Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

Craig Bennett, Chief Executive, The Wildlife Trusts

Cam Valley Forum, 24th March 2025

The Wildlife Trusts

throughout the UK

The Guardian
News provider of the year

Water companies in England face outrage over record sewage discharges

Call for environmental emergency to be declared after data reveals 105% rise in raw sewage discharges over past 12 months

How polluted is your local river and which regions are worst hit?

BBC NEWS

How much raw sewage is released into rivers and the sea, and what are the rules?

27 March

to the sea and rivers

LBC
LEADING BRITAIN'S CONVERSATION

Sewage scandal: pollution plaguing Britain's beaches and beauty spots as water firms told 'clean up your act'

18 August 2022, 15:36 | Updated: 18 August 2022, 16:20

Comedians go into battle to halt sewage dumping in Lakes

Daily Mail, Tuesday, May 30,

By Richard Marsden

TOP comedians turned serious yesterday and put themselves at the forefront of a campaign to end sewage pollution at one of Britain's biggest lakes.

Alan Partridge star Steve Coogan was at the rally at Windermere alongside Paul Whitehouse and Lee Mack.

Coogan blamed the local water firm for sewage discharge at the Lake District beauty spot. He said: 'United Utilities have just announced a windfall of £300million to shareholders. The £19million they [recently] pledged to improve infrastructure in Windermere is a paltry sum in comparison.

'It isn't just about Windermere. This lake is like the poster place for everywhere else it is happening in the country.' Whitehouse – known for his sketch shows alongside Harry Enfield – added: 'It is an extraordinary situation that the people who are supposed to be looking after our waterways... are actually the cause of the problem.'

Mack, star of BBC1's Not Going Out, also was joined by his 11-year-old daughter Millie at the protest, said

SUBSCRIBER ++BONUS++

Scan this QR code for Robert Hardman on the plight of Windermere

MAILPLUS.CO.UK

Polluted: Windermere goes green in the summer because of algae

apologies from the water industry were 'too little, too late'.

And 11-year-old local Freya Hodgson-Jones told the rally how she used to watch kingfishers and otters in the lake 'but none had turned up for months'. Zoologist Matt Staniek, founder of Save Windermere, which organised the event, said the

algae had filled Windermere's northern basin last year. The campaign group added that in 2022 there were 5,900 instances of untreated sewage being released into the lake's catchment area by United Utilities.

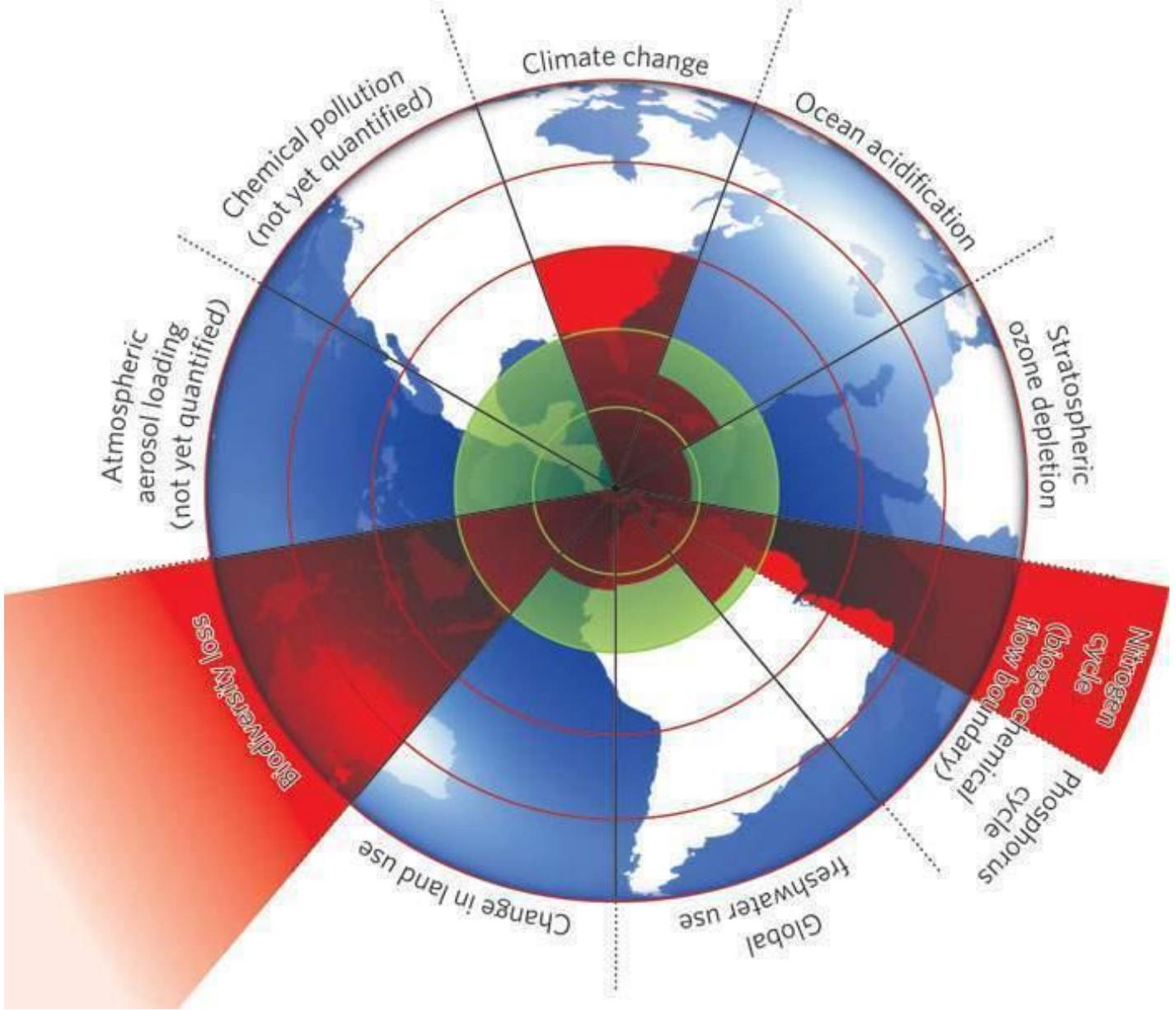
The firm said it has invested £45mil

Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

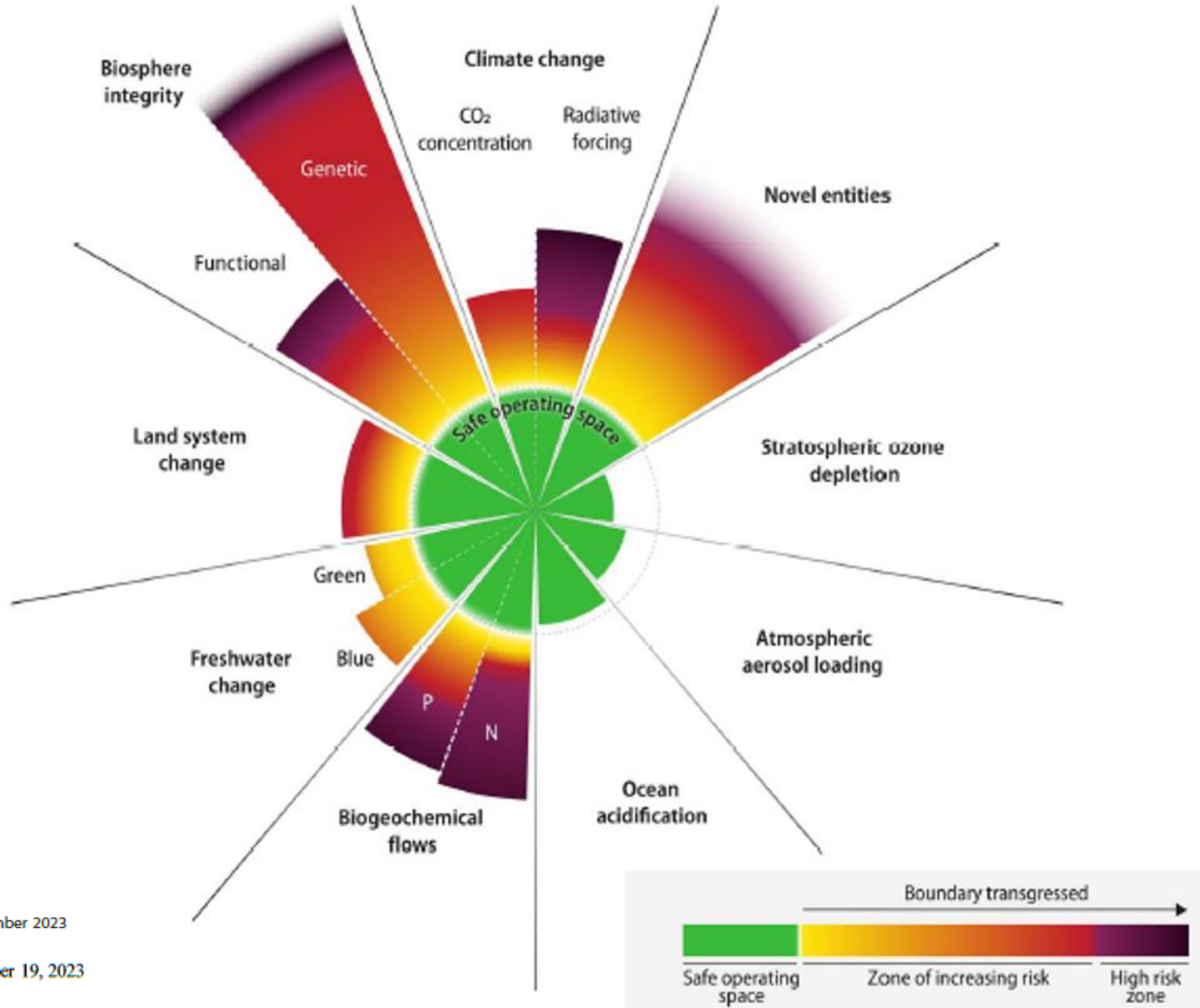
The Wildlife Trusts

Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

Earth



Rockstrom, J. *et. al.* (2009) "A safe operating space for humanity", *Nature 461, 472-475*



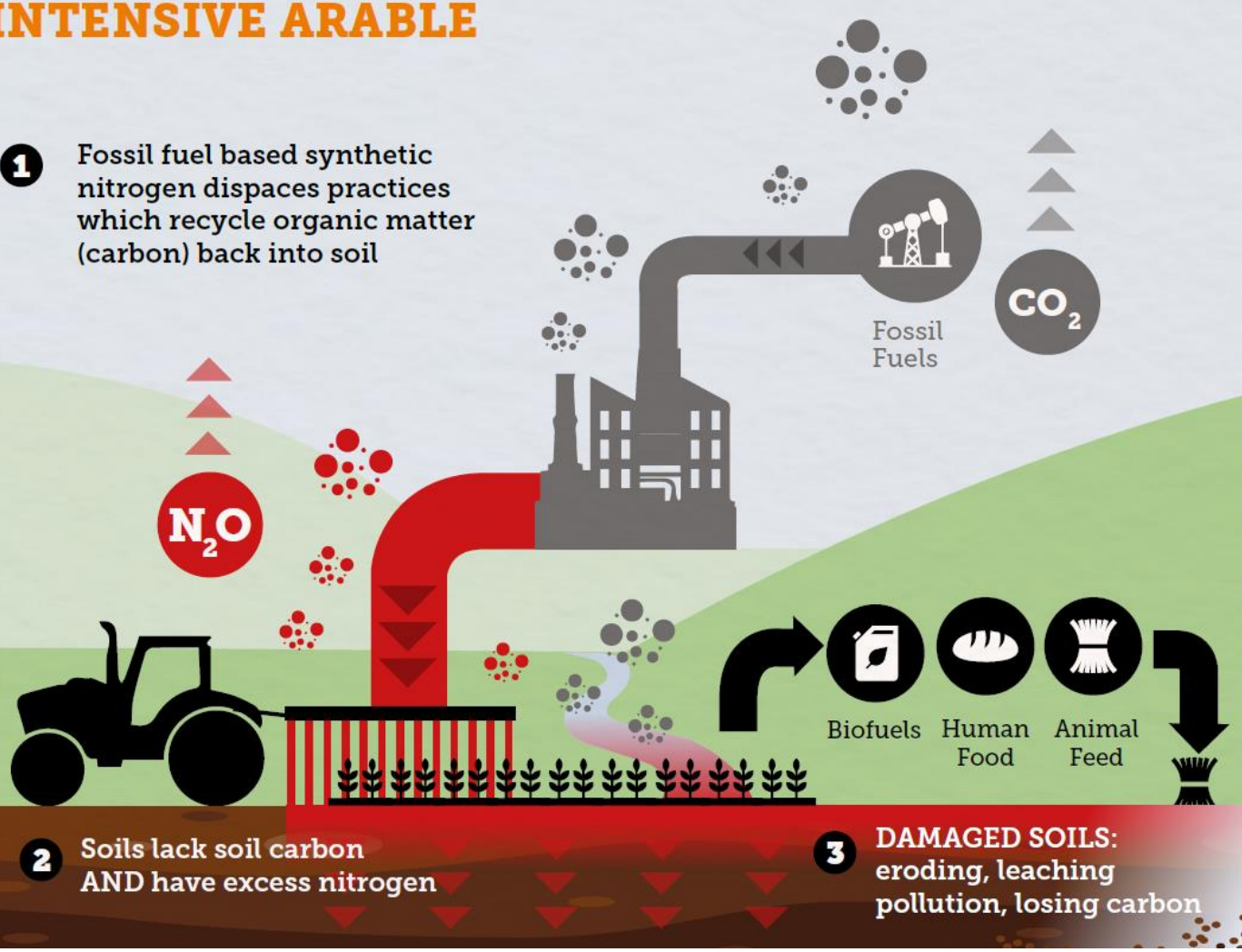
Some soil stats…

- UK soils contribute to 21% of total UK agricultural emissions
- Organic farms store around 3.5 tonnes more soil carbon per hectare
- Around 25% of our biodiversity lives in the soil
- A review of soil farm studies globally found that 16% had soils so damaged that their food producing capability spanned less than 100 years
- UK fenland soils are being lost at around 2cm per year…

