



National Plant Monitoring Scheme

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WINTER NEWSLETTER 2021



WELCOME AND INTRODUCTION

SARAH SHUTTLEWORTH



We are now drawing near to the end of yet another rather unusual year, due to the continuing presence of COVID-19. However, despite this obvious hurdle in our path, the scheme has seen a great response from our dedicated volunteers. You have been busy surveying your plots (2,300 plots surveyed), with most managing two visits this year (64% with two visits). Data has been pouring in, so thank you for all your time and hard work. We will be aiming to bring you highlights of the year's findings in Spring 2022.

With cop26 (Conference Of Parties – Climate Change) now behind us, we are focusing even more on communicating just how important your surveys and data are, when facing a climate and biodiversity crisis. One of our analysts, Oli Wilson has been busy working on his first stage of research on habitat vulnerability in a changing UK climate. Check out his piece on this on page 02. One of the significant take-home messages from cop26 was that in order for us as a nation to reduce our carbon output to reach our targets, we all need to individually do our bit. By being part of the NPMS, gathering important plant and habitat data you are most certainly fulfilling this. The potential influence of your data, in changing how land is protected and managed is significant in the defense against climate change.

It is also the time to think of all things festive, so we have included some articles that might bring joy and cheer. We are all about the Holly and the Ivy in our Species Spotlight page 03 and Christmas tree inspiration for our Habitat Hotspot on page 04-05. We feel lighthearted with a ponder on nature-inspired names on page 06 and we have also included another fantastic tongue-in-cheek poem by Ben Averis on page 07.

Finally, we have prepared an extra bit of fun with our NPMS Christmas Quiz, see links to the quiz and more information on page 08.

THIS ISSUE

NPMS Data and Climate Change
PAGE 02

Species Spotlight
Holly and the Ivy
PAGE 03

Habitat Hotspot
Plantation Woodland
PAGE 04-05

'A rose by any other name'
Nature-themed names and influence
PAGE 06

Habitat Poem by Ben Averis
PAGE 07

NPMS Christmas Quiz
PAGE 08

Get Involved
PAGE 09





Oli Wilson explains the importance of NPMS data

Assessing UK habitats' exposure to two centuries of man-made climate change

Earth's climate has always changed, though the size and speed of the upheavals we are both causing and living through have no precedent in human history — or for millions of years before that. No area of life will be left untouched, but the impacts on habitats and ecological communities are of particular concern.

Much research assessing the impacts of climate change on nature involves peering into uncertain futures and predicting what might happen. But we can too easily forget that we're already living in a world whose climate has been profoundly and rapidly altered. While COP26 renewed the focus on whether the planet will be 1.5 (the safest achievable), 2 (extremely damaging) or 2.5-3°C (current commitments) warmer on average in 2100 than before the industrial revolution, about 1°C of that warming has already happened.

It's important, then, to think about the natural world's responses to climate change over recent centuries, as well as for the coming decades. Working with more concrete data on past changes has some advantages over more speculative future projections, but truly long-term observational datasets are globally rare. The UK is practically peerless in this regard: Met Office data stretches from 19th-Century weather station networks to some of the world's most advanced future climate projections.

I'm integrating these datasets to assess the exposure of UK habitats to 20th- and 21st-Century climate changes.

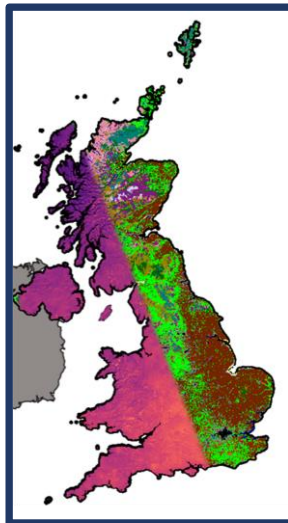


Spatial patterning means some parts of the country have experienced and/or will experience disproportionate climatic changes, which — depending on the capacity of their ecological communities to respond — could translate to greater impacts on biodiversity. Do historic and future climate changes affect different habitats? Or will the future pile yet more pressure on the same ecosystems? This research will help us find out. But how well can we assess these climate change impacts? Comparing sites in the UK's habitat monitoring network (Countryside Survey, NPMS, etc.) against these gradients of climate.



change exposure will show whether survey plots favour more or less changeable locations. Such bias would skew our appreciation of how the UK's biodiversity is responding — we may be missing the most drastic effects, for instance, or overestimating how widespread observed changes are.

