National Plant Monitoring Scheme

Understanding the Health of our Habitats

5 years of the NPMS

1,500 citizen scientists

15,000 surveys across the UK so far

150,000 plant records

From the Cairngorms to the South Downs, from Exmoor to Rannoch Moor, the NPMS is providing robust botanical data from across the UK to monitor change in 30 habitats at small-scales.

2020 is a milestone year for the NPMS as we celebrate our first five years of data collection. NPMS volunteers 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.

All environmental monitoring is a long-term endeavour: the saying that the best time to start monitoring is 100 years ago but that the second-best time is now, holds for plants as for any other part of our environment.

Built on partnership and government-funded research, the NPMS uses long-term botanical surveys to investigate the health, plant abundance and diversity of our habitats, and allows us to investigate the growing pressures on our environment – from eutrophication, climate change and extreme weather, to how land management can affect biodiversity.

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

60% of the entire native flora of Britain and Ireland recorded

meadows   heathland   streams
montane   pinewoods   rivers

Bee orchid (*Ophrys apifera*) has been recorded on the northern edge of its British range

Stinging nettle (*Urtica dioica*), associated with highly fertile conditions, is the most frequently recorded native species on NPMS plots

Sycamore (*Acer pseudoplatanus*), the most frequently recorded alien, particularly in dry deciduous woodland and hedgerows

Our changing environment

Monitoring the NPMS habitat plots twice a year, every year, provides an unparalleled opportunity to track and understand the responses of plants to our changing environment...

...from extreme weather events like the droughts of summer 2018

The NPMS data show indications of increases of bare ground and an increase in the abundance of species that are better at tolerating these stresses, such as salad burnet and wild thyme. Certain orchid species are also being recorded in evermore northerly locations, an indicator of a warming climate.

...to the increasing fertility of many UK habitats, particularly deciduous woodland

Monitoring key indicator species such as nettles and cleavers can provide evidence of the effects of eutrophication and its impact on species intolerant to nitrogen. We are already seeing differences in habitats for these key indicators over time. Stinging nettle and cleavers, both species of highly fertile soils, have been recorded in 40% and 33% of NPMS plots respectively.

...and the impacts of non-native 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. Habitats 'invaded' by the highest number of aliens were arable field margins, hedgerows and dry deciduous woodlands.

The NPMS data are published annually and are increasingly used in ecological research. As these data accumulate, they will increasingly contribute to the government's understanding of how our countryside is faring.

Volunteer Ro Scott assisting BSBI President Lynne Farrell on her Hebridean base-rich fen plot

NPMS in action

Living England mapping project

Natural England has developed a new mapping approach called 'Living Maps', making use of the increasing amount of satellite data that are becoming available through the EU Copernicus Programme. The NPMS is valuable in helping to understand and process these satellite data due to its national coverage across a range of habitats. Having a robust habitat map is important in improving our understanding of the extent of habitats, and to tell how those habitats are changing. That knowledge will feed into policy decisions.

The NPMS and new methods of environmental assessment

Indicators of the state of the environment are a high priority for monitoring schemes and for the governments that they seek to inform and influence. Now at the end of the fifth year of NPMS data collection, a new method for summarising species information from broad habitat types has been developed.

The NPMS alongside other schemes

NPMS data have been used as part of an assessment of the benefits of certain types of agri-environment stewardship schemes. Comparisons of NPMS data with other UK environmental monitoring schemes have also helped us to understand subtle biases in different parts of the NPMS dataset, improving the conclusions that we might draw from the data.

Who is taking part?

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

Ben McCarthy, Head of Nature Conservation, National Trust

As we pass the halfway mark in delivering the Trust's strategic ambition, it is vital that we monitor the state of our land. The National Trust has adopted the NPMS as one of the ways we assess the impact of our work. By doing so, we not only contribute to a better understanding of the state of the natural environment, but also create great opportunities for more people to get out and learn and enjoy the wild flowers under the National Trust's care. We actively encourage people to sign up and become involved – not only to contribute towards this important monitoring scheme, but to help ensure nature thrives.

James Brunton-Smith, Volunteer Mentor

I have been an NPMS volunteer for four years and, more recently, took up the role as a mentor for the north-east region. Being a part of the scheme has given me such personal satisfaction and an overwhelming feeling that I am contributing to a greater good. Being a mentor is a real privilege, and I hope that I am able to help in a small way to build confidence in fellow volunteers and develop a local network of like-minded environmentalists.

Mark Hewitt, Yorkshire Dales National Park Authority

The Yorkshire Dales National Park Authority provides support, guidance and training to a dedicated group of NPMS volunteers. Long-term comparable datasets recording change in plant communities were not available until the launch of the NPMS. These datasets are an essential component of decision-making when considering land management options.

Kevin Walker, Head of Science BSBI

NPMS allows volunteers to take part in real science. By contributing their time and expertise, they are contributing to a robust baseline from which we can confidently monitor changes to our environment. In return, volunteers receive excellent support and training opportunities to improve their identification and field surveys skills.

With the support of regional stakeholders, the NPMS can continue to grow and provide standardised data on plant populations and the health of our habitats across the country.

Acknowledgements

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NPMS training course participants taking a break among the bluebells in Snowdonia National Park

Links

To discuss the scheme, how data are used or volunteer involvement, please contact support@npms.org.uk

Full list of NPMS publications: www.npms.org.uk/content/conservation-and-research

NPMS website: www.npms.org.uk

National Plant Monitoring Scheme

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NPMS App available to download for Apple: https://apple.co/2HTySPJ and Android: http://bit.ly/2VkOdRf

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