National Plant Monitoring Scheme

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SUMMER NEWSLETTER 2021

WELCOME AND INTRODUCTION

SARAH SHUTTLEWORTH

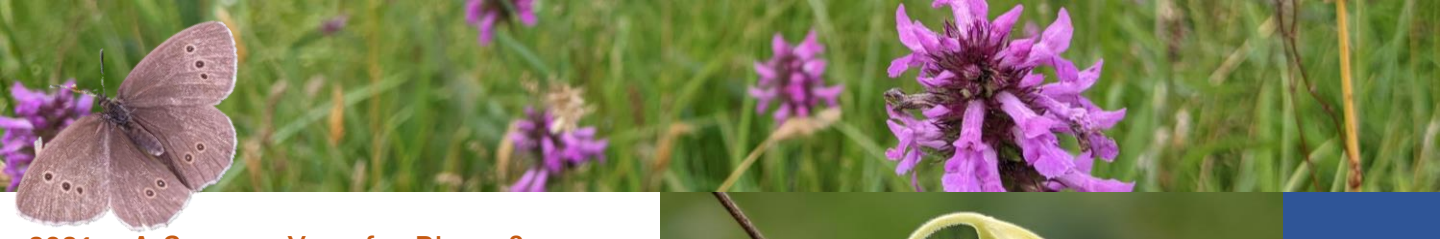
Although we are all still making our way through the muddy waters of a pandemic, normality feels just around the corner. Despite the travel restrictions in early summer, this year has allowed us to get out and about more. Hopefully, you have found your involvement in the NPMS this year much less of a challenge and have managed to get out to do your survey. Maybe you are new to the scheme, in which case you might be feeling daunted. Take it from our veterans of the scheme who say, 'the first year is the hardest, but once you are set up, it's easy sailing from there'. Many of our new volunteers were able to hear this for themselves at one of our regional zoom events.

The Webinar Training series has been a huge success with all NPMS habitats covered. Did you have a favourite? Luckily for anyone who missed out, they are on our YouTube channel or website to be watched whenever you need a handy reminder.

Did you notice how late spring was this year? Did that affect our plants and the summer season to follow? Check out the article on page 2 all about the strange year 2021 has been for plants.

Finally, the autumnal feelings that are blowing in with the wind are a helpful reminder that it's nearly Data Entry time! Snuggle under a blanket with your laptop and submit that all-important data. Check out our webinar on data entry if you need a reminder or email your local mentor for any help. Maybe you used our app in the field in which case you are already done! Either way thanks for all your amazing efforts this year and I look forward to updating you all with some results once that data is in!

THIS ISSUE



2021 – A Strange Year for Plants?

2021 hasn't quite been the year of relief we all needed, and it seems that the weather was just as unsettling. We have all felt that spring this year was slow to start and although April began settled, it soon turned very cold. The number of air frosts were notable and overall, it was an unusually cold, dry month.

The provisional UK mean temperature was 5.7 °C, which is 1.7 °C below the 1981-2010 long-term average, with April being colder than March for the first time since 2012. Mean minimum temperatures were widely around 3 °C below average away from westernmost coastal counties. The number of days of air frost across the UK was the highest in a series since 1960. Many areas were very dry, with only parts of Wiltshire and northern Scotland exceeding 50% of average rainfall, making it provisionally the UK's fourth driest April in a series from 1862. May was similarly cold with the UK mean temperature at 9.1 °C, which is 1.3 °C below the 1981-2010 long-term average, making it the coldest May since 1996 (Climate summaries - Met Office).

How did this affect our plants? Well, it is still early days in terms of data and information, but your NPMS data should help to flag any potential consequences to the climatic conditions. Botanical recorders have noticed some potentially significant changes, with reports of super abundances of species such as Cowslip *Primula Veris*, Bird's-eye Primrose *Primula Farinosa* and Lesser Water-plantain *Baldellia fanunculoides.* Could some of these apparent changes in population be down to the climatic conditions of 2021, or climate change in general? Or could these changes be down to simple variations in populations due to their species ecology?