SOIL CARBON AND NITROGEN CYCLES ARE DISRUPTED, AND SO ARE SOILS

INTENSIVE ARABLE

1 Fossil fuel based synthetic nitrogen dispaces practices which recycle organic matter (carbon) back into soil



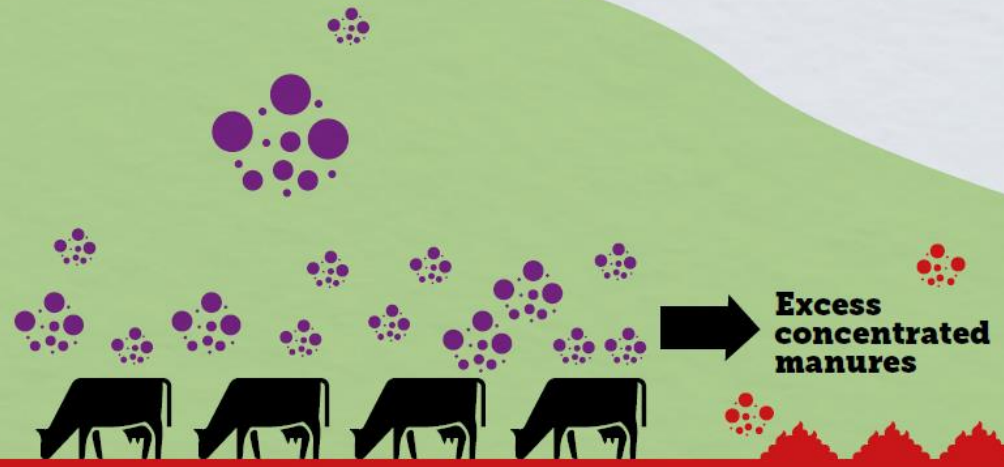
2 Soils lack soil carbon AND have excess nitrogen

3 DAMAGED SOILS: eroding, leaching pollution, losing carbon

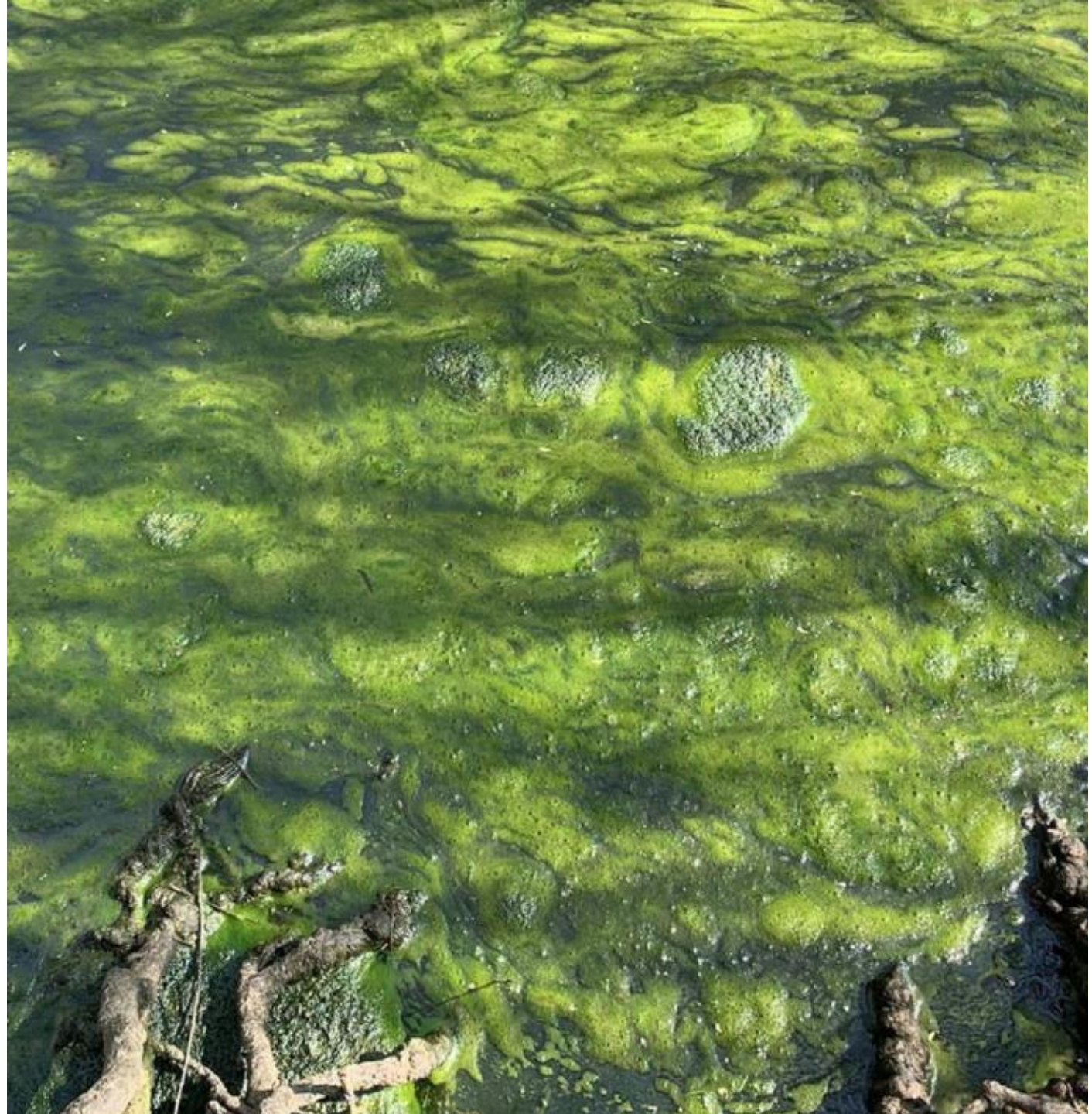
INTENSIVE LIVESTOCK

4 Crops grown on these degrading soils fed to intensively kept livestock often at distant locations

Intensive livestock → Large-scale meat and dairy production



5 These animals produce huge amounts of manure which is inefficient to recycle back into soils and worsens pollution further



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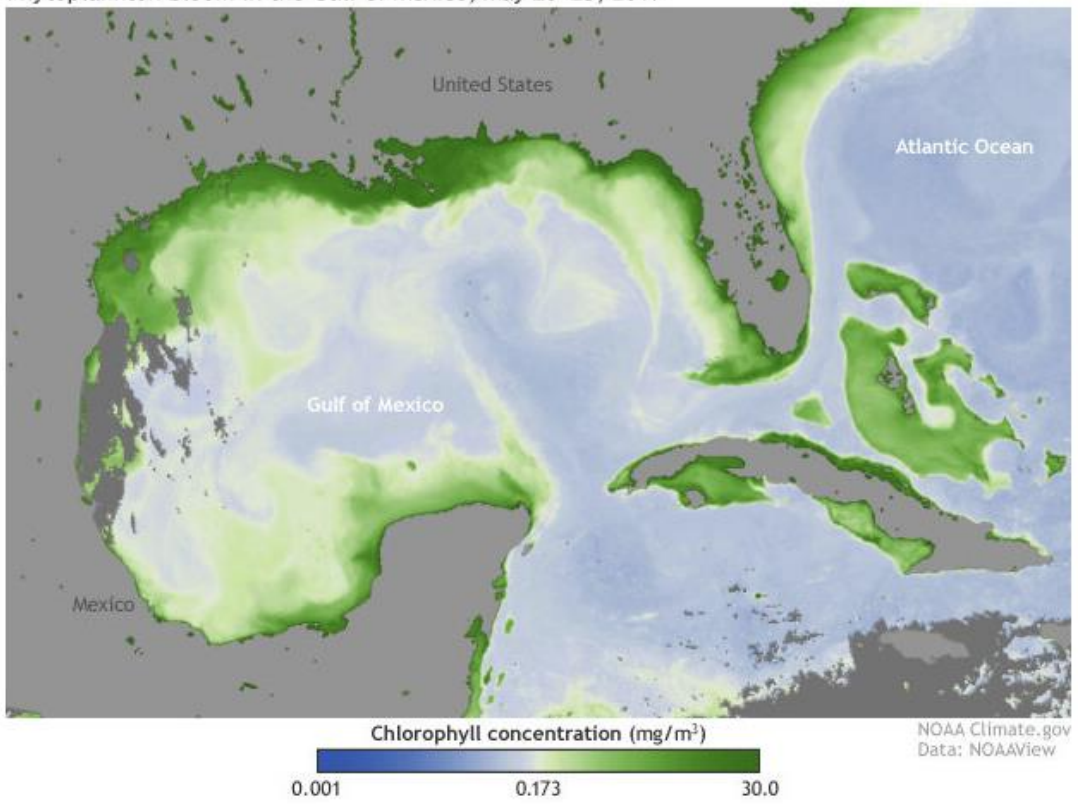
Wet spring linked to forecast for big Gulf of Mexico 'dead zone' this summer

BY REBECCA LINDSEY | REVIEWED BY DAVID SCHEURER
PUBLISHED JUNE 18, 2019

Phytoplankton bloom in the Gulf of Mexico, May 20–25, 2019



Satellite-based estimates of chlorophyll in the Gulf of Mexico from May 20–25, 2019. An overgrowth of and other plant-like microbes called phytoplankton eventually decay, which uses up oxygen. NOAA Climate.gov image, based on data from NOAA EVL.

MARCH 15, 2017

Growing algae bloom in Arabian Sea tied to climate change

by Sam Mcneil

The Guardian UK

Farmers on frontline as Dutch divided by war on nitrogen pollution

Government's buyout scheme is meeting fierce resistance from farmers in Netherlands

Wim Brouwer said that his cattle farm had been labelled a 'peak polluter' by the Dutch government. Photograph: Judith Jockel/The Guardian

Veal farmer Wim Brouwer sits on his terrace, an "emergency" red flag flying outside and his laptop open on a page revealing he is one of the Netherlands' peak polluters, due to the nitrogen excreted each year by his 1,360 calves.

His business sits in one of the most intensively farmed parts of Europe's most intensively farmed country, a huge exporter with more than 110 million livestock, including cattle, chickens and pigs.

Nitrogen compound emissions are a big matter in this small, packed country, becoming the dominant political issue over the course of a four-year crisis. Among other impacts, the crisis has hampered crucial housebuilding, because builders need nitrogen permits from a limited supply to cover construction emissions. The crisis has polarised social opinion, spurring the rise of a new rural populist movement and mobilising environmentalists who are desperately concerned about the state of wild habitats.

POLITICO

NEWS > AGRICULTURE AND FOOD

Dutch government ordered to cut nitrogen pollution — or face €10M fine

Greenpeace's victory means that PM Dick Schoof must achieve emission-reduction targets by 2030 or face the penalty.

