



# National Plant Monitoring Scheme

Monitoring our wild flowers

## Newsletter – Spring 2020

**Welcome** to the 2020 NPMS Spring newsletter! 2019 was a busy year for Scheme volunteers, with a popular and wide reaching training programme, new partnerships and continued survey effort in the UK countryside through the 5th field season. Now with 5 years of data, we hit a pivotal and exciting period for the scheme, as we start to see the emergence of trends and stories from the important data collected nationwide - more below. **2020** has of course had a shaky start for all, including most monitoring and surveillance schemes nationwide, in light of the current health crisis. We hope you are keeping well and this newsletter is a real celebration of volunteer and partner contributions to date, their resilience at this time and the creative ways we have been keeping connected in recent months. We also have plenty of news and updates about the scheme and how the data is being used.

### Introduction

Spring kicked off to a bit of a false start this year, with government guidance and restrictions meaning a pause to surveys, necessary for the health and safety of our dedicated volunteers during this pandemic. Please do not worry that your plots were not being covered temporarily if you are a current NPMS volunteer, or if you are still unable to get out on site. We already understand that coverage will be reduced this year, but this is a long-term monitoring project and will not suffer unduly from this short-term crisis. The health of yourselves and your families is of much more immediate concern. We look forward to hearing more from you as surveys have now started to recommence and have enjoyed hearing how you have been keeping busy and engaged in our natural world during this time of isolation.

We did however celebrate the start of spring by launching our Spring data stories and celebrating 5 years of the scheme. Which you can read more on below. The NPMS team have also been as busy as ever developing the scheme and providing new support materials.



*Ophrys apifera* – Bee orchid (Kevin Walker)



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## NPMS Covid-19 Update

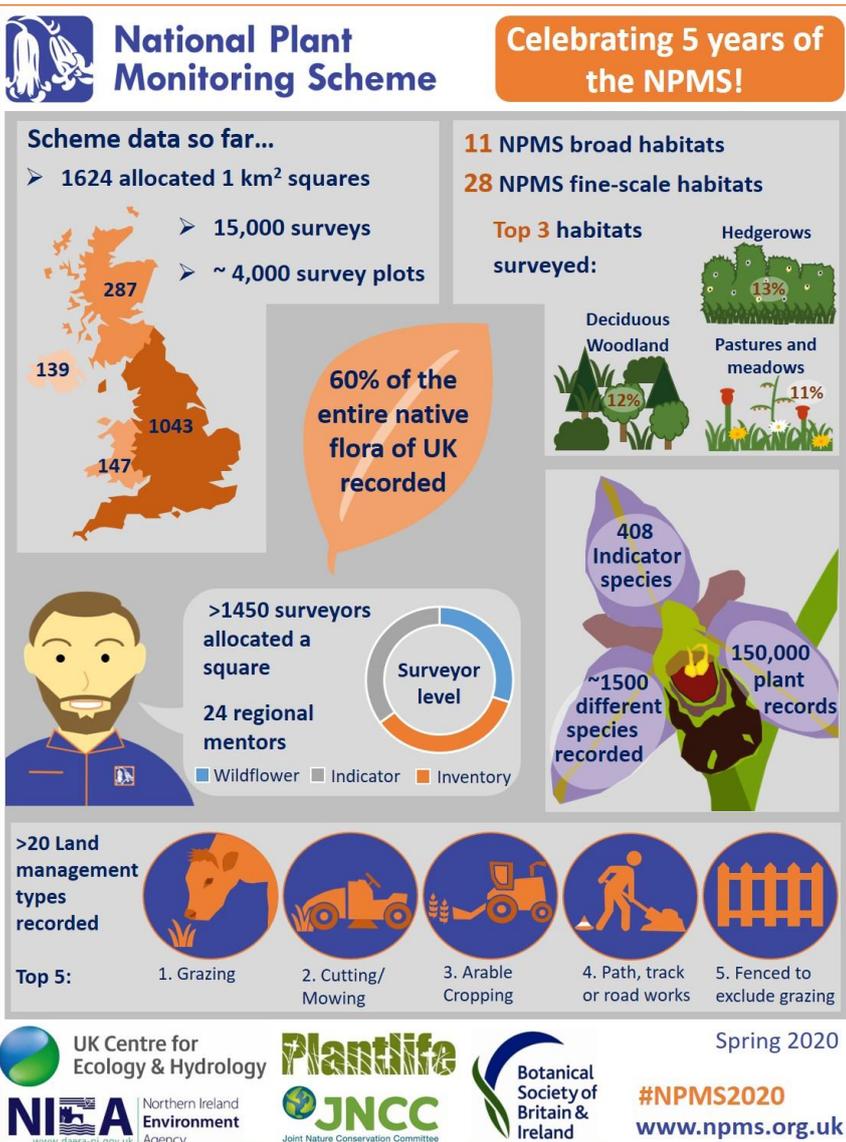
This is a difficult and unsettled time for all and we hope that you and your loved ones are well. The priority at this time is your health and safety. Following Government guidance in light of the current Covid-19 pandemic, the NPMS has issued guidance to volunteers regarding scheme activity this season.