Let's investigate further

If we delve a bit deeper into the biology and ecology of Cowslips *Primula Veris*, we find that they are shade-intolerant. Shade or increased competition reduces their performance and flowering (R Brys, H Jacquemyn 2009). Could the fact that our trees were later to come into leaf be a factor? First leaf dates in 2020 were particularly early however (on average 10.4 days earlier than the 1999–2019 baseline) for a range of common shrub/tree species. We don't yet have the exact phenology data for 2021, but it is possible that this could be significantly later than the baseline due to the cold, dry spring. Cowslips have a well-developed drought tolerance (R Brys, H Jacquemyn 2009). Could the fact that April was so dry have given them an advantage? When a grassland is affected by drought, the dominant grass species tend to die back, reducing productivity and opening up gaps in the sward. This allows other species to increase in frequency and abundance in the following years (**Grime *et al.* 1994**). In a study by M D Morecroft et al in 2004, they found that grass species in a grassland habitat, had an increase in total cover abundance in early summer if the previous summer had had an increase in water supply, but there was no effect of winter precipitation.

Productivity is therefore likely to decrease with more frequent summer droughts, with no mitigating effect of wetter winters (M D Morecroft et al 2004). 2020 had a significantly dry period in late spring/early summer, this could have influenced grass growth this year, compounded by the dry spring for 2021. May 2020 was very dry with less than 20% of average rainfall across the southern half of the UK; for England this was the driest May in a series from 1862. Less than 5 mm fell widely across southern England and a few locations recorded below 1 mm for the whole month (State of the UK Climate 2020 - Kendon - 2021 - International Journal of Climatology - Wiley Online Library). Although our winters are getting increasingly wetter the study by M D Morecroft et al, shows that this might be irrelevant when it comes to vegetation growth resulting from a dry spring.

Although Cowslip *P. veris* is still a widespread grassland herb, it has become less abundant in the British Isles and continental Europe. The decline could be attributed to changes in land management, in combination with ongoing destruction and nutrient enrichment of permanent grasslands. However, from 1980 onwards the species has increased substantially in many areas of the UK, largely because its seeds are included in wildflower seed-mixtures that are sown on new or upgraded road and motorway verges, embankments and urban conservation areas. (R Brys, H Jacquemyn 2009). Also on a positive note the species is capable of persisting several years and even decades after management has ceased (**Brys *et al.* 2004**; **Ehrlén *et al.* 2005**; **Lehtilä *et al.* 2006**), and it responds rapidly to environmental changes and/or vegetation succession (**Brys *et al.* 2005**; **Endels *et al.* 2005**; **Lindborg *et al.* 2005**).

Therefore, although a population could eventually decline due to changes in management, given the right conditions again it could flourish. It is also known that the peak number of flowering plants, which occurs at the end of April, can vary strongly between years (**Inghe & Tamm 1988**).

Therefore, the increase in recorded species can be attributed to several factors, ranging from changes in management, natural population fluctuations, dry springs the year before reducing competitive grasses the following year or maybe the potential delay in tree leaf appearance. Without the latest climate and NPMS data, we can only speculate.

Although this year has been noticeably different in general the trend is still showing that our climate is changing. Recent decades have been warmer, wetter and sunnier than the 20th century. Extreme weather events, such as droughts and floods, or even a very dry cold spring, have clear impacts on ecosystems and the ecosystem services they provide. Climate change may alter the frequency and severity of such events. Extreme events associated with climate change may have a greater impact on biodiversity and ecosystems than changes in the 'mean climate' (Climate change adaptation manual).

NPMS data will help us discover what these changes look like and the complexities of these changes. This in turn can help to influence practise and policies going forward. Submitting your plot data really is that critical, and you really are doing your bit!

Images - Lesser Water Plantain, Bird's-eye Primrose – © Andrew Gagg Cowslip © S Shuttleworth

SPECIES SPOTLIGHT

Devil's-bit Scabious *Succisa pratensis*

This later flowering species is a great one to learn to identify, especially as it appears as a positive indicator in five of our fine-scale habitats; Wet Heath, Machair, Dry Montane Heath, Dry Acid Grassland and Neutral Pastures and Meadows. It is an NPMS Wildflower level indicator, which means it needs to be identified at all levels. The good news is that it is quite distinctive with only a handful of potential confusion species.

It can appear in a range of habitats, hence it appears in 5 NPMS habitats, with perhaps a slight tendency towards the more acidic conditions. It can be found in damp meadow and marshes too and along woodland rides and riverbanks.

The purple-blue flower heads are rounded and gently nodding, often described as pincushion-like. The colour can vary slightly from mauve to a deep bluish purple, and they are quite large at 1.5-2.5cm across. This flowery pincushion is actually made up of multiple flowers and is not one single flower like you might think. Each individual flower is called a floret, and each of these is more or less of equal size. Unlike Field or Small Scabious (*Knautia arvensis* and *Scabiosa columbaria*) which have florets on the outer part of the rounded head with longer petal like structures than those in the centre. The florets are made up of joined up petals that form a structure called the corolla that divides into 4 equal lobes that splay out. The stamens (male part of the flower with the pollen) are long and protrude out of each floret.