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Greenpeace Netherlands celebrated the verdict but emphasized the need for immediate action. | Phil Nijhuis/EPA-EFE

FINANCIAL TIMES

UK to scrap rules protecting waterways to boost housebuilding

Developers argue EU-era regulation on 'nutrient neutrality' has prevented construction of tens of thousands of homes

Planning experts say the guidance aimed at limit pollution has exacerbated a chronic housing shortage in England © Jonathan Buckmaster/PA

Jim Pickard, Deputy Political Editor AUGUST 28 2023

392

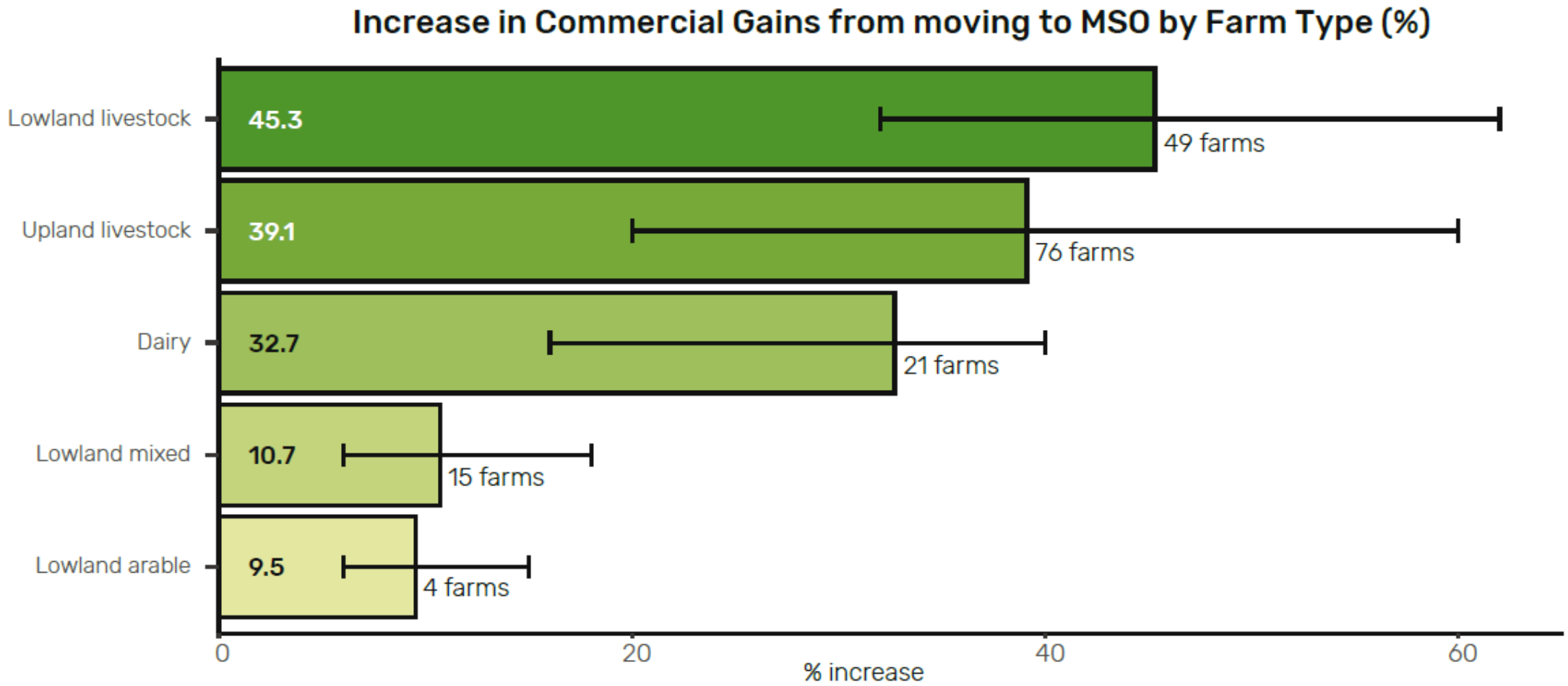
Chris Gomersall/2020VISION

Farming at
The Sweet Spot

How farming with nature can make you happier, healthier, and wealthier

Nature Friendly Farming Network

The Wildlife Trusts



Graph 1: Impacts of moving to MSO on outputs and commercial returns, based on the sample of farm accounts assessed (commercial returns is taken to mean revenues before support less variable and fixed costs). Source: Nethergill Associates

Example 1: Arable

A 750 ha arable farm on the North East Essex Coast on mostly clay soils, using diverse crop rotations, cover cropping and direct drilling to reduce inputs and improve biodiversity. Most of the land farmed is in Countryside stewardship and SFI.

"MSO gives me the ability to measure the financial and environmental sustainability of my farm business over time, to assess how nature farming practices benefit my profitability as I reduce my reliance on artificial fertiliser. It is the only method I have come across that includes the naturally available resources when looking at farm efficiency and as such provides an exciting new measurement for farmers to benchmark against"

"Our regenerative farming journey continues… every year shows us new challenges and more opportunities to learn, but farming with nature is rewarding in many different ways – not just financially!"

Example 2: Upland livestock

A 450 hectare farm in Wharfedale rising from 800 to nearly 2000 metres. It now runs 300 Swaledale ewes and 70 Belted Galloway breeding cows and followers to finish, down from over 1000 ewes previously.

"Our move to explore the merits of moving to MSO began 3 years ago by deciding to move towards a predominantly cattle grazing system."

"It is surprising how the grass yield and quality has improved over the whole farm in a short period, notably by the removal of Molinia (on the top ground) and the change in flora. The land is now more productive allowing livestock grazing units to increase over the holding. As a result, we are seeing an increase in profit from the livestock element of the business with reduced labour input, which has led to a better quality of life for me and the family. Although there were a few teething problems with cash flow, the profitability of the cattle enterprise is increasing year on year."

THE SEVEN WAYS TO SAVE OUR SOILS:

Restoring our damaged soils is key to solving our climate, nature and health crises. Together, these seven ways form a necessary whole farm approach to saving our soils. Progress on the ground remains slow, so policy makers need to better support and enable farmers.

1 MONITOR SOIL HEALTH ON FARMS

All farmers should know the state of their soils, and how they compare to farms of similar soil type.

2 INCREASE THE AMOUNT OF PLANT AND ANIMAL MATTER GOING BACK ONTO FIELDS

Farms should be building up or maintaining high levels of soil organic matter (relative to each soil type)

3 IMPROVE SOIL LIFE BY REDUCING TILLAGE AND CHEMICALS

Farmers should be enabled to plough less and drastically reduce agrichemical inputs.

4 COVER UP BARE SOIL WITH CONTINUOUS PLANT COVER

Soils should only be bare for short periods of time. You can't normally see healthy soil – it is covered by plants.

5 BRING MORE TREES ONTO FARMLAND

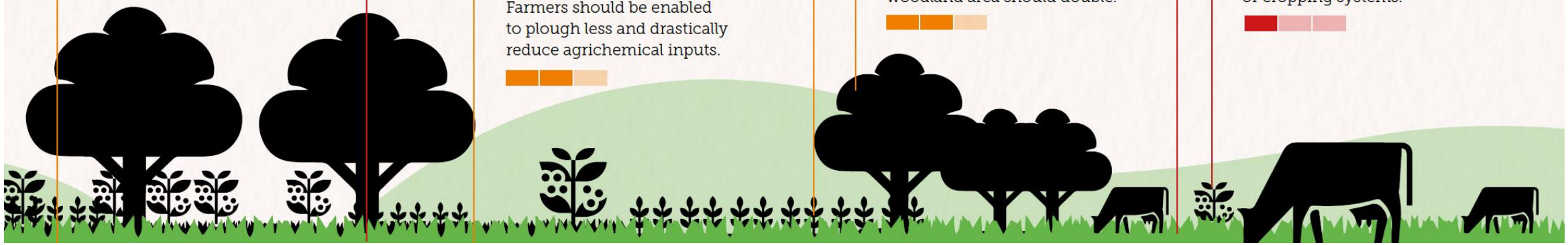
Farmers should be enabled to adopt agroforestry. UK farm woodland area should double.

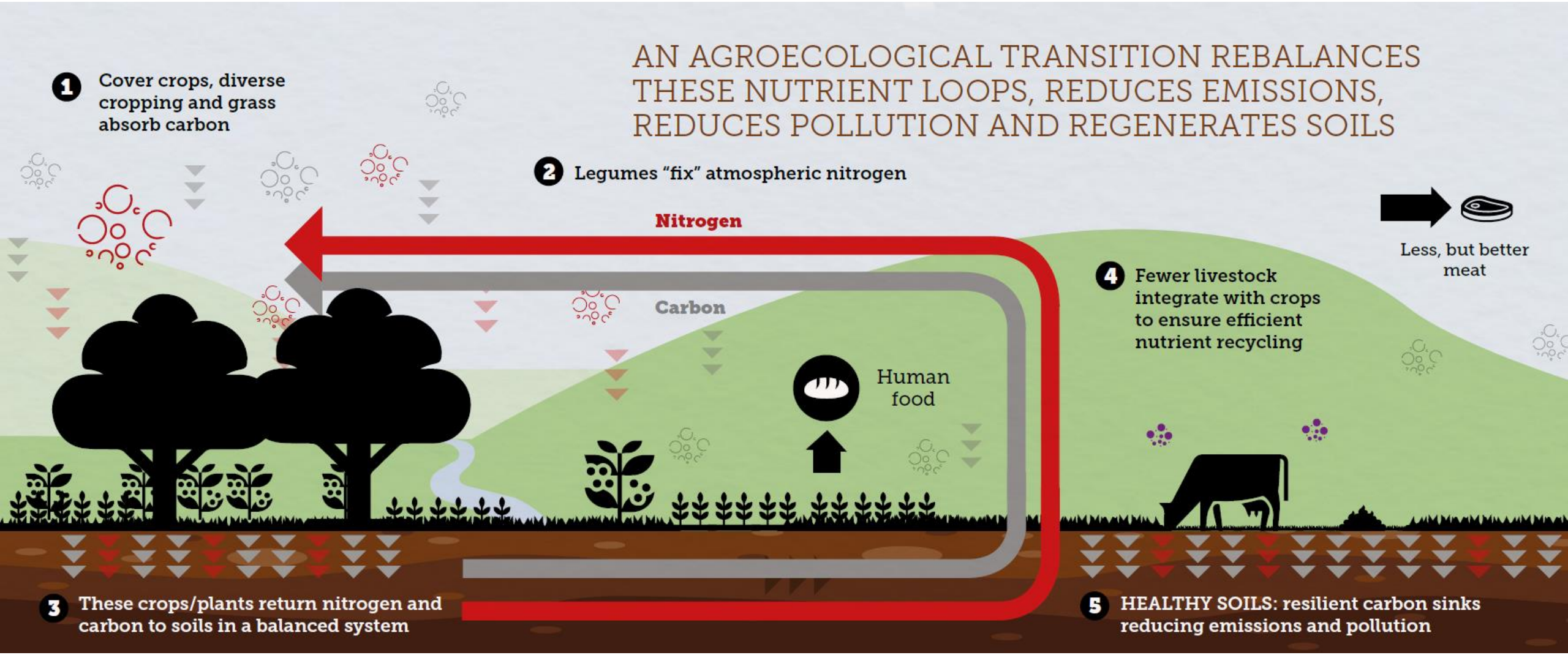
6 REDUCE SOIL COMPACTION FROM MACHINERY AND LIVESTOCK

Farmers should address compaction across all farm systems.

7 DESIGN CROP ROTATIONS TO IMPROVE SOIL HEALTH

Farmers should be enabled to have long, diverse rotations or cropping systems.