**VOLUNTEER TRAINING:** All face to face training events planned for this season have unfortunately been postponed for the time being. We have been exploring and putting into place new ways to support volunteers in developing skills and keeping connected digitally. See section on training below for an update on our online training programme now underway.

**MENTORING:** For now, mentoring support is digital only. We are also on Twitter [@TheNPMS](#). By all means if you find anything useful or fun to share with other volunteers, such as training videos, articles, even fun anecdotes etc. just tag us and use the hashtag [#NPMS2020](#). Let's support each other and keep connected at this time. Current volunteers are also welcome to join the NPMS Support Facebook group [here](#), to share tips and experiences and take part in our Wildflower Wednesday.

**SURVEYING AND MONITORING:** Due to COVID-19 restrictions, **NPMS surveys are partially suspended**. Volunteers can continue to survey only if they are following all government guidance in their geographic region regarding outdoor activities and travel. Please see out full statement [here](#). It is important to keep up with the latest guidance.

## Celebrating 5 years of the NPMS!



## 5 years of:

- \* Quality data on plant communities nationwide
- \* Data to develop a national indicator of habitat quality
- \* Government-funded research
- \* Excellent partnership working
- \* Citizen scientists monitoring wild plants and their habitats

From the Cairngorms to the South Downs, from Exmoor to Rannoch Moor, the great effort of over 1,500 NPMS volunteers, is providing robust botanical data from across the UK to investigate the health, plant abundance and diversity of our habitats. 2020 is a milestone year for the NPMS as we celebrate our first five years of data collection.

From individual surveyors to private landowners, to agency bodies across the UK and key land managers are already engaged with the scheme, some adopting the NPMS alongside other monitoring schemes.

An astonishing 30% of all our volunteers are new to plant recording.

## How are our wild flora responding to environmental change?

The NPMS allows us to investigate the growing pressures on our environment; from eutrophication, climate change and extreme weather, to how land management can affect biodiversity.

Did you see our report, **Understanding the health of our habitats - Celebrating the first 5 years of NPMS data**, released in March this year? You can read the report in full [here](#).

Some stories emerging from the report:

### Climate Change

Monitoring the NPMS habitat plots twice a year, every year, provides an unparalleled opportunity to track and understand the responses of plants to extreme weather events such as droughts.



© Andrew Gagg

*Indications of an increase in the abundance of species that are better at tolerating stresses such as Wild Thyme *Thymus polytrichus* during the 2018 drought.*

### Eutrophication

The NPMS data are starting to provide evidence of the fertile nature of many UK plant communities. Monitoring key indicator species such as Nettles and Cleavers can provide evidence of the effects of eutrophication e.g. nutrient enrichment and its impact on species intolerant to nitrogen, and provides useful information for comparing habitats.

The data suggests that species of fertile environments are on average 2.6 times more likely to be found in a deciduous woodland than those of infertile environments; however, the opposite is true of dry heathland environments and blanket bogs.

### Invasive species

The NPMS is the only citizen science project that allows us to see how the most invasive species, such as Rhododendron, Himalayan Balsam and Japanese Rose, are interacting with native plant biodiversity across Britain and Ireland.

This information can allow scientists to understand more about the impacts of non-native species upon native biodiversity, and how these might change under a changing climate.

**Detailed records of plant communities are extremely valuable for understanding how plants interact with each other under our rapidly changing environment.**

Read our spring blog summarising some of these stories [here](#).

