

Moving on : Climate change and a northward migration

As the global climate warms up, many animals are already moving northwards to cooler areas. In the UK, we are likely to see the arrival of more animals and plants that currently live in Southern Europe, like the beautiful Little Egret. But this could be bad news for animals like Harry Potter's Snowy Owl that are already living as far north as they can go.



Phillip Tomkinson

How do scientists forecast what's going to happen?

First, we need to find out where animals and plants live now...

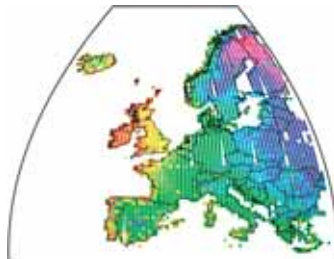
If animals and plants currently live in areas where it is warm and dry, we expect that they will always like to live in warm and dry areas. The first thing to do is find out where animals and plants currently live.



Real distribution of Red Grouse

...then, find out what the climate is like there...

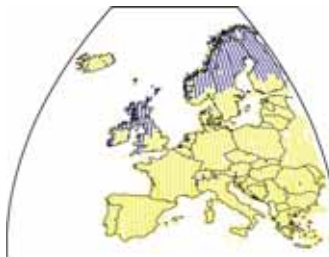
Climatic factors that are important to the survival of plants and animals include the temperature of the coldest month – when animals and plants are most likely to be killed by cold or frosty weather – or the length of the growing season, so a plant enjoys a long enough summer to grow, flower and set seed in just one season.



Seasonality

...then match the two up and identify the climatic limits for each species...

This can be done most accurately using computer modelling and shows in which areas plants and animals can successfully live and reproduce.



Modelled distribution of Red Grouse

Finally, use climate predictions to discover where these areas are likely to be in the future

We can now predict how climate change may affect each animal or plant. Some plants or animals may spread to live into a bigger area, some may be forced to live in a smaller area and some may need to move to completely new areas in order to survive.



Future distribution of Red Grouse

How reliable is this method?

Unfortunately, recent work at the Macaulay Land Use Research Institute has shown that many of these predictions may be little better than guesses and we may not be able to identify how plants and animals will react or adapt to changes in the global climate. The good news is that for some species their future survival might not be as unlikely as initial results suggested!