And how is the UK's biodiversity responding? Combining data on climate change exposure and long-term habitat monitoring will help evaluate where, when and how ecological communities are resisting or responding to changing conditions. Ultimately, this research should provide important context for understanding how the intertwined global climate and biodiversity crises are playing out in the UK.



The left hand side illustrates the climate change exposure and the right hand side shows the UK land cover map

Integrating data on climate change exposure and long-term habitat monitoring will help evaluate where, when and how ecological communities are resisting or responding to changing conditions.



SPECIES SPOTLIGHT

We are all familiar with the popular Christmas song 'The Holly and The Ivy', whose history lies in both Pagan and Christian beliefs. In the song, the thorns of the Holly are representing the crown of thorns, and the berries, the blood spilt, whereas the ivy is meant to represent the Virgin Mary. In Pagan culture these two plants are burnt together at the festival of Beltane, with the Ivy representing female, and the Holly male. Aside from religious beliefs, they have long been used in decoration within the house since medieval times as an association with winter.



They are both native species and can be a positive presence in a habitat, however when the balance of abundance is tipped, they can present a problem. They are mostly associated with woodlands and indeed Holly *Ilex aquifolium* is a positive indicator in our fine habitat, Dry Deciduous Woodland.



The Holly and the Ivy – *Ilex aquifolium* and *Hedera helix*

Holly *Ilex aquifolium* is a familiar and recognisable species and very much representative of festive feelings. The leaves are very dark green, shiny and normally very spiny, although some leaves have almost no spines at all on older trees. It is an evergreen tree that produces red berries, which can provide wildlife with food. Holly is dioecious, which means that male and female flowers are on separate trees, therefore only female trees have the bright red berries. These trees not only provide shelter and food for mammals and birds but are also important for a number of moths and butterflies, with Holly Blue, Yellow-barred Brindle, Double-striped Pug and the Holly Totrix all needing the foliage for their larvae.

Ivy *Hedera helix* is also evergreen and extremely familiar, with leathery green leaves and detailed veining. Interestingly it has two different forms, juvenile and mature and also two subspecies *Hedera helix* ssp. *helix* and *Hedera helix* ssp. *hibernica*. The subspecies *hibernica* grows not by climbing like ssp. *helix* but by creeping along the ground.



The flowers of Ivy are hugely important for many invertebrates, at a time of year when there is little else producing nectar, but also the fruits that follow are high in fat and provide essential winter preparation for many species. The structure of Ivy also plays an important role for wildlife, with nesting or roosting opportunities for birds, mammals and invertebrates.

Again, the leaves also provide food for the larvae of such species as Swallow-tailed Moth, Angle Shades and also the second generation of Holly Blue butterflies.



Both Holly and Ivy can become problem species in woods where their population aren't managed. If you have ever walked into a wood with dense Holly growth, you will see what can happen. With little to no light getting to the ground flora, it dies off to only leaf litter and bare ground. It has been noted that Holly is now likely to be present in nearly every woodland compared with only half of woods in the past. The Woodland Trust actively thin the amount of Holly in their woods, as it is so dark and dense that it kills off all the undergrowth. A similar story can be told for Ivy, where in certain woods it can completely dominate the woodland floor. In grazed woodland (deer or livestock) the Ivy is kept under control through browsing, however without this management it can quickly take over and cover both trees and the woodland floor. This can lead to a decrease in wildflowers and lower plants like lichens, mosses and liverworts.

So whilst snipping some foliage this festive season for home decoration, know that you are not doing any harm by removing these twigs and branches, and maybe even helping to manage the wood!

Habitat Hotspot

Plantation Woodlands

It's that time of year when we are thinking about bringing a tree into our living room! It might be one from your loft that gets unpacked and unfolded or it might be a real one!

We sometimes venture to Christmas tree farms, where hectares are given over to growing these traditional decorations. This led to me to thinking about plantation woodlands and how in the NPMS we generally say to avoid them. But do they have more to offer than first meets the eye? Here we explore some finer details of the modest plantation.