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## NPMS Data in 2019

In 2019 the scheme received data for around 385 1 km squares, these data were spread over 800 visits to over 1700 plots. This contribution means that the scheme is now only a handful of plots shy of the 4000 unique plots mark, these being spread over 877 1 km squares. Indeed, the number of monads with associated data showed the biggest jump of all metrics between 2018 and 2019; this suggests that new people are becoming involved with the scheme in parts of the country that lacked surveyed squares previously. It is great to see new people becoming interested in contributing to recording plants at fine scales within habitats, but it is also great news for assessments of habitat condition performed using NPMS data, as it means that our statistics are more likely to be robust and to represent the true state of our valued habitats over larger parts of the UK.

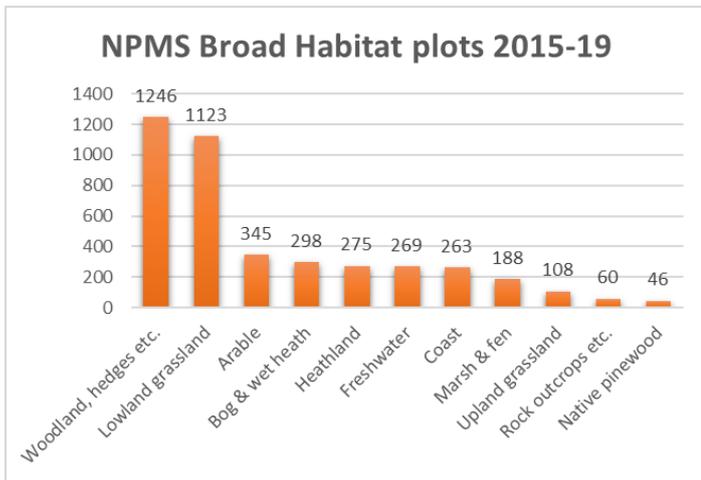
Last year we noted the most frequently recorded habitats as broadleaved woodland, hedges and scrub and lowland grassland. This is the pattern over all scheme years too, although we are also very happy to be able to report that a number of other broad habitat types are well-represented, with several close to the 300 plots mark (see the graph below).

## Online training and support 2020

As a result of all NPMS face-to-face training events being postponed this year owing to Covid-19, we have been busy developing and delivering a programme of online training materials which are being released in weekly instalments through the season - from NPMS methodology to habitat specific ID. These include themes presentations and additional supporting materials and links for each topic are publicly available for all to download. These will remain on site for your reference and support. They are also accompanied by limited booking zoom sessions with trainers for most weekly themes – with these available only to NPMS registered volunteers.

These have proven extremely popular, with zoom sessions booking out within a few hours and each time we have increased the number of spaces available, and thus far we've received positive feedback both on these and the materials provided on the online training page [here](#).

If you are a member of the NPMS Support Facebook group, there is an opportunity to ask questions on these themes each week.



Of course, this is also a function of the amount of the habitat represented across the UK in general, and the NPMS 1 km square sample in particular; in this respect it is great to see good representation of linear coastal habitats, and marsh & fen habitats, both habitat types that exercised our minds frequently when making decisions about how to assign “weights” to 1 kilometre squares across the UK in order to ensure that the NPMS sample would not under-represent particular habitat types of interest (see Pescott et al. 2019 at <https://bit.ly/3bY3ywu> for more information).

**Thank you...** to all 2020 training Zoom participants thus far. We have thoroughly enjoyed (virtually) meeting you all, seeing your smiling faces and hearing your questions and experiences. We look forward to more of these sessions as the programme progresses.



*Rachel Murphy (NPMS Volunteer manager), Abbie Maiden (NPMS N. Ireland coordinator) and Erin Shott (NPMS comms. assistant), along with a number of the 30+ training participants enjoying an Introduction to Heathland Habitats Zoom session by trainer Ben Averis on: 9th June.*

## Tweet Meet #NPMS2020

On the 20<sup>th</sup> March 2020 The NPMS hosted a tweet meet on our twitter page [@theNPMS](#), with the overall aim of celebrating the first 5 years of the scheme, share data stories and to thank volunteers and stakeholders for their efforts and involvement. A Tweet Meet is a social media event, held over Twitter that you can watch or join from the comfort of your desk/sofa/train – wherever and whenever you have time. This event brought together botanists, volunteers, stakeholders and supporters from around the UK in an online setting to encourage communication and collaboration. As a bonus, the event is cost-free, low-carbon, easy to follow and inclusive.