It's leaves are just as important to get to know as without the flower stalks this will be the only way to recognise it. They are long and oval shaped and most importantly undivided. They are otherwise similar to Field Scabious. The majority of the leaves are around the base of the plant (basal leaves) and only a few stem leaves.

It could also be confused with Sheep's-bit (*Jasione montana*) and the much scarcer Round-headed Rampion (*Phyteuma tenerum*). The thing to look for in this instance to confirm it is a Scabious not one of the former (campanula family) is that the leaves are opposite.

It is a great species to focus on now as it's one of our later flowering grassland species and should be out between July and October.

One of the most interesting things about this species is it's names. It gets its Latin name - 'Scabere', meaning to scratch - from its traditional use as a treatment for skin conditions, such as scabies and the sores of bubonic plague. The common name however is said to come from the fact that its roots look like they have been bitten off, supposedly by the Devil.

Devil's-bit Scabious is rich in pollen and nectar. It is therefore very attractive to most pollinators and is particularly important as a foodplant for the declining Marsh fritillary butterfly and the Narrow-bordered Bee Hawk-moth.

Habitat Hotspot

Grasslands in Late Summer

You may have just been out to do your second survey visit or maybe you are just about to, either way grasslands can be tricky at this time of year. We have two Broad-scale habitats for grasslands, Lowland Grassland and Upland Grassland. Deciding which you have is mostly down to location and altitude, with upland grasslands generally referring to grasslands above 300m for acid and above 500m for calcareous but can extend down to sea-level in the north and west of Scotland. These upland grasslands are split into Montane Acid and Montane Calcareous. Lowland grassland would be for any other grassland habitat, and is split into Dry Acid, Dry Calcareous, Neutral Damp and Neutral Pastures and Meadows. It is worth noting that if this is your first visit to your plot and it is grassland, but due to the time of year it is too difficult to decide which fine-scale habitat, you can record at the Broad-scale only. When you visit again next year you could decide on the fine-scale when you have more species information.

Identifying the species at this time of year can be tricky as either most have finished flowering and are now setting seed or the area has been subject to a hay cut, in which case you are dealing with only half a plant. The first thing to remember is not to panic, we only want to you do what you can. If this means you can only identify a few species then that is fine. A few pointers however can help with this second survey in a grassland.

One of the biggest changes from your earlier visit might be the percentage covers of species as some have died back and others have just started. Species like Devil's-bit Scabious (see our species spotlight), Betony, Yarrow, Burnet Saxifrage, Wild Carrot are all later flowering and now looking their best. There may have been no sign of these species in the first survey or maybe just the basal leaves beginning and it was too hard to identify from just this feature. These repeated surveys of the same spots can be a great way to learn these species in detail as you see your plot species over a long time period. Another great reason to take part!

Don't forget to tag us in your social media plant or plot photos! We'd love to share what you see with the whole NPMS community! #NPMS2021 @theNPMS

Top Tips

- If this is your second survey of the plot then the species you recorded before will be a guide to what is still identifiable.
- Over time you will get more familiar with the seed heads of certain species and what grasses look like when dry and finished. It could be worth taking photos of both stages for future reference of these plants.
- Remember to really look down in amongst the long grass as some species will be regenerating and coming back up already.
- If you plot is cut for hay then perhaps leave the second visit for a few weeks after the cut at least to give things a chance to grow back enough for you to identify them.
- If cut or heavily grazed then it can be helpful to understand what might be worth looking out for by looking at what is growing along fences or boundaries.
- In terms of management, have the cuttings or risings been removed or are they left to sit and rot or leaving a thatch of dry material in the sward?
- Can you find out from the owner when the hay cut is planned and whether they plan to aftermath graze the field afterwards (grazing after a hay cut)?

Plant ID Apps!