Plantation Woodlands – NPMS and Wildlife

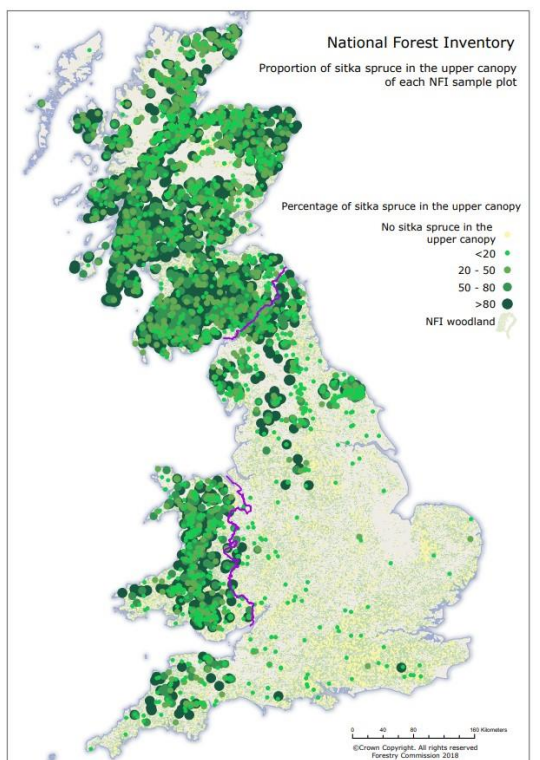
What are plantations?

A plantation is an area that has been planted with trees intentionally. This can include commercial timber production using non-native trees, or native plantations for wildlife and carbon sequestration.

Modern Plantations in the Landscape

During the First World War there was a huge demand on timber, which was obtained through the cutting of many woodlands. This meant that only 5% of woodland cover remained in the UK, which was an all-time low. Large scale afforestation was well underway by the 1920s in areas where the soil quality wasn't sufficient for agriculture, so often heathland and peatland were chosen, for example the parts of the New Forest, Thetford Forest and Cannock Chase. This continued into the uplands such as Kielder Forest and Dumfries, and now Scotland holds almost one million hectares of forestry.

Despite displacing other semi-natural habitats, these abundant plantations (with approximately 1.5 million hectares in total in the UK) can often be managed in such a way to provide excellent habitat for many species. For example, plantations have extended the natural range of some species, such as Firecrest and Common Crossbill. The Nightjar also benefits where open mosaics of plantation meet heathland.



Distribution of Sitka Spruce in the UK
www.forestryresearch.gov.uk





Types of plantations

1 Timber production – non-native. Often densely planted in distinctive rows. Very low levels of light penetrate to the woodland floor. These are usually comprised of fast-growing species such as Douglas Fir, Corsican Pine, Sitka Spruce and Larch.

2 Timber production – non-native and native with natural broadleaved regeneration. These are often more open in structure, although some areas may remain densely planted. Sometimes these sites can actually have very important woodland species in the ground flora community due to the site being an ancient woodland site (historically woodland since before 1600).

3 Timber production – native and non-native species in naturally occurring pine forest locations. These are primarily in Scotland where native Pinewood occurs. However much of these areas are actually plantation. But due to the use of species such as Scots Pine and Juniper, a more natural assemblage of ecological community can thrive.

4 Carbon Sink or Wildlife Habitat Creation – Native broad-leaved species. These are often planted as part of restoration projects; development mitigation, or community funded projects. The preceding habitat can be grassland or even arable. Sometimes these projects can be created on existing high-wildlife-value habitat, see more about this via the Plantlife Webinar 'Right Tree, Right Place' [here](#). A good mix of species is often selected with some species such as Oak and Beech for main canopy species and understory mixes of Hawthorn, Hazel, Rowan etc. Due to the nature of these sites, it can take a very long time for a more natural woodland community to develop. They can be important however by connecting and buffering existing woodlands. They also provide important ecosystem services, such as locking up carbon, helping to reduce flooding, and creating opportunities for recreation.