### Top Tweet earned 10.1K impressions

You're invited to **#NPMS2020** on 20th March! Hope you can join us: it wouldn't be the same without you :-). Here's your invitation: [npms.org.uk/article/npms-2...](https://npms.org.uk/article/npms-2...) It's online so you can join in from the comfort of your desk/sofa/bed: no travelling, no germs to avoid... RSVP by retweeting! [pic.twitter.com/A8y4AmzWGV](https://pic.twitter.com/A8y4AmzWGV)

#### What is the National Plant Monitoring Scheme?

The National Plant Monitoring Scheme (NPMS) is a new habitat-based plant monitoring scheme designed by **BSBI**, **CEH Plantlife** and **JNCC**. The aim is to collect data to provide an annual indication of changes in plant abundance and diversity.



1 30 30

The event had a running programme of contributors and we heard from a wide range of folk involved in some way with the scheme. It was such a fun day and way of hearing from so many. The event had a great impact and proved an effective way to hold a nationwide event, with >1500 profile visits >150 new followers, >230,000 impressions and ~250 mentions on the day.

A fun photo-competition - #NPMSphoto2020 was also held during the day, with prizes generously donated by the National Trust Northern Ireland.

We will be looking to hold more Tweet Meets in the future and if this is something you'd be interested in getting involved with or if you have any ideas for, please do get in touch with [support@npms.org.uk](mailto:support@npms.org.uk)



*The enviable plot of Rachel Haines, 1st prize winner of the plot portrait Photo competition. Such excellent views of the Cairngorms from her survey site!*

## You've told us...

*'The NPMS is between the Earth and sky, for me a tiny key to the wonders of our beautiful world and there's always something new to learn! I'm also following the Identiplant course and taking even more notice of our lovely wildflowers has been a real tonic during these unusual times'*

**NPMS Volunteer Michelle Thomasson**

*'I always bring my family along when I'm monitoring my square [Garron Point, NI] as it's a lovely day out. The kids love looking at all the plants & trying to match them up to the ID books.'*

**NPMS Volunteer Lisa Maddox**

*'I have just had a very absorbing hour or so reading the Broadleaf Woodland habitat training material. Thank you Ben Averis'*

**NPMS Volunteer Laura Rollin on our new online training programme**

*I found the most rewarding aspect of being a mentor the positivity from the volunteers alongside their thirst for further plant knowledge and meeting volunteers in person and seeing their plant ID skills develop.*

**Lorna Somerville: NPMS Volunteer Mentor in Northern Ireland**

## Plot profile: Why two visits are better than one

Kevin Walker, BSBI

*Of course besides 2020 being a difficult and different year for most, the NPMS method requires that you make two visits to your plots if possible. Here we explain why with evidence from a phenological study carried out over the last year.*

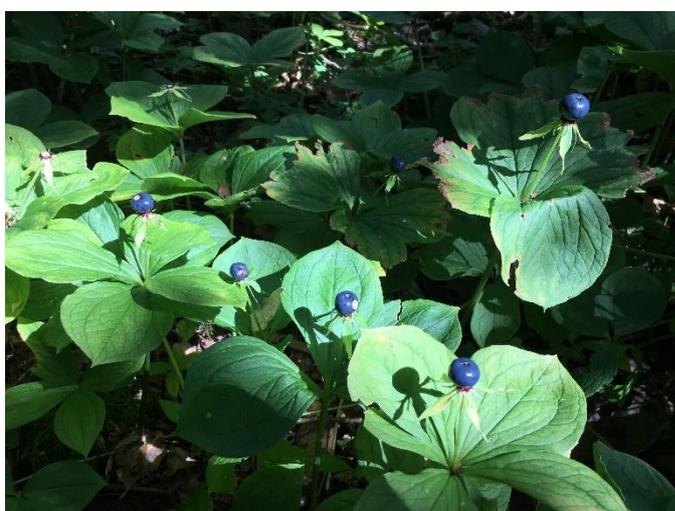
The timing of and duration of leafing and flowering differs markedly between plants and this dramatically affects how well species are recorded (detected) during surveys such as NPMS. Take the example below. The photographs show an NPMS plot located in an ancient woodland on calcareous soils close to Knaresborough, North Yorkshire, with a rich ground flora dominated by Dog's Mercury and occasional Herb Paris. The canopy is dominated by Ash and Field Maple with an understorey of Hazel and Hawthorn.