A review of 10 of the most common

Sarah Shuttleworth and Abbie Kilgore – personal reviews

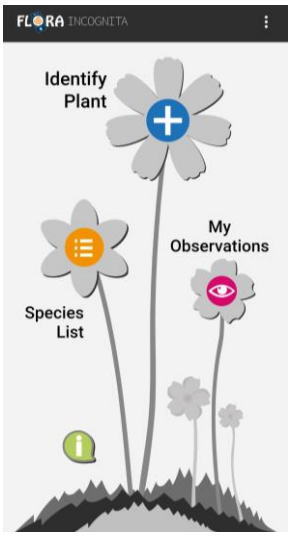
These days it seems there is an app for everything, including finding out what creature, critter or plant you are looking at. But are they useful? Are they accurate? Or are they simply taking up space on our already cluttered smart phones? Abbie and I decided to investigate. We tested 10 apps, splitting them so we had 5 each. We used them out in the field and put them through their paces. We wanted to look at ease of use, accuracy, costs involved and what additional features they had.

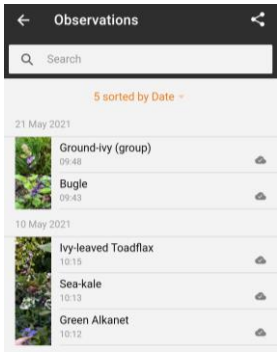
Before you start uploading images it should be mentioned that some plant ID apps have polices that by using the app you have consented to relinquish your rights to any uploaded images. This could see your image being distributed, published, reproduced, marketed or sold to a third party without further consent. If you wish to maintain the creative property rights of your image please fully read the apps Terms of Use before you get snapping.

Furthermore, on a health and safety note, the plant apps drained our phone charge extremely quickly therefore ensure you bring a portable phone charger to contact people if required.

Flora Incognita

This was by far my favourite app out of the 5 I tested. It is free to download and there are no other costs involved. There were no adverts, which I think is always a huge positive. The Flora Incognita Project was created by Ilmenau University of Technology and the Max Planck Institute for Biogeochemistry Jena. The app combines traditional plant identification with the latest methods of AI. The aim of the Flora Incognita research project is mapping plants, therefore they record and use the location of where the plants are photographed. Therefore using this app is not only beneficial to your learning but also makes an important contribution to biodiversity monitoring and research! Win win I say! The main interface is extremely easy, simple and pleasing to the eye. There are 3 main options each located within the centre of a flower on the screen. The largest option is Identify Plant with a plus symbol. Then there is My Observations and Species List. There is also an i symbol for help with using the app. When you want to identify a plant you simply click on the plus symbol.





Ease of use 5/5

Identification skill 4/5

Range of features 4/5

Overall likeability 1/5

Rating

Here are the 10 apps we tested

- PictureThis
- NatureID
- What's that flower?
- iNaturalist
- Pl@ntNet
- Flora Incognita
- LeafSnap
- FlowerChecker
- PlantSnap
- Seek

Seek

This app has been created as a simpler version of iNaturalist. One of it's unique features in comparison to our other choices, is that it can identify and record other taxa (critters!). It also shows you what is being recorded in your local vicinity, which is a nice feature. I particularly like the challenges and species badges, where you get badges in stages for different animal groups. For example I used the app to identify a Black Snail Beetle and now I have been awarded my Bronze Insect Badge! The challenges are more focused, for example the Arthropod Predator Challenge for August. In terms of it's ability to identify botanical species however, I found it generally only able to get to genus a number of times. Therefore I would probably use this more for my invertebrate observations when out and about. As with a lot of these apps your observations are listed under a menu option.

Ease of use 3/5

Identification skill 2/5

Range of features 4/5

Overall likeability 3/5

Rating ★★★☆☆

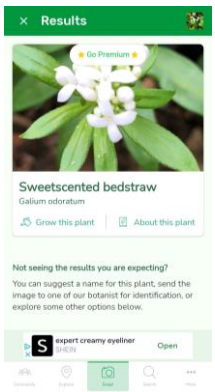
Ease of use 2/5

Identification skill 2/5

Range of features 2/5

Overall likeability 1/5 (adverts severely diminish score)

Rating ★★☆☆☆



Plantsnap

After loading the app it immediately takes you to the camera ready to snap your plant! This could be handy but also slightly frustrating. I personally prefer a home screen, where you can choose the function you wish to select. The other huge downside for me, is although it's free to download it does have adverts. This can be very frustrating and get in the way, especially if you accidentally click on one of them. When searching for a species, it can often give you a lot of cultivars and the information on the plants seems more tailored to growing it rather than identifying it. I wouldn't recommend this app for the purposes of plant ID in the UK, but maybe for using around a garden centre when puzzling what to buy for your herbaceous border instead!