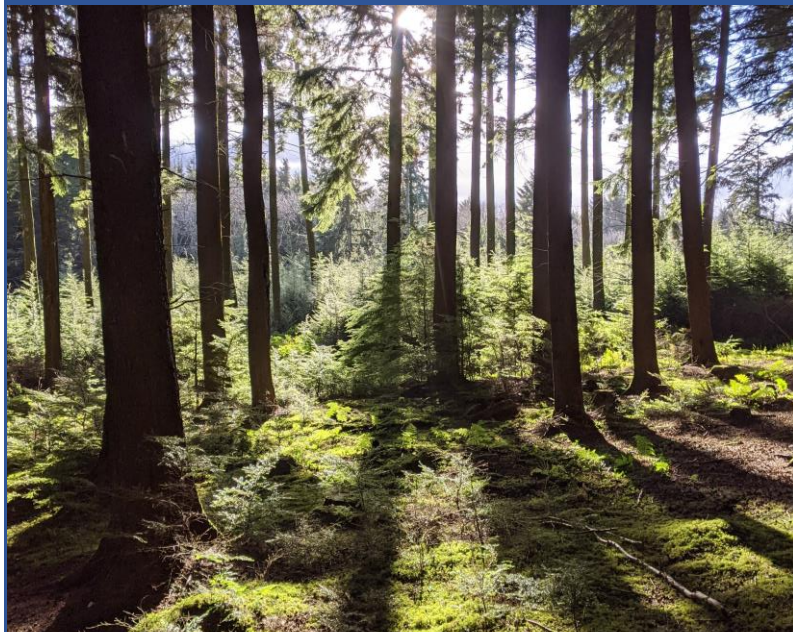


If you want to watch more about Native Pinewood, watch our habitat training [here](#)



Do we record plantation in NPMS?

The short answer is no, however things are slightly more complex than one first thinks. Under Native Pinewood and Juniper Scrub, we suggest that only true naturally occurring pinewood would be included. Our guidance suggests that you only include conifer woods of Scots Pine where you are north of the central belt of Scotland. Therefore, if you are recording north of this location the conifer wood could be a Scots Pine plantation. However, because of conifer woods being a natural habitat for this region the species assemblage is going to be similar enough to be considered semi-natural (as per type 3). The Broadleaved Woodland habitat allows for the inclusion of newly planted native woods as per type number 4, but excludes type 1, 2 and 3 in this category, i.e. commercial plantations of native species or ornamental woods in the grounds of country houses. However, I would suggest that any commercial plantation that is potentially species rich be considered for inclusion as per type 2 under Broadleaved Woodland with notes under management. We or your local mentor would be happy to discuss sites like this, as we could be missing on the monitoring of potentially viable plot locations.



Willet Hill (Forestry England) in the Quantocks, Somerset. Full of fantastic plants and fungi





“A Rose by any other name”

Do nature-inspired names have an influence on interest?

Being a person interested, or rather obsessed, with natural history, I have always thought that the names of my children would reflect that. Indeed, my own daughter is named Flora after the literal Latin translation for flowers and plants, but also for the Goddess Flora of Spring, nature and fertility. If she had been a boy, I would have called him Rowan after the tree.



A beautiful pink flower on Bramble *Rubus fruticosus agg.*

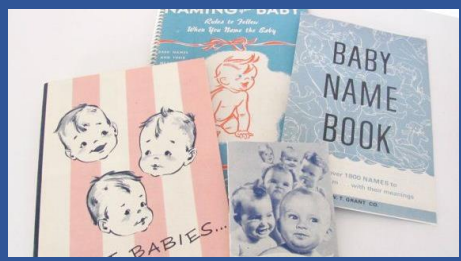
She is now 5 and thoroughly a nature nut. She already knows about 20 plant species, as well as a similar number of fungi. Her interest is deep and can allow her to spend a few hours walking through meadows or woods, spotting orchids and fungi (as long as she has regular snacks). My son aged 10 is similar, yet his name although floral in some origins (Lawrence – Laurel) isn’t as direct. Therefore, I’m mostly convinced that it is purely my influence as a parent, rather than their namesake.

However, this is something that has got me and my colleagues intrigued. More times than we can list, we have come across people working in the conservation or environment sector with very appropriate names. John Birch, Violet Smith, Peter Falcon etc are all types of names I am referring to, along with the more unusual names like Willow, River, Raven and Juniper.

Have these people been influenced by their name? Or have they been named by parents with interests in the natural world, and thereby been directly influenced by actions not names? A phenomenon called ‘nominative determinism’ has been used to potentially explain this. Are you more likely to choose a nature-inspired name for your children if you are passionate about nature? Are you hoping that by doing so you will instill an interest by default? Or is it simply a case of experiences in nature given to the child that determines the interest?