Same view of the plot photographed in December (top) and July (bottom)



Herb Paris (*Paris quadrifolia*) emerging in March (left) and in fruit in August (below)



The plot was visited monthly over the course of a year and the presence, flowering and abundance of all species recorded in 16 grid cells. In total 35 species were recorded in the plot although the maxima and minima were 25 species in May and 10 species in November. As the table below shows the visibility of individual species was variable. For example, Wood Anemone and Twayblade were only recorded from March to June, whereas Bluebell was visible from December through to the following July and Herb Paris from March to August. Violets were recorded in virtually every cell throughout the year, but it was only possible to record which species were present when they flowered in March, April and May. Most remarkably Ash seedlings were recorded in every cell between May to October but disappeared completely over the winter months. In comparison, Dog's Mercury, Wood Sedge and Wood Avens were almost equally visible in every month.

These results from this one plot show how hit and miss the recording of plants can be depending on when you carry out your survey. A single visit in May would have been optimal as only Sweet Violet would have been missed whereas a single visit in July would have failed to detect Wood Anemone, Lord's-and-ladies, Twayblade, and Sweet, Early-dog and Common Dog-violet. Visiting twice in March and May would have meant none of the species listed were missed.

Obviously NPMS requires recording the abundance of species present. As apparent from the plot photos there were dramatic changes in the cover of species such as Dog's Mercury which could potentially influence the overall results.

To maximise the number of species you record for NPMS you will need to visit your plots twice if you can. Try and space these out by a month or so. As a general rule it is better to visit woodlands earlier in the year, grasslands in the middle and montane and coastal habitats slightly later. Doing this will give you the best chance of finding all the species present. Good luck!

**Table 1.** The number of grid cells plant species were recorded in each month within a woodland NPMS plot near to Knaresborough.

Month	1	2	3	4	5	6	7	8	9	10	11	12
Wood Anemone			3	16	16	11						
Lords-and-Ladies	1	2	5	4	3	1						
Wood Sedge	5	5	4	2	4	5	4	3	4	4	4	5
Ash seedling					16	16	16	16	16	13		1
Wood Avens	16	15	16	15	15	16	16	16	16	16	16	16
Bluebell	8	8	9	9	11	8	5					1
Twayblade			3	6	7	6						
Dog's Mercury	16	16	16	16	16	16	16	16	16	16	15	7
Herb Paris			10	12	15	13	6	5				
Dandelion	4	4	4	5	3	2	1	1	1		1	2
Violet	15	15	14	12	12	15	12	16	14	14	14	14
Sweet violet			3							1		
Early Dog-violet			1	5	3							
Common Dog-violet					3							
Total species recorded	12	15	19	18	25	20	15	20	17	15	10	11

## Some of your images...



Above: Volunteer Alison Fisher has been surveying her square in the North Pennines for 4 years.



A gorgeous summery shot from Volunteer, Jamie Males' Fenland square, lifts our spirits.



Round-leaved Sundew *Drosera rotundifolia*, often found in bogs, marshes and fens, recently snapped by volunteer Anne Griffiths

## Case Study: Using NPMS data in habitat mapping

Anna Robinson, JNCC

Whilst still a young scheme, the NPMS has already been of great value in helping to produce a habitat map for England. Natural England have developed a new mapping approach called 'Living Maps'. The approach makes use of the increasing amount of satellite data that is becoming available through the EU Copernicus Programme. The satellite data are open and free to use, but require processing and use of complementary field data to turn the raw images into a useful map showing separate habitat types. Natural England, supported by JNCC, are creating a habitat map of England under the Living England Project. The NPMS has been a key source of field data for this project, being particularly valuable due to its national coverage across a range of habitats, and the recorded habitat type for each individual 'plot'.

The mapping process involves machine learning - taking raw outputs from the satellite imagery and classifying into habitat types using the field data to train the algorithms. Phase 1 of the Living Maps project completed in 2019, resulting in an initial habitat map covering the whole of England, and a new phase is underway to improve the map by incorporating more field data. The models can be re-run as new field and satellite data become available, resulting in a map that can be updated on a regular basis.

