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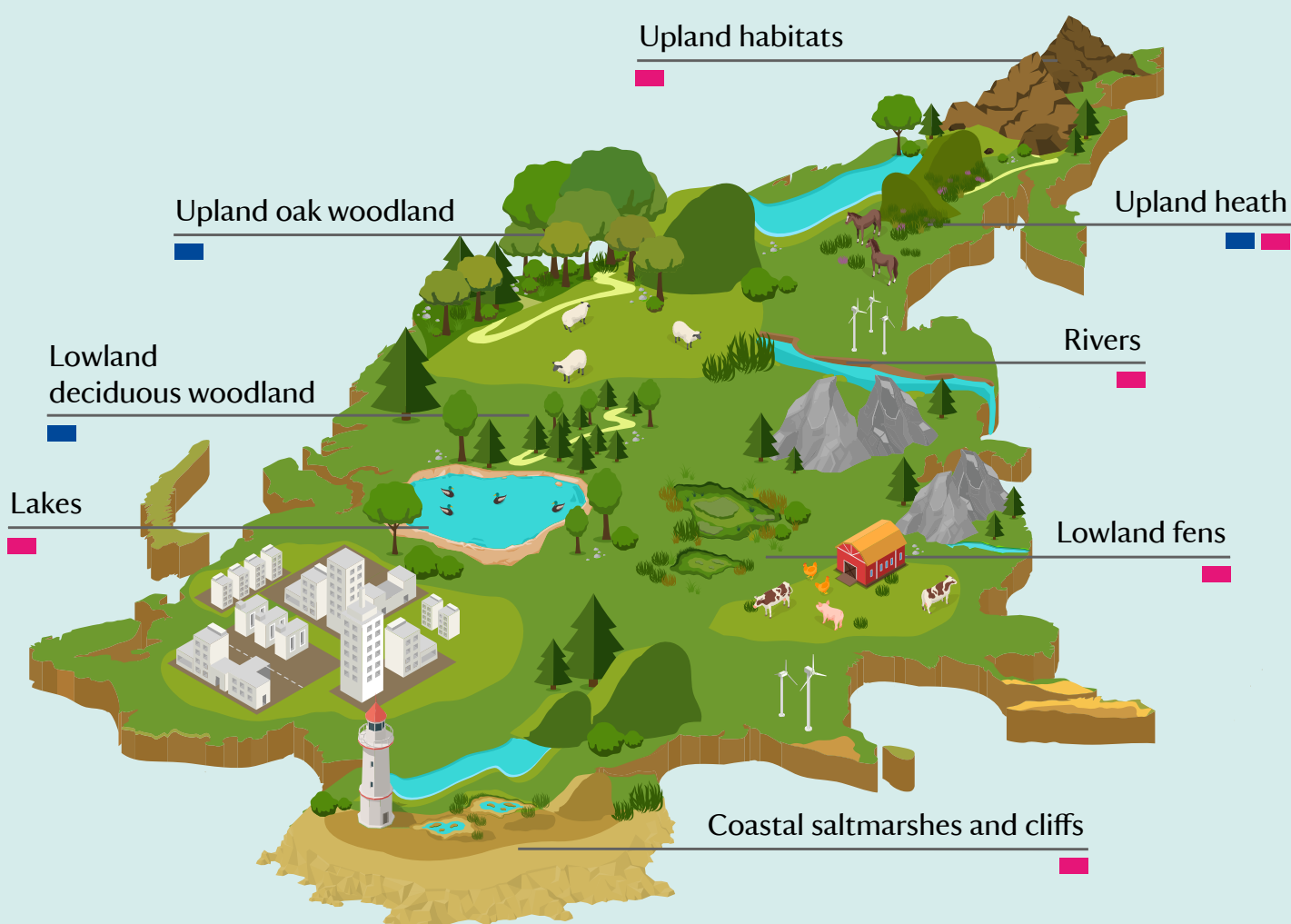
# Custodians of Carbon

**This new research, carried out for the National Trust by 3Keel, shows how vulnerable our land for nature is to the impacts of climate change.**

At the same time, it also shows how important this land is in storing carbon year on year thereby helping to tackle climate change.