AN AGROECOLOGICAL TRANSITION REBALANCES THESE NUTRIENT LOOPS, REDUCES EMISSIONS, REDUCES POLLUTION AND REGENERATES SOILS
1 Cover crops, diverse cropping and grass absorb carbon
2 Legumes "fix" atmospheric nitrogen
Nitrogen
Carbon
Human food
Less, but better meat
4 Fewer livestock integrate with crops to ensure efficient nutrient recycling
3 These crops/plants return nitrogen and carbon to soils in a balanced system
5 HEALTHY SOILS: resilient carbon sinks reducing emissions and pollution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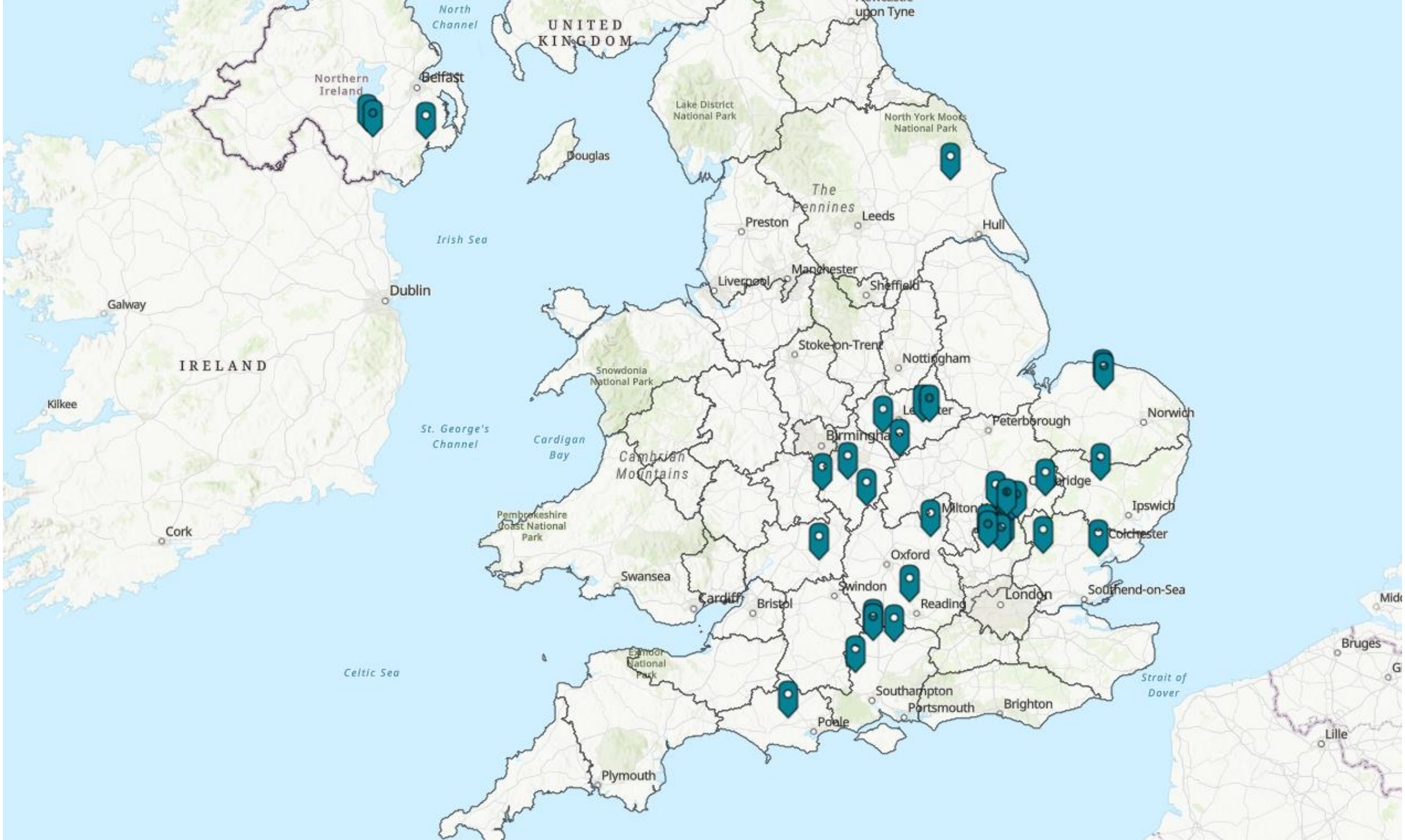
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Southampton
Portsmouth
Brighton
Poole
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Aerial Photograph
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Holme
East Coast Mainline Railway
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Church End
Woodwalton
Ramsey St Mary's
Ramsey Heights
Upwood
0
1
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LEGEND
Great Fen Project Area
Extents of Holme and Woodwalton Fen
Source: Getmapping Plc & Wildlife Trust

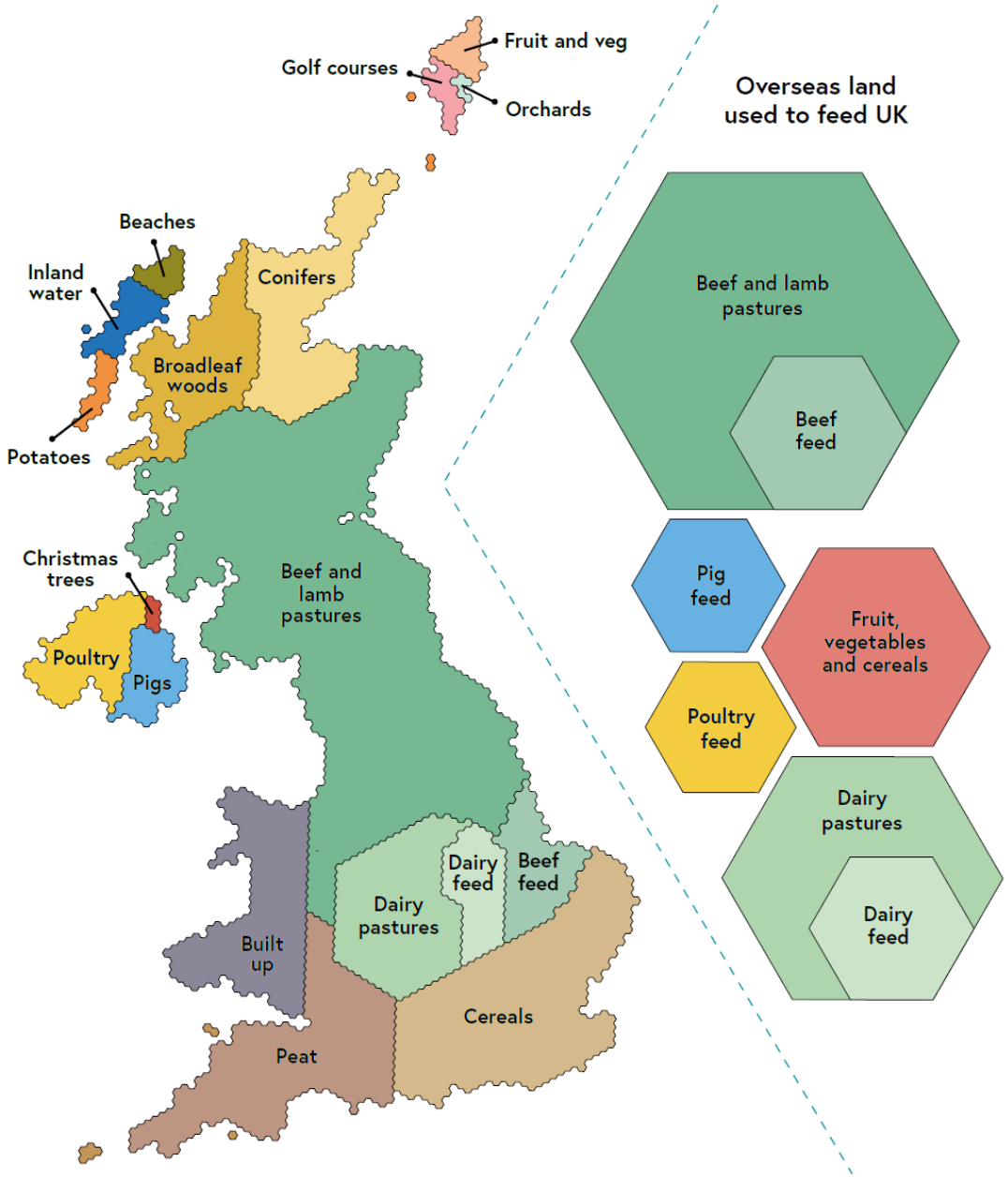
Henry Stanier, Wildlife Trust for Beds, Cambs & Northants

Henry Stanier, Wildlife Trust for Beds, Cambs & Northants


NO FARMERS NO FOOD
NO FARMERS NO FOOD
NO FARMERS NO FOOD
SAVE OUR FARMS
STARMER
SECURE MY FUTURE SECURE YOUR FOOD.
NO FARMS NO FOOD
NO FARMERS NO FOOD NO FUTURE
Support Our Farmers
NO REEVES!!
Save our
Let's Save Britain

Figure 9.3

We use our land for a great diversity of purposes, but rearing lamb, beef and dairy cattle predominates[12]



National Food Strategy
Independent review for HM Govt, July 2021

Better by Half Roadmap

Eating Better

Actions to move us towards producing and eating less and better meat and dairy, creating a food system that is fairer, healthier and more sustainable for people, animals and the planet.

Click the sectors below to find out more and navigate using the actions on each page.

Governments

- Deliver a cross-departmental food and farming strategy — UK government, Devolved nations
- Sustainable and healthy dietary guidelines underpin all policy development — UK government, Devolved nations
- Make sustainable diets the norm through public procurement — UK government, Devolved nations, Local authorities
- Every child has access to a hot, nutritious school meal — UK government, Devolved nations
- Develop and implement a strategy to facilitate a just transition for agriculture — UK government, Devolved nations
- Rebalance agricultural policy towards better meat, better dairy and better plants — UK government, Devolved nations
- Develop an integrated land-use plan — UK government, Devolved nations
- Local authorities improve access to fruit, vegetables and pulses — Local authorities
- Make vegetables and better meat and dairy affordable — UK government, Devolved nations, Local authorities
- Assess future trade deals for their impact on human health, animal welfare and the environment — UK government

Producers

- Harness opportunities for more plants produced for human consumption
- Switch to better meat and dairy production
- Work with nature to boost business resilience and profitability

Retail and manufacturers

- Label origin and method of production for all meat and dairy
- Encourage sales of plant foods
- Set targets for more plants in the basket and evaluate progress
- Embed a sustainable diets strategy across the business
- Develop a sourcing policy that delivers 'better' meat and dairy

Food service

- Put more plants on plates and menus
- Make plant dishes more appealing
- Set targets and evaluate progress towards less and better meat and dairy alongside more plants
- Provide exciting plant-based training and development for chefs
- Develop a sourcing policy that delivers 'better' meat and dairy

Financial institutions and investors

- Evaluate company risks and opportunities related to meat and dairy production and sales
- Engage to promote healthy and sustainable production

Better by Half Roadmap

Eating Better

Food service

- **Put more plants on plates and menus**
- Make plant dishes more appealing
- Set targets and evaluate progress towards less and better meat and dairy alongside more plants
- Provide exciting plant-based training and development for chefs
- Develop a sourcing policy that delivers 'better' meat and dairy

Put more plants on plates and menus

Food service providers such as restaurants and caterers should make vegetables, wholegrains, nuts, seeds, fruit and pulses the focus of the food offer.

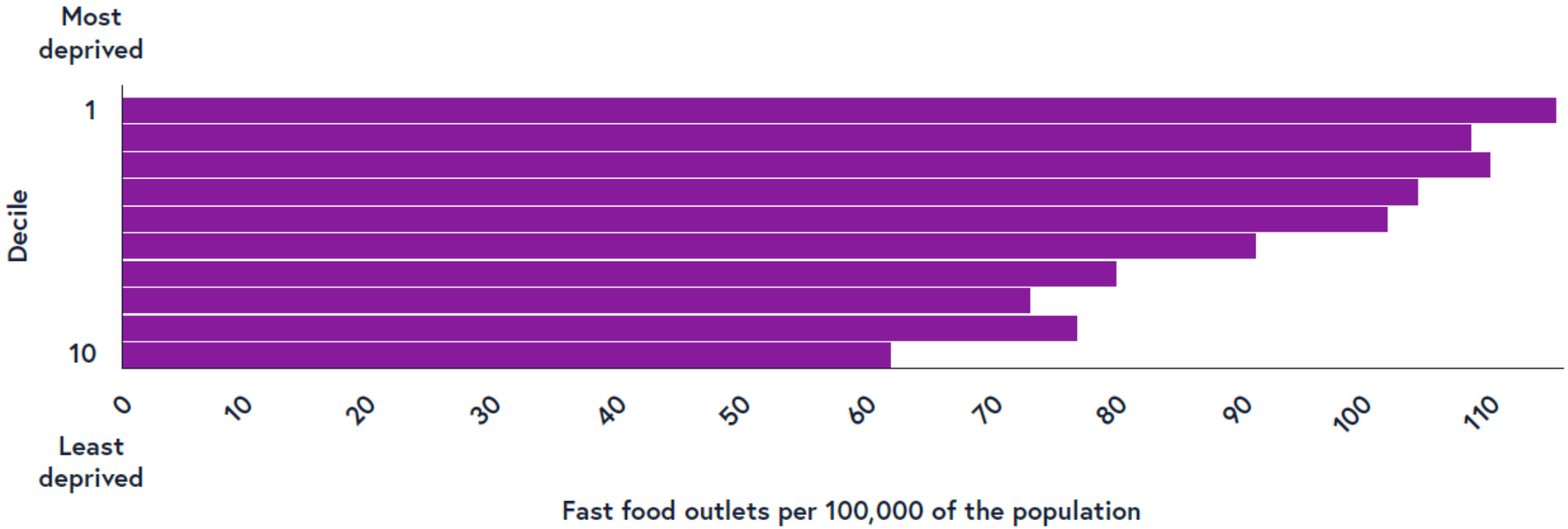
A dietary transition towards a future where we eat mostly plants is only feasible if there are enough tasty options available to buy. Plant-rich dishes, which contain predominantly plant foods, should make up the majority of the food service offer. The remaining meat and dairy on sale should be produced to 'better' standards.