LeafSnap

Rating ★★☆☆☆

This app is very similar to Plantsnap, which is no surprise given the name similarities. This app is loaded with adverts, which pop up every time you select another function. It does however have a home screen where you can choose to take a photo or upload a photo you have already taken. I tested this app both with plants in the field and from photos I had taken before. It was generally accurate for flowering plants and even managed Sharp-leaved Fluellen *Kickxia elatine* just with a photo of the leaves.

Ease of use 2/5

Identification skill 3/5

Range of features 2/5

Overall likeability 2/5

The information about each plant is limited and there is no information on habitat or UK distribution, which could lead to a misidentification. You can access your recently identified plants and add them to a list titled My Plants. This function however, seems primarily for growth information and reminders on when to water and feed, therefore more set up for gardeners than botanists.

FlowerChecker

This was another app that was advertised as free and under the plant identification search in the app store. However, saying that it is free, is misleading. In order to get a plant identified you have to use credits and you only get enough free credit for one plant to be identified. The idea is that you would send the photo off to be verified by an individual to identify it. This would cost £1.29 per plant if you bought an individual credit each time or £1.80 for 5. This is potentially not a good use of time and resources, when there are other options available that can be used in conjunction with a good ID book.

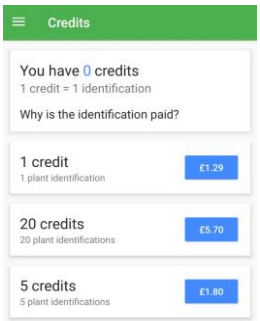
Ease of use 2/5

Identification Skill – could only test with one species so unknown

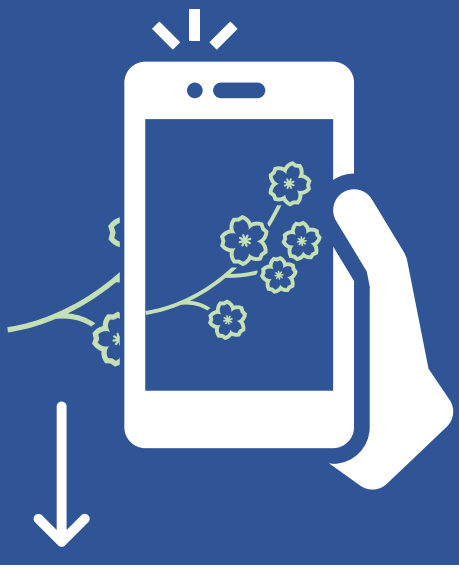
Range of features – 1/5

Overall Likeablity – 0/5

Rating ★☆☆☆☆



The remaining 5 apps were tested by Abbie Kilgore and her colleague Katie Taylor from DAERA. They headed off into the National Trust's Portstewart Sand Dunes, Northern Ireland to get snapping and test the remaining 5 apps



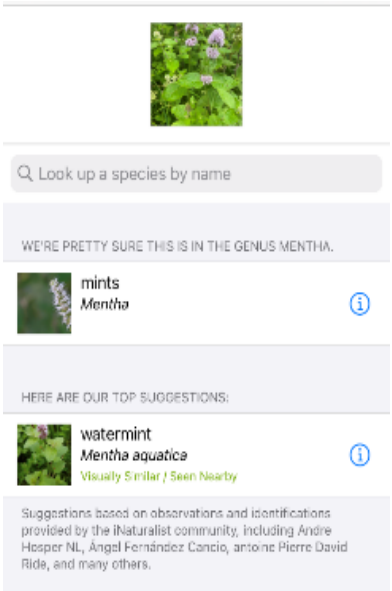
Ease of use 5/5

Identification skill 5/5

Range of features 4/5

Overall likeability 4/5

Rating ★★★★½



iNaturalist

iNaturalist is a joint initiative by the California Academy of Sciences and the National Geographic Society with the aim to record your own observations and share them with the community as well as receive suggestions and crowdsourced identifications of what you've seen.

The free app requires internet for full functionality but allows the uploading of images from your phone's picture gallery when signal returns. Once the image is uploaded the location is automatically derived from the photo's GPS tag and a certain Genus along with a list of suggested species are provided, for example; Water Mint *(Mentha aquatica)*.

We found the app to be very accurate to Genus as well as always suggesting the correct species (although no confidence levels were provided). Your identification accuracy can also be improved by the apps ability to upload multiple photos. In addition, other taxa such as birds and insects can be recorded and there is space to save lists of observations without the need for phone signal. The fact the app is accurate to Genus suggests it would be a good tool for beginners to help provide a starting point to look in their field guide and/or to select the correct key to use.