My daughter Flora getting to grips with a hand lens




I on the other hand have a very normal name with no real linkage to nature, and with parents that didn’t actively encourage an interest in the natural world. Yet I sought it out, I sought out mentors who would develop that interest and watched endless hours of David Attenborough (maybe he is my biggest influence). I then studied zoology and pursued a career in conservation, which is notoriously difficult. Therefore, was it almost instinctive or innate in myself, rather than any influence or title?

Ultimately, whether we are named after a wildflower, a popular figure or simply a name in fashion at the time, we get to decide what our purpose is. You have all decided on doing your bit for conservation, whether that is part of an established or blossoming career, or simply in your spare time because you are interested. You may have a name that is nature-inspired, or you had/have significant influences in your life to encourage the interest or perhaps neither of these. But the more people who do have an interest and therefore want to protect the natural world, the better, I think - whatever their name is.





Habitat Poems by Ben
Averis



Pine and Juniper

By Ben Averis

The winters are cold
And flowers are few
The pine trees are old
And the feeling is blue

Juniper leaf
Dark as can be
Needle of grief
On a wretched wee tree

Juniper, pine
Trees of the place
Where the sun don't much shine
And the wind chills your face

It'll frost, it'll freeze
Even summer's not warm
No help are these trees
In the darkening storm

To the pines in the heather
You go at a price
For the murk and the weather
Are not very nice

To enjoy the old pines
In the shivering cool
Is one of the signs
Of a miserable fool

The NPMS Christmas Quiz



This year for a bit of festive fun we have created a quiz focusing on plants, habitats and Christmas. Completely anonymous but you can see how you did and hopefully learn from anything you didn't get right first time.

Find the Christmas Quiz and survey [HERE](#)



Upcoming reports and research

Quality Assurance Research paper
– Findings and outcomes of a combination of the Big NPMS Quiz and the field Quality Assurance event in June 2021.



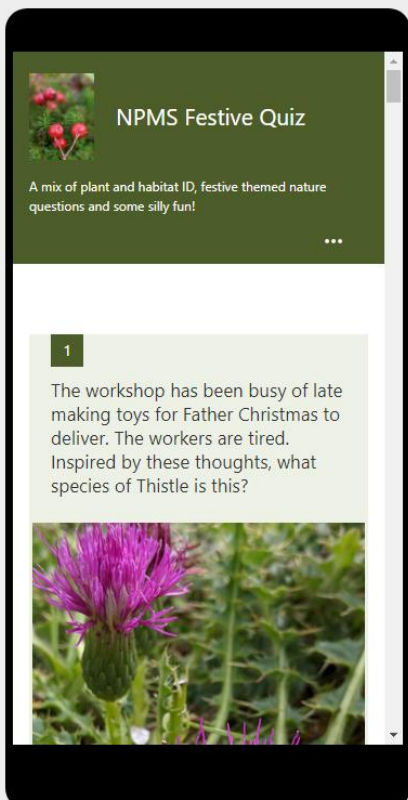
Climate Change and Vulnerable Habitats Research

See page 02



NPMS Annual Report 2021 due Spring 2022

– Summary and findings of 2021



We will share the quiz on social media too, please share to friends and family if you think they will enjoy!



GET INVOLVED



Would you like to share your NPMS story? We would love hear from you about your plots, surveys or even friendships you have made whilst being involved. Send us an email with a few paragraphs and we can publish it as a blog piece.

BSBI New Year Plant Hunt 2021

Saturday 1st to Tuesday 4th January 2022

Click [HERE](#) to find out more and take part

Data collected by New Year Plant Hunters help the BSBI build up a clearer picture of how our wildflowers are responding to changes in autumn and winter weather patterns.



Photo from BSBI page

Find out more about joining a local botany group! It's a fantastic way to learn, make friends and share experiences. Check your nearest local BSBI group [HERE](#).



ACKNOWLEDGMENTS

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 who have promoted the scheme. Thanks also to Andrew van Breda, Biren Rathod and Karolis Kazlauskis for technical support.

Also a huge thank you for the effort by all our dedicated volunteers who make the programme possible and make this such a lovely 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.

Thank you to all the contributors to the newsletter.

All photos by Sarah Shuttleworth unless otherwise stated.



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