

Study shows fracking could threaten Britain's richest wildlife habitats

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Credit: University of Reading

The whole Areas of Great Britain earmarked for fracking may contain some of the country's richest wildlife sites, scientists have found in the biggest ever mapping study of UK biodiversity.

Analysis undertaken by the University of Reading, Centre for Ecology and Hydrology, Butterfly Conservation and British Trust for Ornithology shows that many areas opened up for potential [shale gas extraction](#) by the government in recent years are home to species that are crucial to the functioning of [ecosystems](#).

Analysis of records of 5,553 species, from groups such as [bees](#), birds and [butterflies](#), going back to 1970 has revealed 65% of the areas of Britain deemed suitable for fracking have above-average biodiversity.

Senior author Dr Tom Oliver from the University of Reading said: "Our results are an important step in assessing potential impacts of fracking on species and will help protect much-loved British wildlife that could be a risk such as wetland birds.

"The protected status of species such as the Great Crested Newt have been vital in protecting wildlife

from unregulated development, but our research shows trends in wider biodiversity can also readily be incorporated into environmental impact assessments.

"We have more than 45,000 species in the UK and many of them perform important services for humans, such as pollination, decomposition and control of pests. Our new method of analysing biological records collected by volunteers allows us, for the first time, to map this wider biodiversity."

Assessments based on endangered species - but others are under threat

Currently, records of protected species and habitats are used in environmental impact assessments before such decisions are made to conserve an area or open it to controversial uses such as fracking.

But this detailed species assessment is costly and can only be done on a local level, and often only after significant investment has been put into the development of a site, making reversal of a decision to proceed unlikely.

The new research provides a new and effective way of identifying important areas for biodiversity to help protect wildlife from the impacts of development, including fracking.

To conduct the study, first, the UK was split into 2,799 10kmx10km grid squares, before tens of millions of records, collected by the country's army of natural history recorders?, were analysed using an innovative method which allows for variation in the effort spent recording each 10km square.

Each location was grouped into one of 45 categories based on their unique conditions, including climate and geology. This allows meaningful comparisons to be made between locations featuring similar conditions to give a true

indication of which are highest quality for wildlife, based on the types of species' habitat present and the way they are managed.

How does your area rate?

Each grid square was then given a quality rating based on its relative biodiversity within its category. These ratings can be viewed on an interactive map created to illustrate the results of the study.

Records from the respective periods of 1970-1990 and 2000-2013 were analysed to determine if biodiversity had increased or decreased over time.

This revealed that many areas that had experienced a decrease in endangered [species](#) - potentially making them appear good areas for fracking according to current assessment methods - had actually seen an increase in their wider biodiversity, making them more important to the UK's wider ecosystem.

Lead author Dr Rob Dyer, previously working at the Centre for Ecology and Hydrology, paid tribute to the volunteers who collected the data used in the study. He said: "Currently there are no data-driven methods to conduct ecological impact assessments at large spatial scales for large infrastructure projects such as shale gas or new housing developments.

"Our new method offers a way to prioritise sites for their wildlife value. This may help to target more detailed environmental assessments for the location of infrastructure projects or for ecological restoration work."

The pressure to explore new fracking opportunities is growing in order to obtain cheap and secure energy supplies, and the government this month reversed a North Yorkshire County Council decision to deny permission to frack at an existing well in Ryedale, as well as overruling Lancashire County council decision prevent fracking at a site between Preston and Blackpool.

It is hoped that this new method of analysing biodiversity can be adopted in the early stages of identifying land suitable for large-scale

infrastructure projects such as fracking, or the designation of [areas](#) for the building of new towns.

More information: Robert James Dyer et al. Developing a biodiversity-based indicator for large-scale environmental assessment: a case study of proposed shale gas extraction sites in Britain, *Journal of Applied Ecology* (2016). [DOI: 10.1111/1365-2664.12784](#)

Provided by University of Reading

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