Food service providers should rebalance the plate:

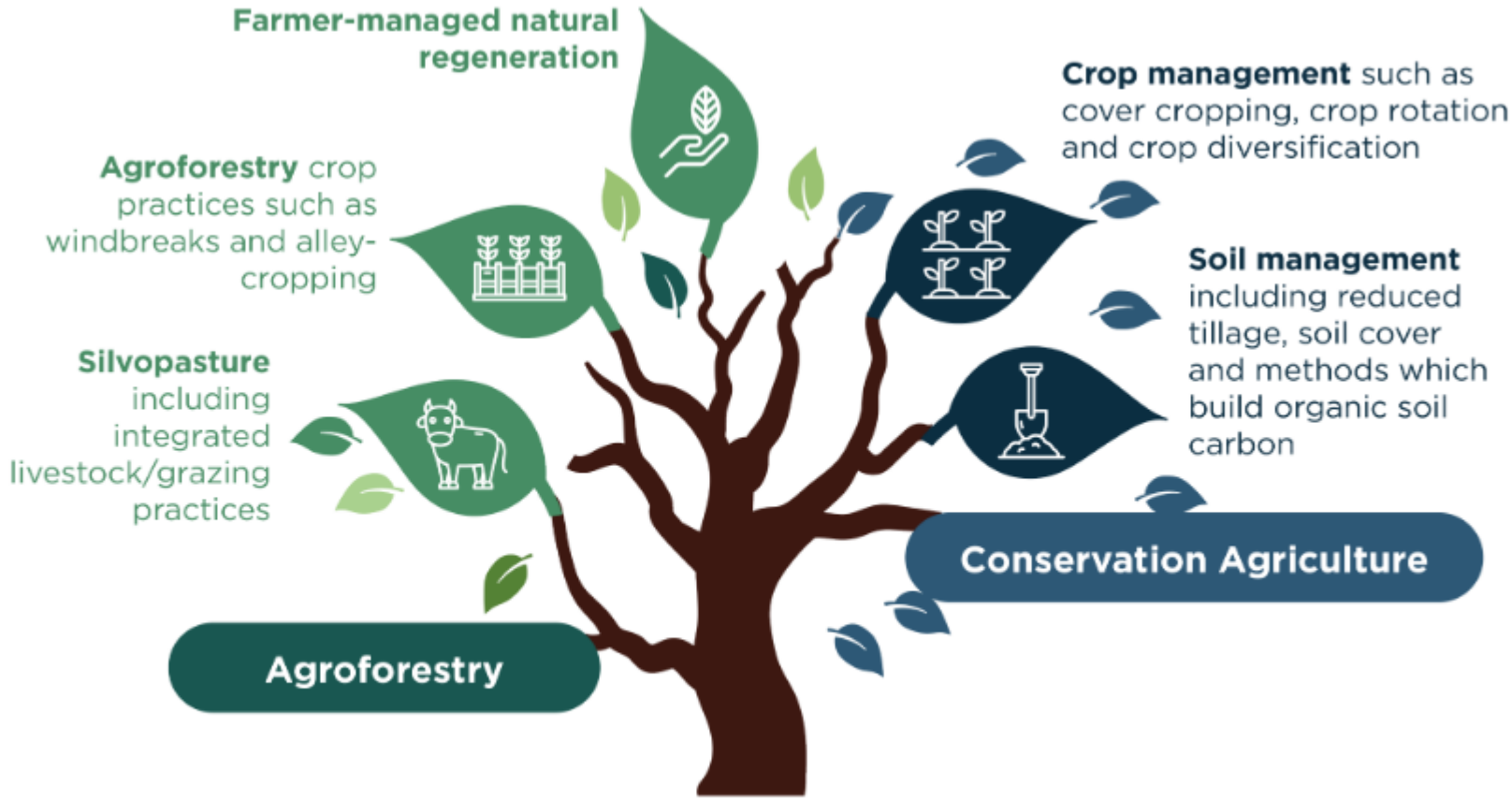
- Increase the proportion of plant-rich dishes on the menu - at least 50% of menu options should be meat and dairy-free.
- Make vegetables and plant proteins the star of more dishes.
- Introduce more wholegrains, legumes/ pulses, and vegetables to meat and dairy based dishes.
- Use delicious recipes across cultures - often traditional dishes - that are inherently lower in meat and dairy, such as small amounts of flavoursome meat in a stir fry or paella.
- When cooking with fish and seafood, ensure it is MSC certified.
- Consider offering optional smaller portions of "better" meat as an add-on or side to default plant-based mains. Make better use of livestock products by serving less-used cuts of meat.

Figure 5.6

The most deprived areas tend to have more fast food outlets[27]



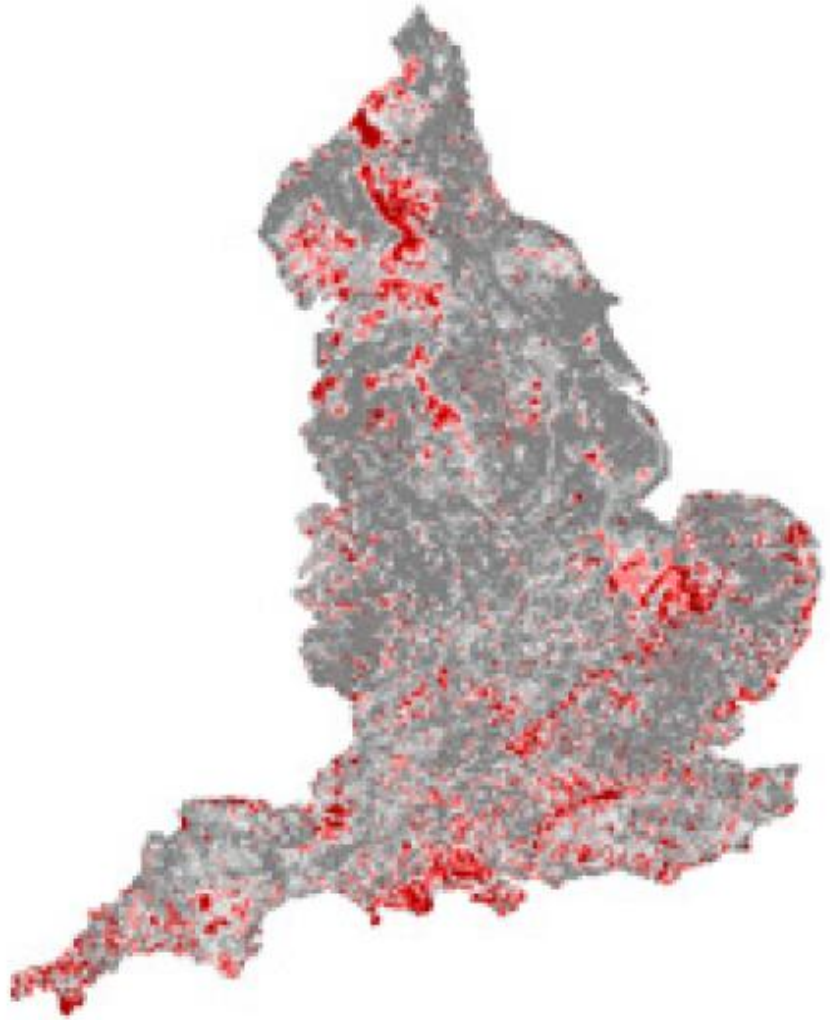
What is regenerative agriculture?



Regenerative agriculture focuses on improving soil health through methods including crop rotation and reduced ploughing. Image: IUCN

Figure 9.2

A significant area of land (red) is well suited simultaneously to sequester carbon and protect nature[11]



National Food Strategy
Independent review for HM Govt, July 2021

A food systems approach to

farming, nature, and health

A discussion paper

Nature Friendly Farming Network

The Wildlife Trusts

Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

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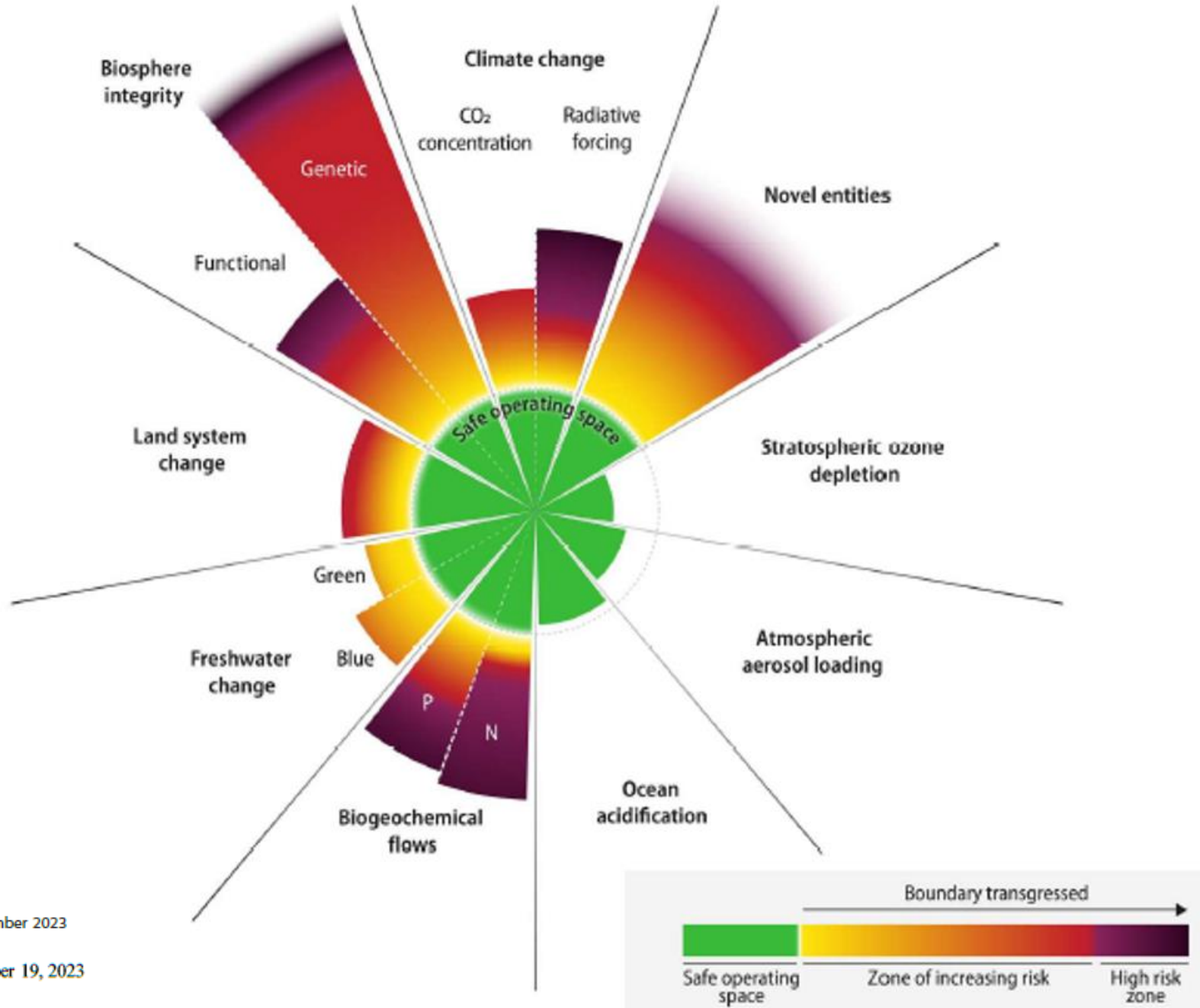
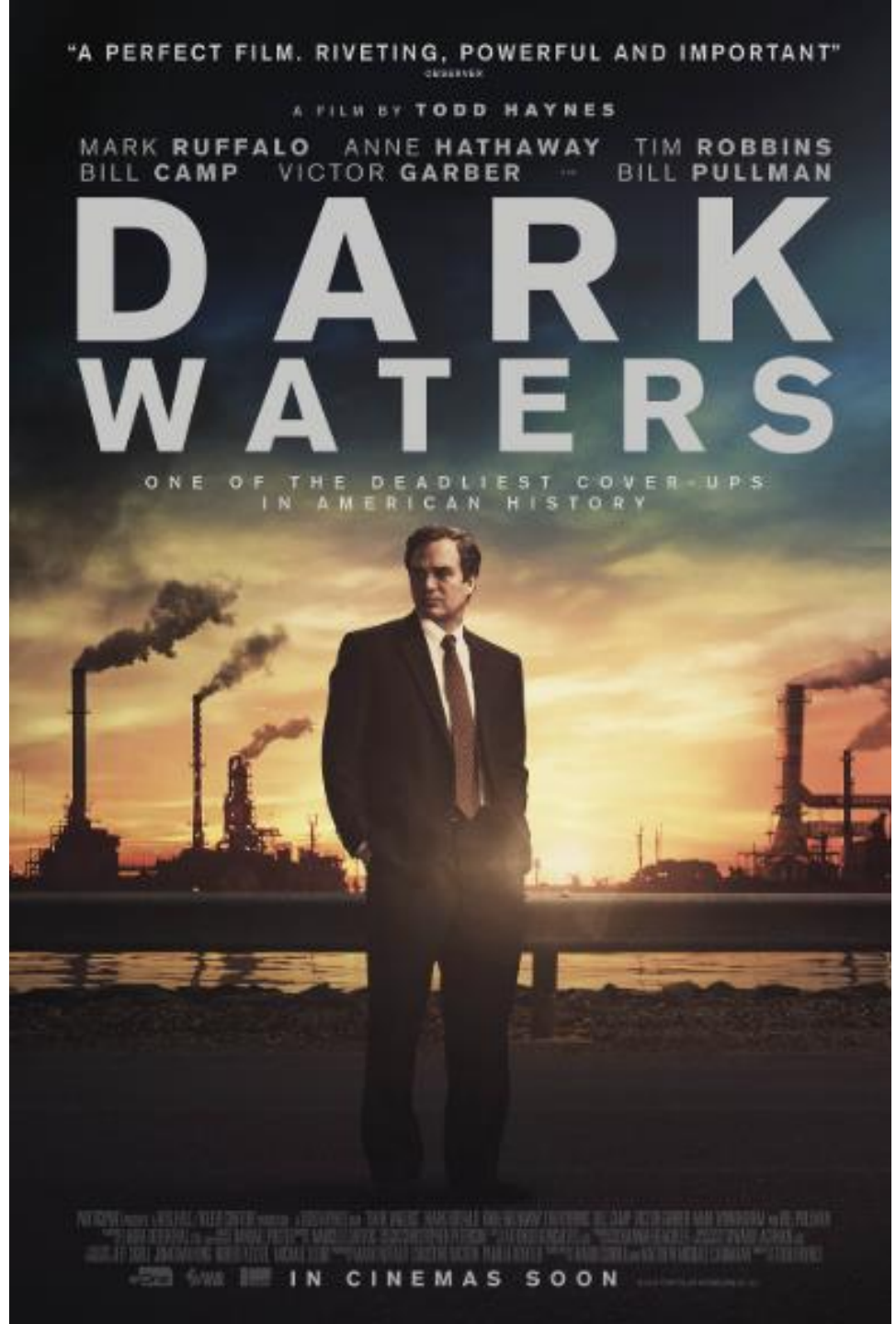
Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