Having an up to date, comprehensive habitat map is of great importance in improving our understanding of the extent of habitats, and in the future to tell how those habitats are changing. That knowledge will feed into policy decisions, for example decisions on targeting or incentivising habitat creation and management. The creation of the Living England habitat map demonstrates the immense value in partnership working and bringing together different types of data. It demonstrates how volunteers taking part in the NPMS can produce a dataset that is not only informative about the changing plant communities of differing habitats, but which can also dramatically increase the value of other datasets, resulting in great benefits to conservation.

## NPMS News and updates:

### **An introduction to Northern Ireland's NPMS Officer: Abigail Maiden**

In the autumn of 2019 I started working as a Scientific Officer in the Biodiversity and Conservation Science Unit of the Department of Agriculture, Environment and Rural Affairs. My main role is overseeing the NPMS in NI along with conducting bird and habitat surveys and managing, mapping and analysing survey data, in order to facilitate management of protected areas. I am very excited to be a part of the NPMS as I feel without citizen science schemes it would be impossible to get the amount and wide spread distribution of data required to obtain an overview of UK habitats and species and to start identifying vegetation trends across the UK.

For Northern Ireland's NPMS volunteers, field training had been organised through collaboration with the Centre for Environmental Data and Recording (CEDaR), however unfortunately due to Covid-19 this has been postponed to 2021. We (NPMS) are currently enjoying working through our online training programme for all volunteers and enjoying "virtually" meeting you!



I would like to encourage more of a community feel behind NPMS data collection by developing the mentor scheme and using communication and social media channels affectively, so everybody can support each other with any aspect they are stuck on e.g. species ID.

You can read a full interview with Abigail [here](#).

## NPMS Website updates:

As ever, we have been continuously working to update and improve our website functionality and experience. Along with some of the drier, bug fixes and tweaks to the site, there are also some new additions that you can now also spot when using the site:

### Boundary maps

When taking a look at squares in your area on our [Squares near me](#) page or [Request a square](#) page, you can now see there are some further instructions about navigating the map. You will see that a new feature has also been added here to provide more relevant local information about a selected square or area. E.g.



The layer switcher icon  to the right of the map also now displays a list of boundary layers (e.g. Areas Of Outstanding Nature Beauty or Sites Of Special Scientific Interest) which can be switched on and off the map you are viewing using checkboxes to display the boundaries of these sites for additional local information. E.g.



### Square maps

All square habitat maps provided to volunteers in their survey packs have now also been loaded digitally to the website. So if you have lost, or

would like a digital copy of your map(s), you can now download these by logging on and visiting [View squares and create plots](#) once allocated a square. Once you have selected View/edit square information for the square you are interested in, at the top to the square page, you will see you can “Download square details PDF” to get your digital OS map.

### Bulk NPMS square release in the SE

The start of this season saw a release of a number of inactive squares in the south East. This was the first regional release in a new phased process to release inactive squares in targeted areas. This time, namely squares in the south east grid references starting with the letters SU, TQ and TR were released. So if you are in this area and have been waiting for more squares to become available, it is certainly worth checking if a suitable square has become available near you.

### Data and research news

The NPMS number-crunchers have been hard at work over the last 12 months, getting ever closer to a way of using all your hard-won field data to create a set of NPMS habitat indicators that we hope will become one of the sets of “official statistics” used by government to track habitat quality across the UK. A candidate indicator has been formulated that takes all of the NPMS indicator species data within an NPMS broad habitat type (whether recorded at Wildflower, Indicator, or Inventory level), and produces individual species trends which are then amalgamated into a single “trend line”. The trend line should go up as the cover of indicator plants within a habitat increases, and as the frequency of such plants across habitat plots goes up as well. We have really tried to make the best use of all the data available to us. Once this important piece of work is completed, we look forward to further investigating how the impacts of environmental changes has been influencing plant communities over the past 5 years!

### NPMS App

Don't forget, the NPMS mobile App, has been updated and is available for both [Apple](#) and [Android](#)! A great way to get your data into us!

## Biosecurity note

Anna Robinson, JNCC

The United Nations (UN) has designated 2020 as the '[International Year of Plant Health](#)'. Plants form the backbone of habitats supporting a vast array of wildlife, as well as providing essential ecosystem services such as food, storage of carbon and regulation of climate. At the current time, we are all much more aware of the importance of not spreading coronavirus. But it's also important to consider plant pests and diseases. Although they don't directly impact us, they can spread quickly and cause serious economic and biodiversity impact.