## Key


- Our habitats that are most at risk from climate change
- Our habitats that store the most carbon on the land we look after



# Net zero through nature

**Climate change is the greatest long-term threat to our places. Hundreds of historic buildings and the land we look after for nature and people are at risk.**

Nature has a key role to play in helping us to limit global temperature rises to 1.5C, the globally agreed safe level.

 **2017 evidence** suggests that to have a **66%** chance of holding temperature rises to 2C,

**37% of all emissions cuts** globally need to come from nature. 

## Natural climate solutions can play three important roles:

- 1** Helping to store the greenhouse gases already in the atmosphere
- 2** Helping to offset the emissions from sectors of the economy which can't cut their emissions in any other way
- 3** Helping to buffer against the impacts of climate change

**Trees and rivers** provided

**£248 million**

of cooling benefits in 2017 (according to data from the Office for National Statistics).



But nature is also put at risk from climate change, with many sensitive habitats and species vulnerable to its impacts. Natural England has identified a variety of threats that climate change poses to some of the most sensitive habitats and species<sup>1</sup>. These include extreme weather events, like droughts, and changes in the timings of key events in nature, such as migrating birds starting to return too early for the food sources they normally rely on. 

The National Trust looks after 1.5% of all land in the UK, as well as 5% of the most nature-rich habitats in England and Wales, and we've committed to do what we can to help the UK reach net zero carbon emissions through managing our land for nature. Healthy habitats do a better job at storing carbon and we continue to have big ambitions to help nature and wildlife, including restoring 25,000 hectares of habitat by 2025.

This research explores how the National Trust can be custodians of carbon through our land for nature and how we can protect nature against the impacts of climate change.

## Key findings:

The National Trust commissioned new research looking at how vulnerable our land for nature is to the impacts of climate change and at the quantities of carbon that this land locks away every year. The report found that:

### Half of our properties

have habitats that are sensitive to climate change.



**73%** of our priority habitat is sensitive to climate change.

**80%** of sensitive habitats are found at the coast.

Rivers, lakes, lowland fens, upland habitats like heathlands, and coastal saltmarshes, cliffs and slopes are the most sensitive habitats across our land.



The National Trust looks after more than

**5%** of all habitat types in England, Wales and Northern Ireland that are highly sensitive to climate change.



Our **101,000 hectares** of land for nature (priority habitat) stores

**290,000** tonnes of CO<sub>2</sub>e (CO<sub>2</sub>e) per year<sup>2</sup>.



**75%** of carbon stored is by three habitats:

upland Atlantic oak woodland; lowland deciduous woodland and upland heath.

<sup>1</sup> <http://publications.naturalengland.org.uk/file/4971636164919296>

<sup>2</sup> 3Keel used the Natural England methodology for calculating this. All assessments of the carbon sequestered by habitats contain some degree of uncertainty, but what this does demonstrate is that the opportunity is significant

# Putting pressure on nature

3Keel explored how sensitive the National Trust's land for nature is to the impacts of climate change at both 2C and 4C. These case studies illustrate some of the most sensitive habitats we look after and the impacts that climate change is already having.

## Putting pressure on nature case study:

### Coastal saltmarsh at Poole Harbour

Poole Harbour contains some of the most extensive intertidal habitats on the south coast of the UK, including saltmarsh.

At least nine separate saltmarsh vegetation communities have been identified, and the sites contain records for rare and specialist invertebrates such as the plant bug *Orthotylus rubidus* and the hairy shore bug *Saldula setulosa*. Poole harbour is internationally important for waders and overwintering wildfowl, providing important feeding grounds and high tide roosts.

Saltmarsh is already declining here. This is potentially due to increased nitrogen levels and associated algal mat formation within the harbour, as well as localised damage caused by sika deer. The research shows that climate change will only exacerbate this decline. Increased storm surges increase the risk of erosional loss of the already degraded *Spartina* communities while rising sea levels will reduce the area available for saltmarsh to colonise. Hard sea boundaries on the urban, eastern shore of the harbour increase the importance of both Studland and Middlebere, where soft boundaries and shallow inland topography will enable saltmarsh to migrate inland as sea level rises.