Water

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A FILM BY TODD HAYNES
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ONE OF THE DEADLIEST COVER-UPS IN AMERICAN HISTORY
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The Guardian UK

PFAS

Otters among UK wildlife carrying toxic 'forever chemicals', analysis shows

Some wildlife species have accumulated many times more than safe amount of PFAS in their tissue and organs

- Revealed: drinking water sources in England polluted with forever chemicals
- Revealed: scale of 'forever chemical' pollution across UK and Europe

Rachel Salvidge *and* Leana Hosea

Fri 17 Jan 2025 13.00 GMT

Share

Some PFAS, known as forever chemicals because they do not degrade, have been linked to serious diseases in humans and animals, including cancers. Photograph: Our Wild Life Photography/Alamy

Dolphins, otters, porpoises, fish and birds across the UK have been found to have toxic "forever chemicals" in their tissue and organs, analysis of official data has revealed.

Manmade chemicals called PFAS, known as forever chemicals because they do not degrade, are used in a wide range of consumer products and industrial processes and some have been linked to serious diseases in humans and animals, including cancers. PFAS have been found widely to pollute water and soils and are thought to be in the blood of every human on the planet.

Watershed Investigations, the Marine Conservation Society and the Guardian obtained official data on more than 1,000 animals to reveal widespread contamination by a range of PFAS, particularly PFOS and PFOA, which have been studied the longest and found to be toxic, and are now banned

The Guardian UK

PFAS

Industry using 'tobacco playbook' to fend off 'forever chemicals' regulation

Industry-funded research and exaggerated claims litter arguments against stricter regulation

- Cost to clean up toxic PFAS pollution could top £1.6tn in UK and Europe

Rachel Salvidge *and* Leana Hosea

Tue 14 Jan 2025 05.00 GMT

Share

PFAS have been found in water and are likely to be in the blood of almost every human on the planet. Photograph: MediaNews Group/Orange County Register/Getty Images

Efforts to restrict the production of plastic "forever chemicals" that could threaten public health have been met with a large-scale coordinated attack by the multibillion pound industries that make and use them.

Industry-funded research and exaggerated claims litter the arguments made by the fluoropolymer industry against stricter regulation, a year-long investigation by the Forever Lobbying Project, a cross-border investigation involving 46 journalists and 18 experts across 16 countries can reveal.

Fluoropolymers are high performance plastics and a type of per- and polyfluoroalkyl substances (PFAS) - a group of more than 10,000 human-made chemicals that will not break down in the environment for tens of thousands of years, if ever, earning them the nickname "forever chemicals".

The substances are durable non-stick coatings used in an enormous range of industrial processes and consumer products. They have been in production for decades and pollution is so widespread that some have been found in water, soils and air across the world. They have been detected in fish, birds, otters, seals and whales - and are likely to be in the blood of almost every human on the planet.

WATERSHED

Watershed Pollution Map

The WATERSHED POLLUTION MAP brings together multiple layers of data from a wide range of sources to reveal the huge number of pressures on rivers, lakes, groundwater and seas.

...

Show more

Find

PFAS in birds (µg/kg)

368.54
94.65
3.35

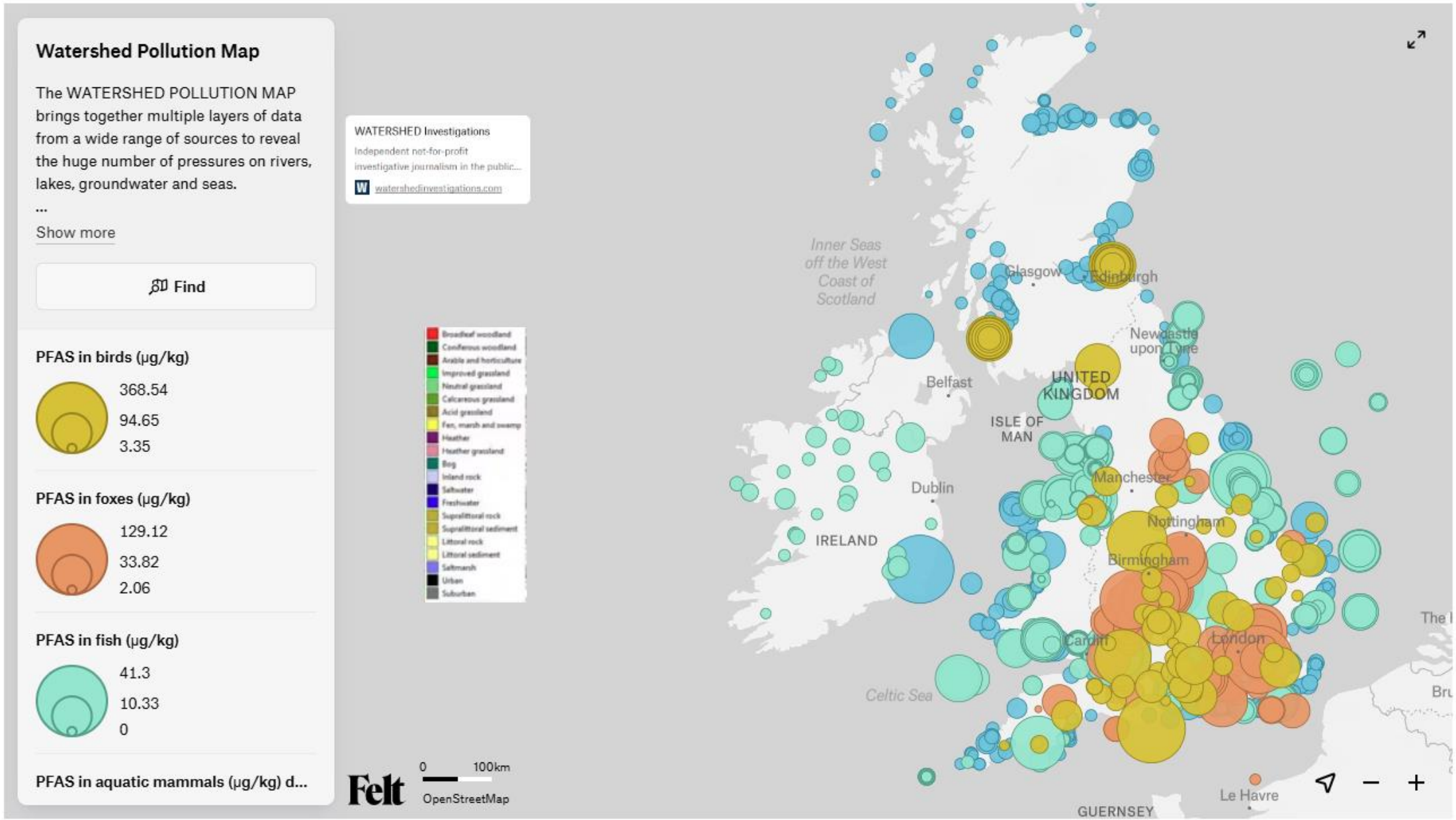
PFAS in foxes (µg/kg)

129.12
33.82
2.06

PFAS in fish (µg/kg)

41.3
10.33
0

PFAS in aquatic mammals (µg/kg) d...



i News

Why plastic pollution could be just as bad for our health as air pollution

Our rubbish ends up in the ocean – but we should be worried about the ways it gets into our own bodies

(Matthew Chauvin)

By Tom Bawden
Science & Environment Correspondent

FINANCIAL TIMES

Plastic ingestion by humans and animals altering cells, scientists say

Study identifies new stomach disease in seabirds caused by microplastics

Flesh-footed shearwaters on Australia's Lord Howe Island were found to have widespread scarring of the digestive tract © PA

Clive Cookson MARCH 3 2023

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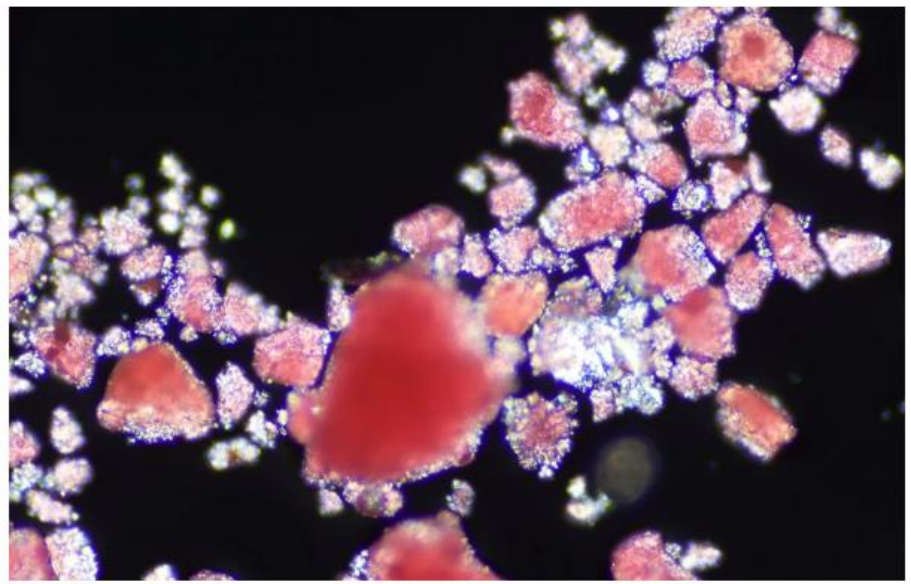
nature

NEWS | 23 January 2025

Microplastics block blood flow in the brain, mouse study reveals

Real-time imaging shows how plastic-stuffed cells form clumps that affect mouse movement.

