaria meleagris*) – 1 plot; Childing Pink (*Petrorhagia nanteuillii*) – 1 plot; Small Cranberry (*Vaccinium microcarpum*) – 1 plot; and Alpine Speedwell (*Veronica alpina*) – 1 plot. No doubt all the recorders involved were pretty pleased to find these gems in their plots, and we hope that they will continue to monitor their abundance over the coming years.

## Orchids

A perennially popular group of plants, NPMS recorders are providing an insight into the relative frequency of our commonest species at the metre scale. The most commonly encountered species is the Common Spotted Orchid (*Dactylorhiza fuchsii*) – 86 records; with Heath Spotted Orchid (*Dactylorhiza maculata*) – 44 records – and Pyramidal Orchid (*Anacamptis pyramidalis*) and Early Purple Orchid (*Orchis mascula*) tied on 17 apiece. Rarer sightings in plots include Chalk Fragrant Orchid (*Gymnadenia conopsea*), and the Early Marsh Orchid subspecies *Dactylorhiza incarnata* ssp. *coccinea*, a variant often found in machair or damp dune slacks.



*Orchis mascula* - Early Purple Orchid.  
Photo: R. Stewart (IWNHAS)



*Dactylorhiza maculata* - Heath Spotted-orchid.  
Photo: P. Shannon



*Anacamptis pyramidalis* - Pyramidal Orchid  
Photo: O. Pescott

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## Invasive alien plants

The work of NPMS recorders not only contributes to the early detection of potentially invasive alien plants, but also contributes to the evidence for or against such species out-competing native vegetation. Interesting records in this area include a record of Ragweed (*Ambrosia artemisiifolia*) – recorded in Notts by Murray Hart. This is often considered one of the most invasive species worldwide, being a human health hazard due to its highly allergenic pollen.

Many other aliens of concern have also been recorded, including Water Fern (*Azolla filiculoides*) – 8 records; Canadian Pondweed (*Elodea canadensis*) – 11 records; Giant Hogweed (*Heracleum mantegazzianum*) – 7 records; Japanese Knotweed (*Fallopia japonica*) – 4 records; and Himalayan Balsam (*Impatiens glandulifera*) – 160 records.

## Understanding your fieldwork: a route to continuous improvement for the scheme?

NPMS volunteers have made it possible to collect large amounts of data on wild plants across the UK, year after year, so that we can track changes in habitat quality and species distribution. The information you provide can help identify causes of species declines and inform conservation policy. It is therefore important to ensure that the support and guidance we provide enables you to collect the best data you can, to help ensure reliable results.

For this reason, we want to find out more about your experience of doing the NPMS survey. We are keen to understand which aspects you find easy to do and are most confident in, and which parts are confusing or challenging. We are particularly interested in how you have interpreted the survey guidance, and in any difficulties you have come across. This will help us to identify improvements we can make to the guidance and the support we provide. Look out for a link to an online questionnaire that we will send to you this month! As NPMS volunteers you are the experts in using the survey, so we very much value your responses to this.

We are also interested in undertaking some field observations of NPMS volunteers. This will take place in south-west England next season, and will enable us to gain further insights into the repeatability of the NPMS method in different habitats. Detail about these sessions will be sent out to south-west volunteers in the coming months. If you are interested in being involved, please contact [alison.smith@plantlife.org.uk](mailto:alison.smith@plantlife.org.uk)



*Surveyor. Photo: Plantlife*

## Sunny Days and Bumblebees on the NPMS

### Reflections from Aoibhinn Corrigan, NPMS volunteer

For me, the National Plant Monitoring Scheme is a lot more than getting outside to record plants, preferably when the sun is shining.

My square is less than 10 miles from where I grew up, yet it has taken me down winding country lanes I have never before visited. It has taken me beyond the road-side view of 'just another field' to the hidden wet grasslands, rivers and hedgerows that lie within, boasting of species that you would never know were there by looking over the gate at the blanket of green grass.

While the scheme has taught me much about plant identification and has made me take a closer look at places I may not expect to be so interesting, there is another very important element for me. This is not just a chance to record plants but also the chance to see and record the pollinating insects that call these places home. When I look at the flowering plants within my square, while I see them for their own beauty and existence, it immediately makes me think of the insects that will visit them and the beautiful relationship between the two. I have quite a big soft spot for bumblebees and getting the chance to not only record the plants but to watch the bees and other insects, going about their business, paying a visit to each flower is an added bonus. It gives me the chance to add a few more species records on my [iRecord app](#), in a place that I would otherwise have no reason to visit.

Our flowering plants are so reliant on their insect visitors for pollination and so many insects such as bees, butterflies and hoverflies, depend on flowers for pollen nectar to feed themselves and their larvae. For me, this is one of the reasons I find the National Plant Monitoring Scheme so important, our flowering plants are all you can eat buffets for the insects I adore recording and watching. There is an enduring friendship between the plants and insects and without it, one simply wouldn't exist without the other. In a landscape that grows ever harsher, to see some of our most delicate species working together to survive is a pleasure to both watch and record.

## The NPMS and Vigie-flore: Vive la différence or long live the similarity?

The French have been running a similar scheme to the NPMS, Vigie-flore, since 2009, here we interview Gabrielle Martin, scheme coordinator and PhD researcher at the National Museum of Natural History in Paris.