Redshank wading in the lagoon at Arnold's Marsh, Norfolk, ©National Trust Images/Rob Coleman

## Putting pressure on nature case study:

### Vulnerable ponds at Runnymede, Surrey

The meadows at Runnymede are home to Langham Pond, a Site of Special Scientific Interest which sits on an ancient braided channel of the River Thames. It sustains a number of unique habitats and if you visit the pond between May and September, you're likely to spot one of the thriving dragonfly and damselfly populations, including common darters, ruddy darters, emperors, and brown hawkers.

The research identified wetland habitats as highly sensitive to climate change impacts. Rangers at Runnymede are already having to adapt the way they manage land due to ongoing drought well after the summer is over. The upper pond area is often completely dry and remains so for several months. This fragile wetland habitat is therefore increasingly under threat. In response, our rangers are looking at alternative water sources that they can divert to the pond and looking at ways to contain water supplies over the winter – this is a process which could prove complicated and costly.





# Custodians of Carbon

The research also looked at how much CO<sub>2</sub>e (carbon dioxide and other greenhouse gases) is stored by all of our land for nature.



The analysis concludes that up to **290,000 tonnes** of CO<sub>2</sub>e is **stored every year** by our land for nature.

The majority of carbon is stored by 3 key habitats:



1 Upland heathland



2 Lowland deciduous woodland



3 Upland oak woodland

These case studies illustrate why these habitats are so important for storing CO<sub>2</sub>e.

## Custodians of carbon case study:

### Blakeney National Nature Reserve, Norfolk

Blakeney National Nature Reserve sits at the heart of the Norfolk Coast Area of Outstanding Natural Beauty with far-reaching, uninterrupted views. The four-mile long shingle spit of Blakeney Point offers protection for Blakeney Harbour and the surrounding saltmarshes as well as a perfect habitat for a vast array of wildlife. The reserve is an internationally important site for the summer breeding tern colony and the winter breeding grey seals which brings visitors from far and wide.

Like many parts of the coast it is extremely vulnerable to the impacts of climate change, including sea level rise.

### Saltmarsh habitats

are also good at storing carbon and helping to tackle climate change, locking away around **1,663 tonnes of CO<sub>2</sub>e every year**.



Blakeney Norfolk Coast: @National Trust Images/Ian Ward

## Custodians of carbon case study:

### Borrowdale, Cumbria

We look after 500 hectares of Atlantic oak woodland with the highest level of European protection in Borrowdale valley in the Lake District. This habitat is one of the most important places in Europe for rare species of mosses and lichens. Combined with the wider deciduous woodland it makes for stunning walks for visitors, particularly in the autumn.



Borrowdale, Cumbria @National Trust Images/John Malley

## Recommendations

**At the National Trust we are working hard to better understand how our land can contribute to the UK's net zero emissions target. We also want to explore what we can do on our farmed land.**

We will be continuing to create and restore more land for nature, through programmes such as Riverlands, which is investing £10 million into over 1000km of rivers, and through continual improvements at our places. But the National Trust can't do this alone.

### Atlantic oak woodland at Borrowdale

is one of the best places across the National Trust's estate for storing carbon dioxide, storing almost

**4,000 tonnes** of CO<sub>2</sub>e every year.



**Here are our six key recommendations for government to support our response to climate change through natural climate solutions.**

**1** Take immediate and common sense action (like banning burning of blanket bogs) that can cut emissions, restore nature and provide benefits to wildlife and people.

**2** Support further research to better understand how restoring nature can help to achieve the UK's net zero target.

**3** Make sure that new strategies for restoring habitats (such as those for tree-planting or peatland restoration) are designed to achieve net zero emissions.

**4** Ensure that natural climate solutions are delivered hand in hand with maximising emissions cuts in other sectors.

**5** Make sure that new policy frameworks and funding, including a new agricultural system, prioritise and reward measures that help nature and the climate.

**6** Create and support partnerships between the public, private and third sectors to work together on the ground.