



MEDIA RELEASE

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No 'one size fits all' solution to protecting conservation sites from pollutants

The Joint Nature Conservation Committee (JNCC) today published evidence showing local action is the most effective way to protect nature conservation sites from nitrogen pollution.

The findings come from its ['Nitrogen Futures'](#) project, which indicates while national measures have a role to play in reducing background pollution levels that can harm sensitive habitats, a "one size fits all" approach is not best way to combat the complex mix of UK pollution sources.

The project, funded by Defra, explored mitigation options for protecting habitats and species that are vulnerable to nitrogen pollution in the atmosphere.

The study found focusing mitigation efforts on the immediate surroundings of conservation sites close to nitrogen pollution sources produced the maximum benefit. By contrast, sites in more remote locations will benefit most from emission reductions across the UK and from abroad.

The project will provide each of the four nations with up-to-date evidence to design measures which further reduces the impact of air pollution onto sensitive habitats, to better protect the UK's biodiversity.

Nitrogen pollution is a major driver of biodiversity loss in the UK. In 2017 over 57% of the area of sensitive habitat in the UK had deposited pollution above thresholds where it is harmful to sensitive habitats (Trends Report 2020). There is increasing evidence that nitrogen pollution has driven local extinctions of sensitive plant species across the UK, reducing the richness of habitats and contributing to declines in populations of insects and other animals that depend on nitrogen sensitive species for food and habitat.

The Nitrogen Futures project is coordinated by JNCC in partnership with Defra, the UK Devolved Administrations and the Country Nature Conservation Bodies. It is being undertaken by a consortium led by Dr. Ulli Dragosits at UK Centre for Ecology & Hydrology (UKCEH) in collaboration with Rothamsted Research, Aether, Air Quality Consultants (AQC), Lancaster University and Manchester Metropolitan University.

To learn more about this project, the organisations contributing to it and how to get involved please contact [JNCC](#). For information about other JNCC work on air pollution visit our [Air Pollution webpages](#).

Environment Minister Rebecca Pow said:

“Projects like Nitrogen Futures will be critical in helping us find the best ways to not only meet our emission reduction targets, but also to most effectively support wildlife and the countryside.

“Air pollution overall has fallen in the UK since 2010, but more action is required both here and abroad to protect precious areas of natural beauty which have been damaged by decades of harmful emissions. Through sharing our knowledge and expertise with other countries, we can lead the way in tackling it.”

JNCC Chief Executive Marcus Yeo said:

“Nitrogen Futures is a ground-breaking project that will support policy development to decrease air pollution emissions and protect biodiversity. Air pollution has no boundaries, and we are delighted the UK countries are working together to tackle this important issue.”

“JNCC is pleased to be leading the Nitrogen Futures project, which will enhance JNCC’s advice and evidence concerning the impacts of air pollution on biodiversity. The project is an excellent example of collaboration across the UK, bringing together the Department for Environment, Food and Rural Affairs (Defra), the devolved administrations, the country nature conservation bodies and research organisations”.

Professor Alan Jenkins, Science Director at the UK Centre for Ecology & Hydrology (UKCEH), said:

“Our research into mitigating the environmental impacts of atmospheric nitrogen pollution, such as this latest study, includes finding solutions to biodiversity loss. High-resolution modelling enables us to calculate current and future emissions from a wide range of sources across the country as well as the amount of nitrogen pollution in the air and deposited onto land. We can also test mitigation options to predict whether different measures would provide better protection for sensitive habitats and conservation sites.”

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Notes to Editors

- A variety of human activities such as fertiliser use, livestock rearing, road traffic emissions, waste processing, industry and power generation release nitrogen into the air, in the form of either ammonia (mainly from agriculture or waste management) or nitrogen oxides (mainly from combustion process). The different forms of nitrogen emissions are then dispersed and deposited on land, lakes and rivers, and the sea.
- Effects on ecosystems occur both through increased nitrogen concentrations in the air, and when the nitrogen compounds are deposited onto vegetation and soils leads to over-enrichment (eutrophication) and acidification.
- Once within a sensitive ecosystem, nitrogen pollution affects its ecological functions, mainly by allowing nitrogen-tolerant plants to out-compete key sensitive species. This results in negative impacts on the plants themselves or animals within the food web, including vegetation change, local extinction, increased sensitivity to frost, drought or diseases.
- The Joint Nature Conservation Committee (JNCC) is the public body that advises the UK Government and devolved governments on UK-wide and international nature conservation. JNCC has strong links with the devolved governments and the country

nature conservation bodies (CNCB) through its statutory remit and plays an important role in nature conservation at a UK scale, by co-ordinating nature conservation action at a UK level; working in partnerships to provide common approaches, shared solutions and best practice; and providing a cost-effective and robust environmental evidence base across the UK.

- Defra, (Department for Environment, Food and Rural Affairs) is the government department responsible for environmental protection, food production and standards, agriculture, fisheries and rural communities in the United Kingdom of Great Britain and Northern Ireland.
- The UK Centre for Ecology & Hydrology (UKCEH) is a centre for excellence in environmental science across water, land and air. Our 500 scientists work to understand the environment, how it sustains life and the human impact on it – so that together, people and nature can prosper. We have a long history of investigating, monitoring and modelling environmental change, and our science makes a positive difference in the world. www.ceh.ac.uk @UK_CEH.
- For a general overview of atmospheric nitrogen and effects on ecosystems the following reports might be helpful “[We need to talk about nitrogen](#)” and “[The impact of ammonia emissions from agriculture on biodiversity](#)”.



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