### Can you describe the aims of Vigie-flore?

The citizen science monitoring scheme Vigie-flore aims to monitor plant species in France. It aims to detect changes in the abundances of our most common species, as well as changes in community composition. It also aims to find the causes of these changes (e.g. global changes like climate change, but also local issues such as urbanization, fragmentation, and agricultural practices) and to analyse the impacts of these different factors on our flora.

### How long has the scheme been running?

The scheme began in 2009, and this year is our 10th sampling season!

### Who are the main organisations in France that support the scheme?

The scheme was set up at the Centre of Ecology and Conservation Sciences (CESCO) of the National Museum of Natural History (Paris), and it is co-organised by the association Tela Botanica, the network of French speaking botanists.

### Are there differences between the NPMS and Vigie-flore?

Each observer chooses their 1km square. In this square, 8 plots are defined systematically. Each plot is made up of 10 one metre subplots. Observers record all vascular plants in each subplot and a species' abundance is estimated by the frequency of a species across the 10 subplots.

Also, we meet all observers once a year, often at the beginning of spring, to talk about the protocol, results, some hard-to-ID species groups, to practice botany together, and to share some food specialities from each observer's locality!



### How long have you been involved, and what is your role?

I have been involved in Vigie-flore since November 2011. I started off analysing the data with Emmanuelle Porcher and Nathalie Machon (our directors) and organising the observers' network, corresponding via the internet to share results and organizing some field trips in different regions in France with my colleagues. After 4 years I started a PhD analysing the Vigie-flore dataset. My involvement did not change so much with this shift, I still organise the observers' network, organise field trips, and share the results of the program. The main shift has been towards improving the analyses undertaken.

### The PhD sounds like a real challenge – what has been your main discovery from analysing the data?

When I started the PhD, I benefited a lot from my field experience, botanical knowledge and observer feedback. These helped me to address questions and to take care of some important details. The main discovery we have made was to detect a temporal change of plant communities in response to climate warming, detectable over only nine years. We highlighted a fast increase in the thermal preference of plant communities in lowlands due to increases in the frequency of annual and warm-adapted species (for example *Atriplex patula*, *Avena barbata*, *Anisantha madritensis*, *Blackstonia perfoliata*, *Bromus arvensis*, *Chaenorrhinum minus*, *Echinochloa crus-galli*, *Galium parisense*, *Gnaphalium uliginosum*, *Kicksia elatine*, *Lithospermum arvense*, *Sagina apetala*, *Tripleurospermum inodorum*, *Vulpia myuros* etc.). We are trying to identify differences between habitats, and the possible consequences of these changes for our flora and for plant-pollinator interactions.

### What have you liked most about working on Vigie-flore?

All the parts of my work! From field trip and botanical records, data analyses, to the observers' meeting and general botanical passion sharing!

*Thanks Gabrielle, and the best of luck with your PhD defence and for the future of Vigie-flore!*

## NPMS all a-flit in Omagh!

### Volunteer and NMNI employee Lorna Somerville relates the discovery of a new site for Marsh Fritillary in Northern Ireland

Back in 2016, myself and Julie Corry, Biodiversity Officer for Fermanagh & Omagh District Council, set up an NPMS survey square outside Omagh in County Tyrone, Northern Ireland. The square had a good range of habitat with lowland meadow, hedgerow, wet woodland and marsh and fen. At the time, we were delighted to find an abundance of Devil's-bit Scabious *Succisa pratensis* growing in one of our plots, one classified by us as "Acidic fens, flushes, mires and springs". This plant is of course the larval food of the Marsh Fritillary, *Euphydryas aurinia*. Marsh Fritillary is a Northern Ireland Priority Species and is protected under the EC Habitats Directive. Could this be a new site for the Marsh Fritillary in Ireland?

Roll on to late May 2018, during a glorious spell of hot sunny weather, and I joined Julie and her colleague Sarah-Jane Beacom, to resurvey the square, hoping to once again find lots of Devil's-bit Scabious in one of the plots. This plant is not on the indicator list but as there was so much growing in the plot, we had recorded its presence. Its flowers, which resemble purple pom-poms or pin cushions can be seen later in the summer season, but we were able to identify the rosette of opposite, undivided and untoothed, hairy leaves.

There were quite a few butterflies, hoverflies and bees buzzing around, and we were all trying to photograph any other species we encountered to submit as biological records. Sarah-Jane asked us to look at a brown moth she had spied. We were all absolutely amazed to find not a moth but an adult Marsh Fritillary butterfly, freshly emerged and basking in the morning sun! On closer inspection of the surrounding vegetation we discovered a pupae clinging to a leaf of Devil's-bit Scabious, with the most intricate pattern in white, pale blue, black and

mustard. Both these finds were within our NPMS plot! This was a first sighting for us all and a new Marsh Fritillary record for the country. There are now plans for Butterfly Conservation Northern Ireland to search for larval webs in the area later in the summer season. The attention to detail required by the NPMS clearly yields dividends!, wellies obligatory...



*Euphydryas aurinia* - Marsh Fritillary.  
Photo: L. Somerville



*Succisa pratensis* - Devil's-bit Scabious,  
the Fritillary's food plant  
Photo: L. Somerville

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We would like to take this opportunity to thank all of the stakeholders that attended workshops in England, Wales and Scotland and have supported the NPMS in 2017. The Field Studies Council, Richard Burkmar, Charlie Bell, Nick Law, Andrew van Breda, Karolis Kazlauskis, Brenda Harold and parish councils across England and Wales have also provided much valued assistance in numerous ways.