NatureID

This was created by AIBY Inc. to 'identify plants with a tap of your fingers!' using a plant recognition algorithm. It provides a 3 day free trail after which it costs £17.49/year. **Remember free trials are great but they need to be cancelled within the allotted time period to avoid being charged!**

Once a plant image is uploaded a few options of species identification are provided – the most likely being the first displayed (swipe right for alternatives).

Only one common name is stated so it is important to check the scientific name. In terms of the app's accuracy it was able to correctly identify all coastal plants tested including identifying Bird's foot trefoil *(Lotus corniculatus)* when only the leaves where uploaded. NatureID also provides a great deal of useful information such as species description, similar species, species ecology as well as information on the plants uses and cultivation which is of particular interest to gardeners. NatureID also states to diagnose plant diseases and provide expert advice on how to care for your plants although, we did not test this functionality.

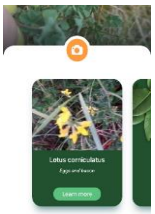
Ease of use 5/5

Identification skill 5/5

Range of features 4/5

Overall likeability 4/5

Rating ★★★★½

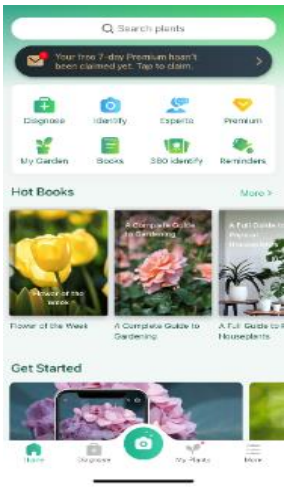


PictureThis

This app is by Glority Global Ltd. and works using advanced artificial intelligence to be 'The Botanist in your Pocket'. The app states it has a 7 day free trial and then costs £24.99/year however, you can use the app indefinitely to identify plants without the free trial: when opening the app you come to a pre-home screen where you click cancel (top right hand corner). This then takes you to the proper home screen where you can identify plants from. Positively the app has no adverts except the free trial bulletin.

The app was deemed accurate for a wide range of species from Sea thrift *(Armeria maritima)* to trickier species such as Mouse-ear hawkweed *(Pilosella officinarum)* and provided a whole list of associated common names (recommend looking at the scientific names to avoid confusion). The app also identifies common grasses, sedges and fungi however, I would be cautious using apps for these taxa due to some being cryptic in nature or key ID features such as ligules (in grasses) not being visible in photos. PictureThis also identifies birds and insects although we have not tested this functionality.

In addition, for each identified species PictureThis provides a section for common questions and answers as well as a general description of the species, associated poems, stories, symbolisms and more useful to a botanist two sections are designated to species characteristics such as biometrics and flowering times as well as its taxonomy. In the world of social media the app also allows you to share your findings easily (make sure to tag @theNPMS).



Ease of use 5/5

Identification skill 4/5

Range of features 4/5

Overall likeability 5/5

Rating ★★★★½

We strongly advise volunteers to only use plant ID apps as training tools rather than solely for identification. You could use the app to narrow your identification to a genus then use your book!

Pl@ntNet

Ease of use 3/5 (sometimes the app would not load images – this could be fixed by refreshing the app)

Identification skill 4/5

Range of features 5/5

Overall likeability 4/5

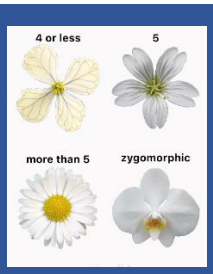
Rating ★★★★☆

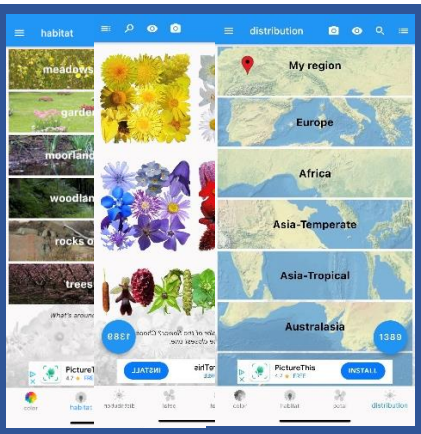
The overall accuracy of the app is good as some common species were easily identified with a high confidence such as Common Knapweed *(Centaurea nigra)* with 90% confidence however, other common coastal species such as Sea thrift *(Armeria maritima)* was correctly identified with 71% confidence but the app also displayed 7 other options such as: Jersey Thrift *(A.arenaria)* and Alpine Thrift *(A.alpina)* with confidence levels ranging from 10-1% which could potentially be confusing for beginners although the low confidence levels helps omit these options as plausible identifications.

