

# Lucky heather earns its name in carbon study

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Researchers have found that heather has an important role to play in keeping carbon locked in the earth.

The findings, published online this week in leading journal *Ecology*, show that the type of plants growing on the surface of our peaty moorlands can change how quickly dead plant material is broken down, influencing the speed with which [carbon](#) from dead plant matter is released back into the air we breathe.

Heather was found to have a particularly helpful role in keeping carbon locked in as dead plant litter, and in reducing the numbers of worms below ground which would otherwise break down the plant material more quickly.

The Natural Environment Research Council (NERC)- funded research, took place at Moor House National Nature Reserve, high up in the North Pennines, a long-term, ecological monitoring site for the UK Environmental Change Network.

Using a series of mini open-topped green houses, researchers were able to raise the temperature by around 1°C, mimicking the predicted effects of global warming.

They then selectively removed different plant species such as heather, cotton grass and moss enabling them to study the effects of both warming and vegetation change on [carbon release](#) from the dead [plant material](#) into the atmosphere.

Dr Sue Ward, the Senior Research Associate for the project at Lancaster University, said: "Peat is one of the earth's most important stores of carbon, but one of the most vulnerable to changes in climate and changes in vegetation caused by both climate and land management. Our experiment enabled us to look carefully at how both warming and [vegetation change](#) above ground affected what was going on underground.

"We found the composition of the vegetation, and in particular the heather, had a greater effect on how fast [plant litter](#) decomposes than the 1°C warming.

"Decomposition rates increased when heather was removed from the plant community. This was associated with a change in the soil microbial community and an increase in the number of enchytraeid worms - these worms are the main soil fauna in peatlands that are responsible for decomposition.

"This study is further evidence that the diversity and makeup of the vegetation, and the soil organisms beneath our feet are vitally important in controlling how much carbon is locked up or released from these carbon rich ecosystems."

**More information:** Susan Elizabeth Ward, Kate Orwin, Nicholas J. Ostle, Maria Briones, Bruce C. Thomson, Robert I. Griffiths, Simon Oakley, Helen Quirk, and Richard D. Bardgett In press. Vegetation exerts a greater control on litter decomposition than climate warming in peatlands. *Ecology*. [dx.doi.org/10.1890/14-0292.1](https://doi.org/10.1890/14-0292.1)

Provided by Lancaster University

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