So what can be done to help? As always, prevention is better than cure, so stopping pests and diseases reaching the UK in the first place is the 'Plan A', and the UK has strict regulations around plant imports. If plant pests and pathogens do reach the UK, they can be accidentally spread by people, as they may be transported in soil or plant debris that can be picked up on shoes and vehicle tyres. During this lockdown period there should be much less movement around the countryside. However, when restrictions are eased and NPMS surveying resumes, there are some simple precautions you can take to help. Try to avoid parking on muddy verges, and as well as washing your hands, don't forget to keep your boots and equipment clean too. By ensuring you are clean on arrival at your survey site you will be playing an important part in keeping the plants of our countryside healthy.

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## We need you!

### Historical data:

Previous season's data – it's not too late! If you still have data from previous year's that have not yet been submitted, this can still be entered to contribute to the NPMS database and analyses. Just enter this data as normal, ensuring you enter the correct survey dates. For any advice on entering your data, contact [support@npms.org.uk](mailto:support@npms.org.uk).

## Mentor positions

Volunteer mentors are a greatly valued part of our team. If you're interested in becoming a mentor please contact [support@npms.org.uk](mailto:support@npms.org.uk). We just ask that you have a couple of hours free to commit per week (less during the quieter winter months). Full support is given.



*Dr Oli Pescott offers some guidance at the 2019 Castlewellan Bio blitz*

## The Big NPMS Quiz:

Mid-August we will be releasing details on the Big NPMS Quiz! No one is being tested. But rather this is a fun opportunity for participants to check I on their ID while collecting useful volunteer experience data for the scheme. So watch this space and please take part if you can!

## Volunteer reps:

We know that a big part of the volunteer experience and our growing community feel comes from hearing from **you**. Thank you very much for all your feedback that helps us to continue to shape and develop the scheme and your experience.

Along with this feedback we are hoping to bring together (virtually) a group of volunteer representatives from a variety of backgrounds and experience levels within the scheme. If you would be interested in taking part and available for just a few group meetings a year, please let us know at [support@npms.org.uk](mailto:support@npms.org.uk) for more information.

Please ensure that your current email address and home address is up to date within your NPMS account, in order to make sure you receive news and updates from the scheme and any recording forms or materials requiring posting. You can do this by visiting “My Account” once logged in to our web page [www.NPMS.org.uk](http://www.NPMS.org.uk) and simply selecting “edit”. Thank you.

## Contacts:

Keep up to date with training events and volunteer resources, as well as updating your data by visiting [www.npms.org.uk](http://www.npms.org.uk)

If you have questions about any aspect of the scheme or would simply like some more advice then please email [support@npms.org.uk](mailto:support@npms.org.uk) or phone: **07711 922098**

You can also see updates, news and join in the conversation by following us on:

Twitter – [@theNPMS](https://twitter.com/theNPMS)

Facebook – [National Plant Monitoring Scheme](https://www.facebook.com/NationalPlantMonitoringScheme)

You are also invited to join a closed Facebook group of registered NPMS volunteers: [NPMS Support](https://www.facebook.com/NPMSsupport). This is a friendly point of contact between volunteers and a space for sharing survey experiences.

You can now also find us on Instagram - [@the\\_npms](https://www.instagram.com/the_npms)

Also visit the blog on our web page to view the most recent [blog posts](#) from the scheme.

## Acknowledgements:

The NPMS partners would like to take this opportunity to thank all the stakeholders who have supported the NPMS in recent years and have organised or attended workshops across the UK, including: Yorkshire Dales National Park, South West Scotland Environment Information Centre, Cairngorms National Park, National Trust, Natural England, Ministry of Defence and all the AONBs, National Parks and Record Centres who have promoted the scheme.

Thanks also to Andrew van Breda and Karolis Kazlauskis for technical support.

Also a huge thank you for the effort by all our dedicated volunteer surveyors that make the programme possible and a lively community to be part of. The NPMS team are so grateful for your enthusiasm, even during such uncertain times and your welcoming of our new online training support. Thanks to Ben Averis and Dom Price for their contributions to this online training.

Thank you to all the contributors of the newsletter and to those that supplied images.



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