This is a free plant ID app with no adverts and was created by Girad-France as a tool to help identify plant species (flowering and non-flowering) with pictures. Pl@ntNet states that it is a great citizen science project as all the plants you photograph are collected and analysed by scientists around the world to better understand the evolution of plant biodiversity and therefore to be better able to preserve it.

Once you have uploaded your image you are offered to select your related organ e.g. have you photographed a leaf? the flower? the fruit ? etc. this is useful as you can upload multiple photos of different parts of the plant e.g. leaf and flower to obtain a more accurate identification. You are then provided with a list of potential identifications and their associated confidence ratings (%). You can then 'confirm' an identification and share the images to add to the apps training data to improve future identification of this species.

Pl@ntNet also correctly identified vegetative features such as the leaves of Yellow rattle *(Rhinanthus minor)* but provided a low confidence level of 41% although, this is expected to improve as more users confirm their images as correctly identified.





What's That Flower?

Ease of use 3/5

Identification skill NA

Range of features 1/5 (for free features)

Overall likeability 2/5

Rating ★★☆☆☆

This is a free app created by Adrian Benko for educational purposes and provides access to an encyclopaedia of plants however, to use most of the features you have to make in-app purchases from £1.59 - £3.99. The app does have a limited number of adverts however, they are small and non-interfering.

Specific species can be found by searching via flower colour/habitat type/petal type/ region then by scrolling through the species options till you find a match.

It should be noted that the list of habitats is incomplete for example coastal habitats such as sand dunes are not listed therefore we were unable to test the accuracy of this app any further.

The app is also limited by only being able to identify plants when in flower. Furthermore, the fact you had to scroll through options to select a species was time consuming and decreased the accuracy of the identification.

Overall, I would not recommend What's This Flower? due to the habitat gaps and its limitation of only identifying flowering plants therefore it cannot be used to identify vegetative features. The encyclopaedia of plants is useful but I would still recommend a small field guide instead.

Introducing **Oli Wilson**

Oli started working for Plantlife within the NPMS in June this year as our very own Ecological Modeller or Data Analyst
Read his full interview here

"Boring plots are super important! Records of where species ***are*** form the foundation of so much ecological research, but records of where species ***aren't*** open up a tonne of extra possibilities."

Can you tell us about yourself – what were you doing before you came to the NPMS?

I kind of struggle to define what kind of scientist I am – I think I'm probably a biogeographer because I'm interested in environmental change through space and time, but I've also got an MSc in ethnobotany (the study of the relationships between plants and people) and a degree in biological sciences. I'm just coming to the end of a PhD at the University of Reading which is a mix between ecology, palaeoecology and archaeology. I've been studying the links between plants, people and climate change in the past, present and future, focusing on the unique Araucaria forests of southern Brazil. And going back a bit further, I spent a few years as a school science teacher and a few more working in botanical gardens.

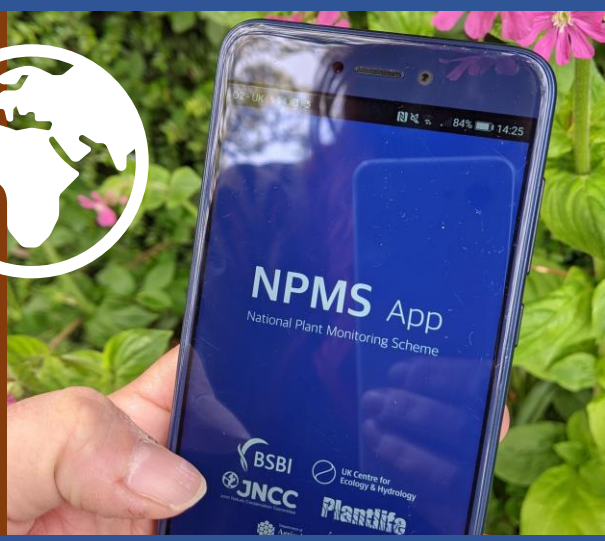
What was the main thing that attracted you to the role do you think?