By Smriti Mallapaty



Tiny pieces of plastic were found lodged in blood vessels in the brains of mice. Credit: Sinclair Stammers/SPL

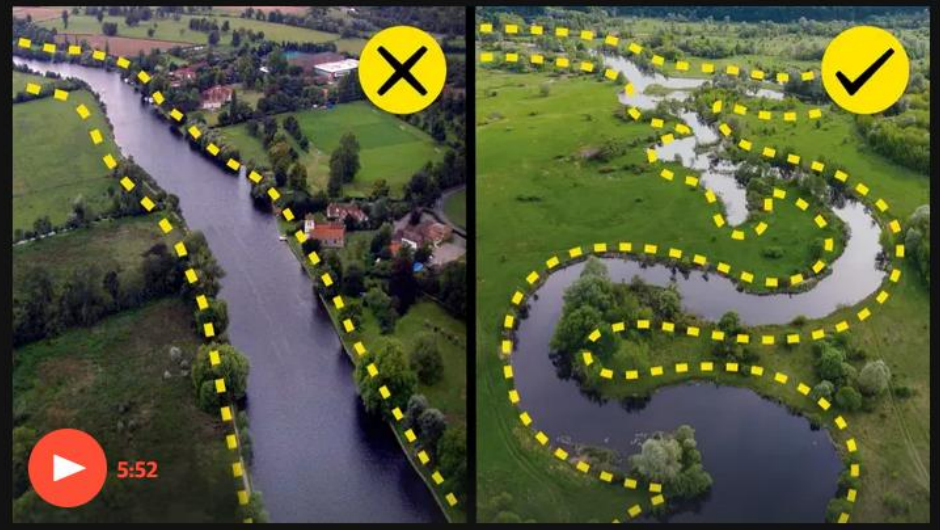
For the first time, scientists have tracked microplastics moving through the bodies of mice in real time[1]. The tiny plastic particles are gobbled up by immune cells, travel through the bloodstream and eventually become lodged in blood vessels in the brain. It's not clear whether such obstructions occur in people, say researchers, but they did seem to affect the mice's movement.

It's complicated
Rivers

Why rivers shouldn't look like this – video

Josh Toussaint-Strauss Ali Assaf Joseph Pierce *Nick Hildred* Ryan Baxter, *Source: The Guardian*

Thu 26 Jan 2023 09.33 GMT



The quintessential image of a river you might recognise from post cards and paintings – nice and straight with a tidy riverbank – is not actually how it is supposed to look. It's the result of centuries of industrial and agricultural development. And it's become a problem, exacerbating the impact of both extreme flooding and extreme drought. Josh Toussaint-Strauss looks into how so many rivers ended up this way, and how river restoration is helping to reestablish biodiversity and combat some of the effects of the climate crisis

'This is what a river should look like': Dutch rewilding project turns back the clock 500 years

'We make nature here': pioneering Dutch project repairs image after outcry over starving animals

Topics
Rivers / It's complicated

More from
It's complicated


How killer robots are changing modern warfare


Why rivers shouldn't look like this

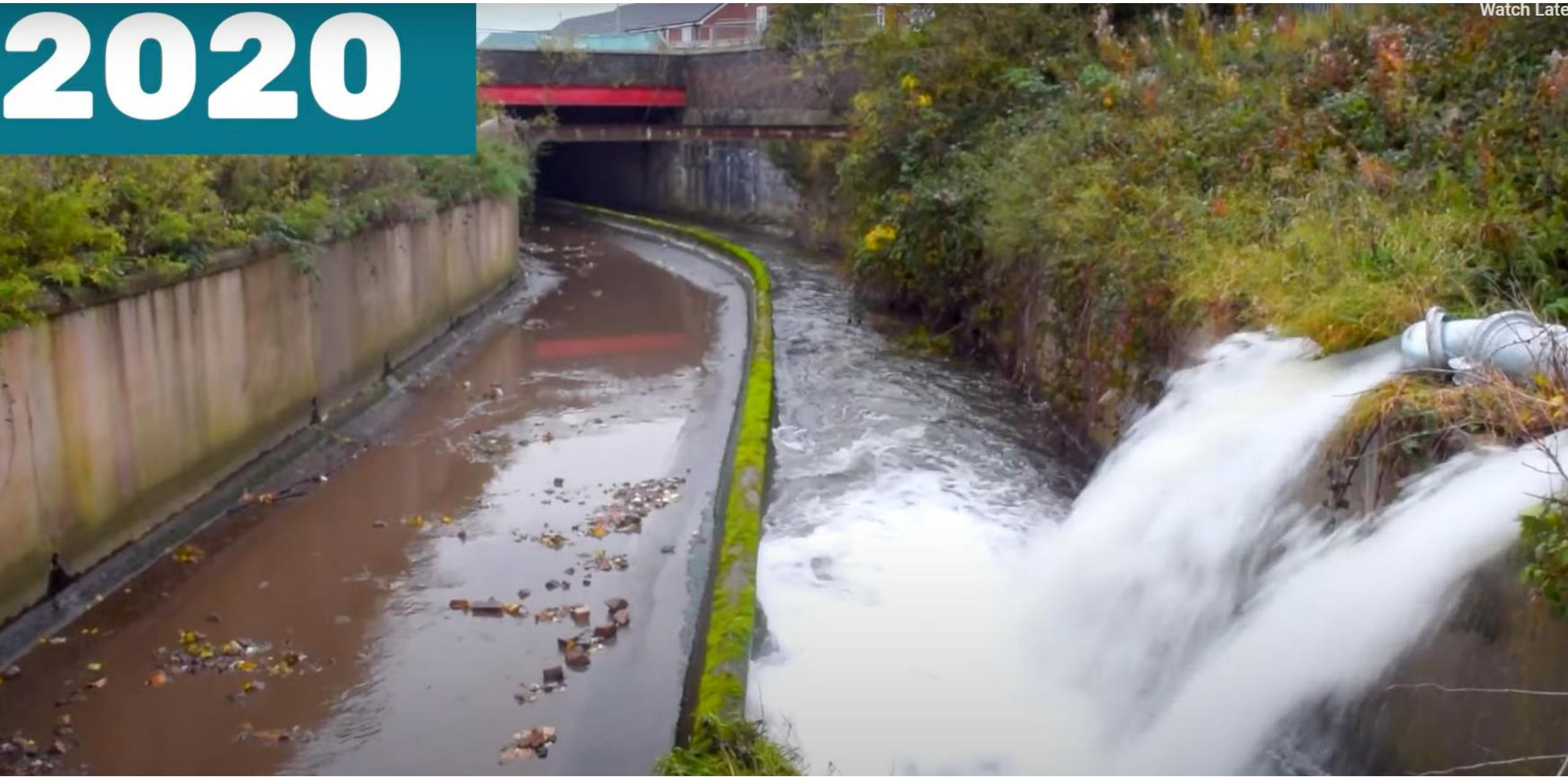
How the British crown has more power than you think


How gas is being rebranded as green


How Russia's strategy failed, not the tank


Why self-driving cars have stalled

Staffordshire Wildlife Trust


2020
Watch Late


Staffordshire Wildlife Trust


2021

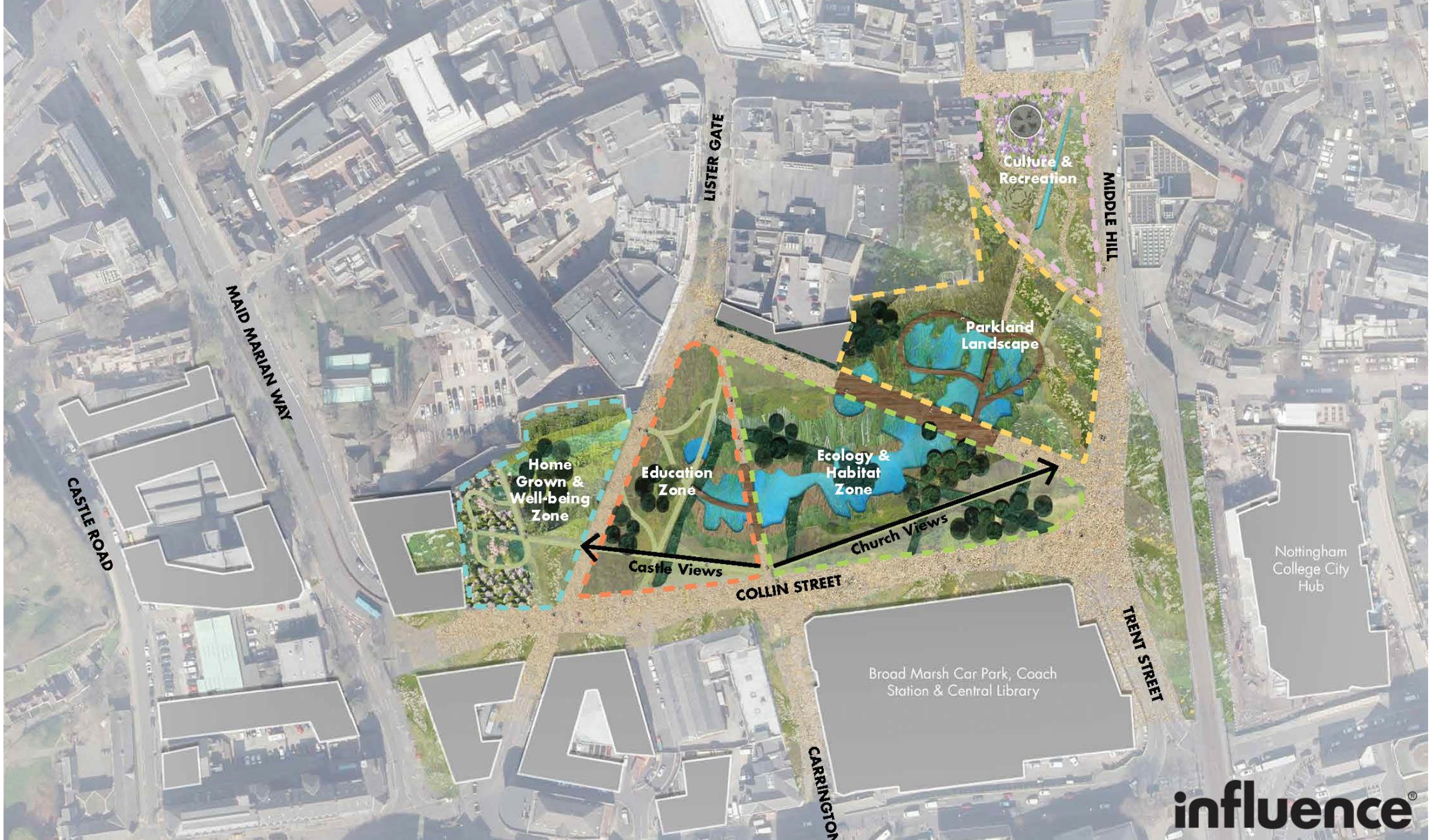

2023

Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

The Wildlife Trusts

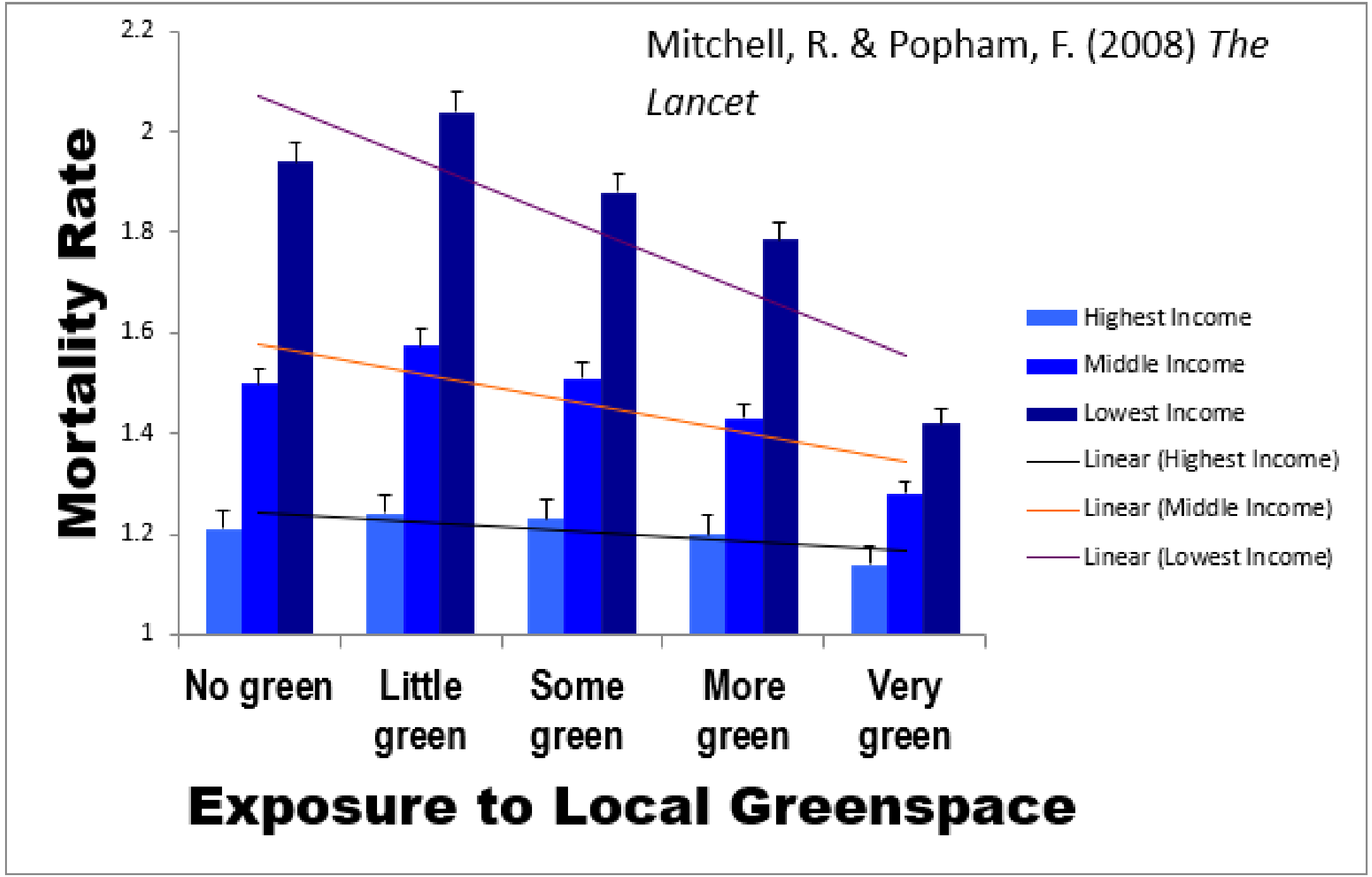
Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

