



Plantlife press release

Spokespeople including Dr Oliver Pescott and Dr Oliver Wilson available for comment

All UK habitats to be impacted by exposure to climate change - but some more than others
Uneven exposure: Southern, central and eastern England, and upland areas are on the front line
Ecological monitoring schemes, including the National Plant Monitoring Scheme (NPMS), are key for tracking the impacts of these changes
Ahead of National Meadows Day (1 July), Plantlife highlights the value and vulnerability of grasslands

All UK habitats are set to be severely challenged by exposure to climate change in coming years, but some are facing far greater difficulties than others, according to a new research paper published today (29 June) in *Journal of Applied Ecology*.

The new study brings together data on the UK's past and future climate, current land cover, and ecological monitoring sites. The results show how far human-driven climate change has shifted conditions from their state at the beginning of the 20th Century - and how much more change could be in store over the coming decades. The research also reveals the value of habitat monitoring initiatives for tracking the impacts of these changes on nature in the UK.

The authors report that in each successive multi-year period studied "the UK's climate change exposure has increased drastically: changes from the last decade to 2021–2040 are predicted to be far larger than those within the 20th Century." **Human-driven climate change is likely to fall hardest on arable and horticultural land, chalk grasslands, and urban and suburban areas.**

According to the findings, chalk grasslands are the most exposed semi-natural habitat (as well as the most exposed of all between 2021–2040 and 2061–2080). **Ahead of National Meadows Day (1 July 2023) Plantlife is highlighting the value and vulnerability of all grasslands;** other research has shown that a staggering 97% of wildflower meadows and 80% of chalk grasslands have been eradicated since the 1930s, and now cover less than 1% of UK land. Of the remaining 3%, 75% exist in small fragments making them especially vulnerable.

The paper shows that climate changes are affecting the UK unevenly: "regionally, it falls more in southern, central and eastern England; locally, it is greater at higher-elevation locations than nearby areas at lower elevations." In a worst-case scenario for greenhouse gas emissions, much of England could experience Mediterranean-type climatic conditions – with hotter, drier summers – by 2061-2080 (1). Warming temperatures have seen some wild plant species such as Lizard orchid (*Himantoglossum hircinum*), Bee orchid (*Ophrys apifera*) and Pyramidal orchid (*Anacamptis pyramidalis*) expand northwards in their range. Some rare arctic-alpine plants including Norwegian Mugwort (*Artemisia norvegica*), Diapensia (*Diapensia lapponica*), and Mountain Sandwort (*Sabulina rubella*) are at risk of going extinct in Britain as uplands become more temperate.

Dr Oliver Wilson, Report Author, University of York and Plantlife, noted:

"In the face of climate change, many plant populations will need to move to survive, but that is made difficult by human activity such as building pressures. Intact habitats and wildlife corridors - from

hedgerows to road verges - offer lifelines to climate migrant species so they must be effectively managed."

Habitat surveillance programmes are crucial for understanding how our habitats and species are responding to their changing conditions. The study examined four of the UK's world-leading ecological monitoring schemes – the rolling Countryside Survey, the National Plant Monitoring Scheme (NPMS) (2), the Long-Term Monitoring Network, and the Environmental Change Network – and found that each made important contributions to our understanding. The authors suggest that further improvements to our monitoring capacity could come from specifically designing schemes to track the impacts of climate change on the natural environment.

Dr Rachel Murphy, NPMS Volunteer Manager, Plantlife, said:

"These findings underline how crucial the efforts of volunteers are in taking the pulse of what is happening on the ground to wild plants. The abundance and diversity of plant life in habitats exposed to climate change and only through continued monitoring will we be able to mitigate and meet the challenges head on."

NPMS, funded by the UK Joint Nature Conservation Committee (JNCC), was designed and developed by the [BSBI](#), [UKCEH](#), [Plantlife](#) and [JNCC](#).

Dr Oliver Pescott, Report Author, UK Centre for Ecology & Hydrology, commented:

"Climate change will be one of the biggest drivers of ecological change over the coming decades. Sites that are regularly monitored through schemes like the NPMS give us crucial data on the UK's changing habitats, and this study's findings are invaluable for helping us understand how they relate to changes in the wider environment nationwide."

To mitigate the impacts of climate change, the report authors highlight the importance – and challenges – of using protected areas in highly climate-exposed habitats. They note that, although species' shifting ranges will pose difficulties for static park boundaries, these areas *"often shelter relatively intact landscapes and may be better placed to implement management interventions which mitigate the impacts of changing conditions."*

Read the paper here <https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-2664.14455>

Ends

Notes to editors:

- 1) *"The 2021–2040 period is likely to see significant parts of southern England experience dry summers (< 40 mm of rain in the driest summer month), and, under a pessimistic emissions scenario, much of southern, central and eastern England will average over 22°C in the hottest summer month. The resulting Csa (temperate with dry, hot summers) and Csb (temperate with dry, warm summers) climate types are respectively absent and very rare in the UK across the 20th Century; they are currently found in north-westernmost France (Csb), and the Mediterranean coast and Iberian Peninsula."*

2) *Launched in 2015, the NPMS is the biggest continuous plant monitoring scheme of its kind. In total, over 1000 volunteers have completed nearly 7000 plant surveys across different habitats in the UK. The incredible efforts of these volunteers have amassed over 206,000 individual records in that time, from over 4,500 plots nationwide, from Channel Isles to the Shetland Isles, from Northern Ireland to the East coast of England. The data collected from the survey describes the abundance and diversity of plants and helps us to understand the health of different habitats. The survey is funded by JNCC. <https://www.npms.org.uk/>*