The relationship between plants and climate change interests me a lot, and this role offers the opportunity to look at it in detail – particularly focusing on ecosystems and species that are (literally) closer to home than the ones I've studied so far. Researching UK plants is proving to be quite a step change though – the amount of data that's available is mind-blowing! We're so fortunate in this country to have genuinely world-leading data on our biodiversity – largely thanks to initiatives like NPMS – and the difference from what's available for tropical diversity is really stark. These rich datasets make it possible to use much more complex research methods and advanced modelling techniques than I've employed previously, so I'm looking forward to getting to grips with them.

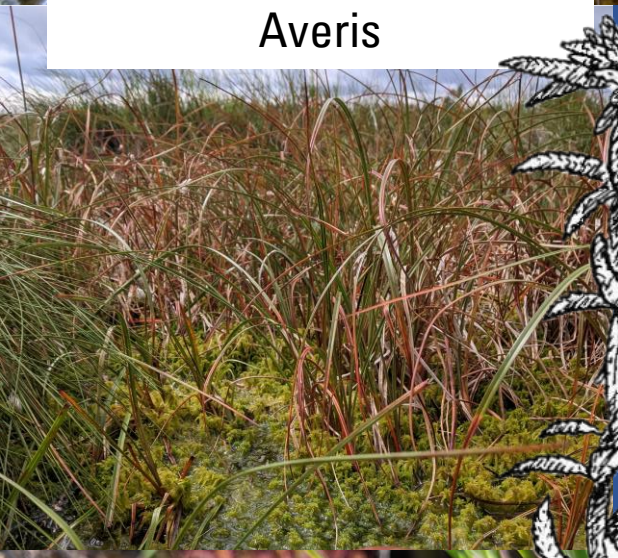
Your data has never been more important!

COP26 (2021 United Nations Climate Change Conference) 1st Nov – 12th Nov

With your help we are proving that our habitats are changing in response to climate change. The analysis on the dataset in the coming months will have a focus on the affects of climate change.



Habitat Poems by Ben Averis



Bog and wet heath

By Ben Averis

Heathers grow in heaths, they do
But bogs are pretty heathy too
Telling bogs and heaths apart
A very scientific art

Look for hare's-tail cottongrass
The test of bog it helps to pass
And certain types of *Sphagnum* moss
Tricky ones, they'll make you cross

So – are the branches thin or fat?
What's the colour? Stuff like that
Might lead us to a species name
For the habitat classification game

In the wild north and west
Wet heaths and bogs are at their best
Some bogs are blanket; others raised
Some are grassy 'cos they're grazed

Wet heath and bog on peaty ground
Saturated all around
Soggy 'cos it rains and rains
Or cut across by hidden drains

Watch your feet on slippy peat
Falling on your seat ain't so neat
The nasty peatland world don't care
It's waiting there for the fools who dare

GET INVOLVED

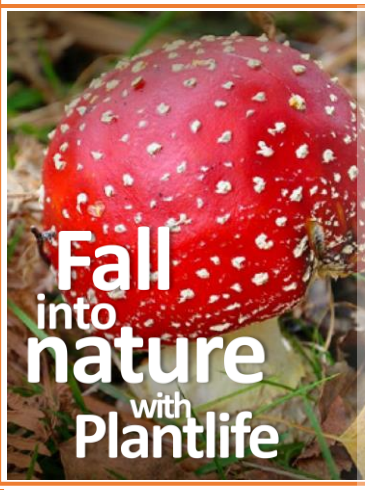
Are you based in the South or East of England, North Wales or Northern Ireland?

Do you want to help?

Be a Mentor!

We have gaps in regional coverage in these areas

Send and email to support@npms.org.uk if you can give some time



Throughout October, we are running a free digital programme, ***Fall into nature with Plantlife***. Whether you want to find out more about what you can do, explore conservation through art, develop plant identification skills or discover plant-rich wildernesses across the UK, we believe that our programme has something for you.

Fall Into Nature – click here

Classes for Grasses

Episode 1 Grass Structure and Anatomy out now!

Episode 2 – The Usual Suspects out soon

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 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.

Thank you to all the contributors of the newsletter.

We are here to help. Send us an email or give us a bell.

support@npms.org.uk

07711 922098

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NIEA Northern Ireland Environment Agency www.daera-ni.gov.uk

UK Centre for Ecology & Hydrology

An Agency within the Department of Agriculture, Environment and Rural Affairs www.daera-ni.gov.uk

Botanical Society of Britain & Ireland

JNCC