Air


LISTER GATE
MIDDLE HILL
MAID MARIAN WAY
CASTLE ROAD
COLLIN STREET
TRENT STREET
CARRINGTON
Culture & Recreation
Parkland Landscape
Ecology & Habitat Zone
Education Zone
Home Grown & Well-being Zone
Church Views
Castle Views
Nottingham College City Hub
Broad Marsh Car Park, Coach Station & Central Library
influence®


To tram tracks
influence®


influence


Mitchell, R. & Popham, F. (2008) *The Lancet*
Mortality Rate
2.2
2
1.8
1.6
1.4
1.2
1
Highest Income
Middle Income
Lowest Income
Linear (Highest Income)
Linear (Middle Income)
Linear (Lowest Income)
No green
Little green
Some green
More green
Very green
Exposure to Local Greenspace

Trumpington Meadows

The 58-hectare country park and nature reserve sits alongside the River Cam. The site is a mix of meadows, hedgerows, woodland and parkland.

It is a space for walking, running, cycling or just sitting and relaxing. Children can create their own adventures in a safe, natural setting.

In the summer explore newly created hay meadows full of once-common wildflowers such as knapweed, field scabious, bird's-foot trefoil and salad burnet.

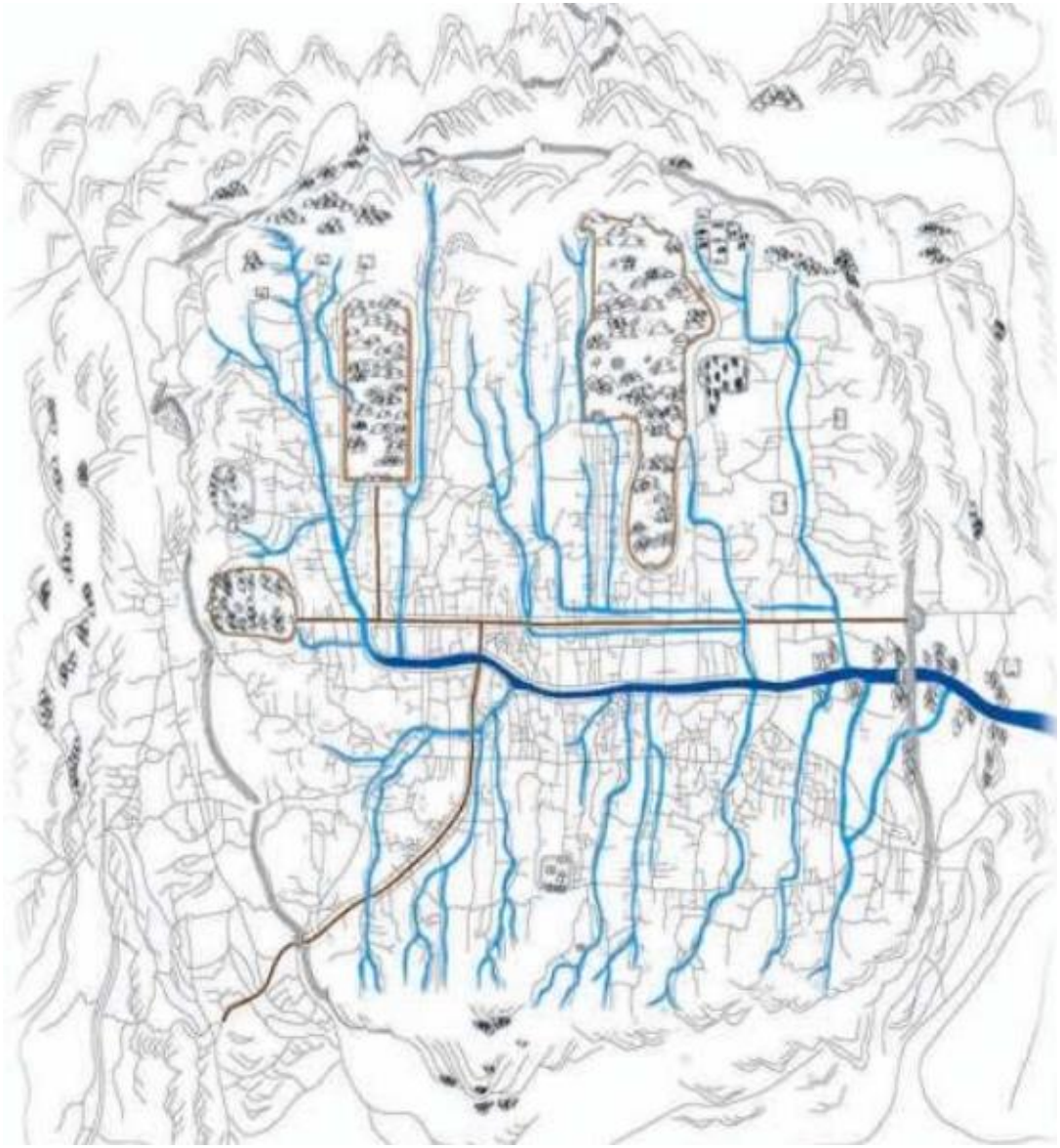
These meadows provide ideal habitat for brown hares and farmland birds such as skylarks, meadow pipits and yellowhammers, as well as insects including banded demoiselles and common blue butterflies.

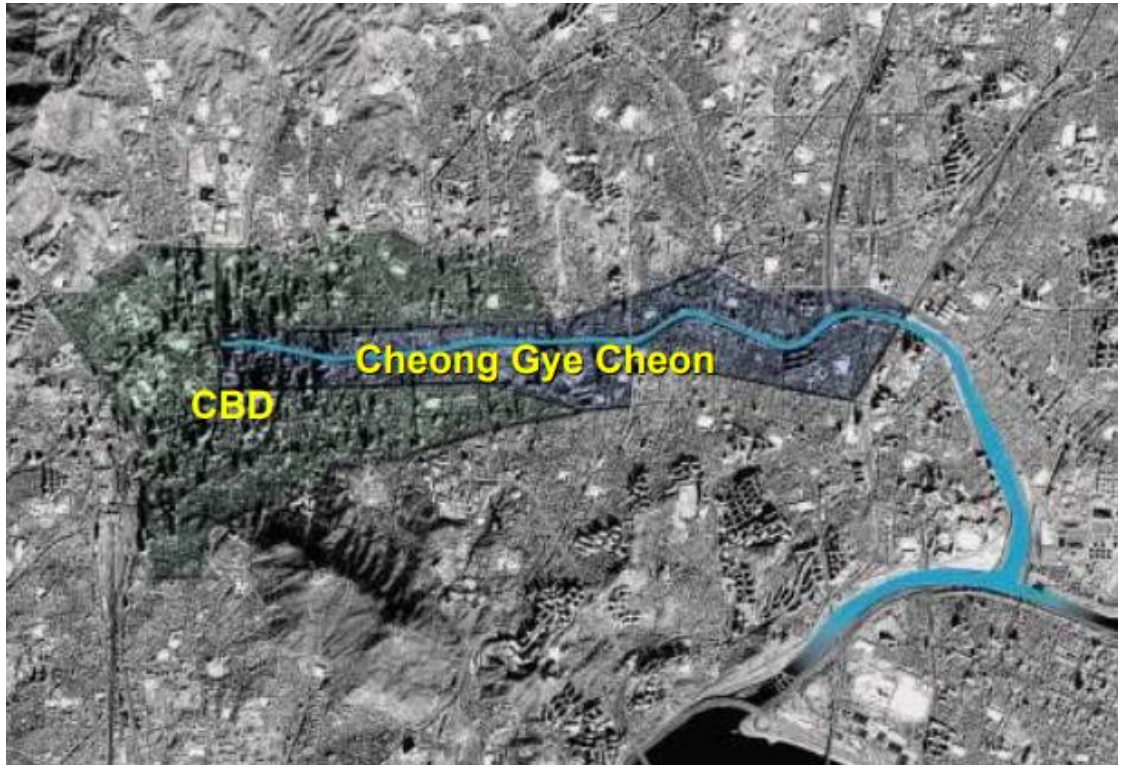
In the River Cam there are new gravel shoals to raise the river bed and tree trunks to narrow the channel and increase the flow to encourage brown trout and other fish to thrive. The riverside offers beautiful spots to walk and look out for wildlife including otters and kingfishers.

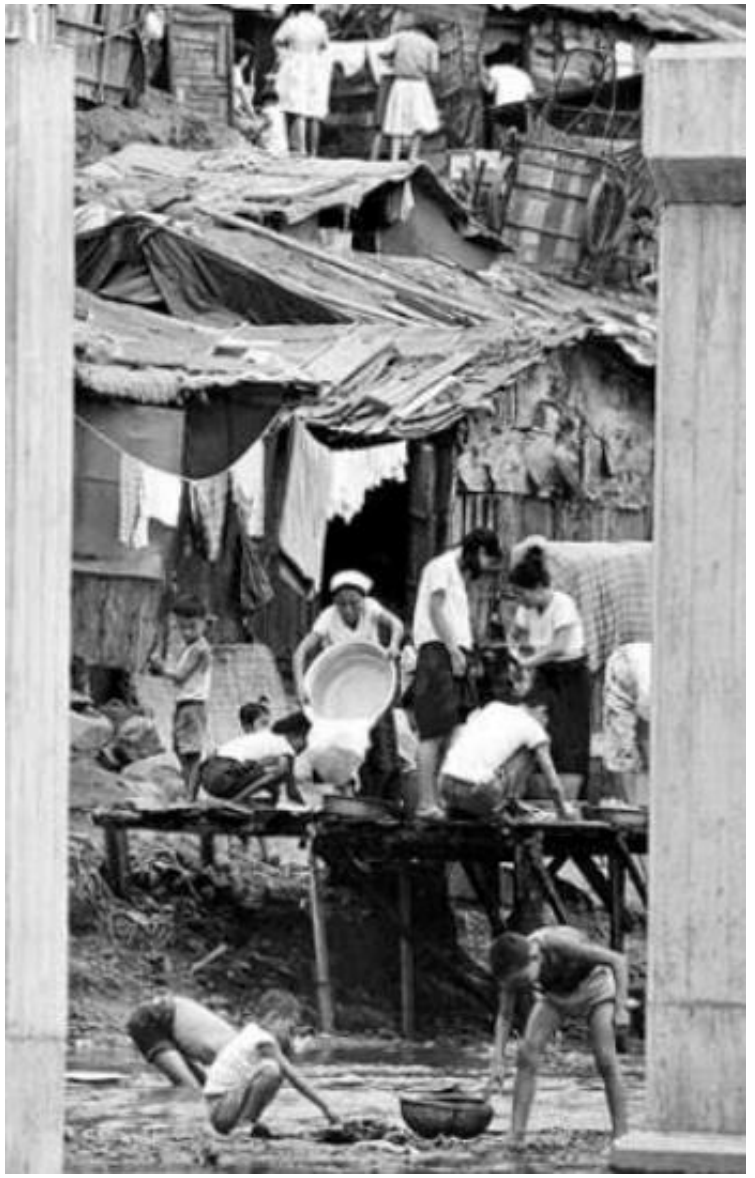
MAP KEY

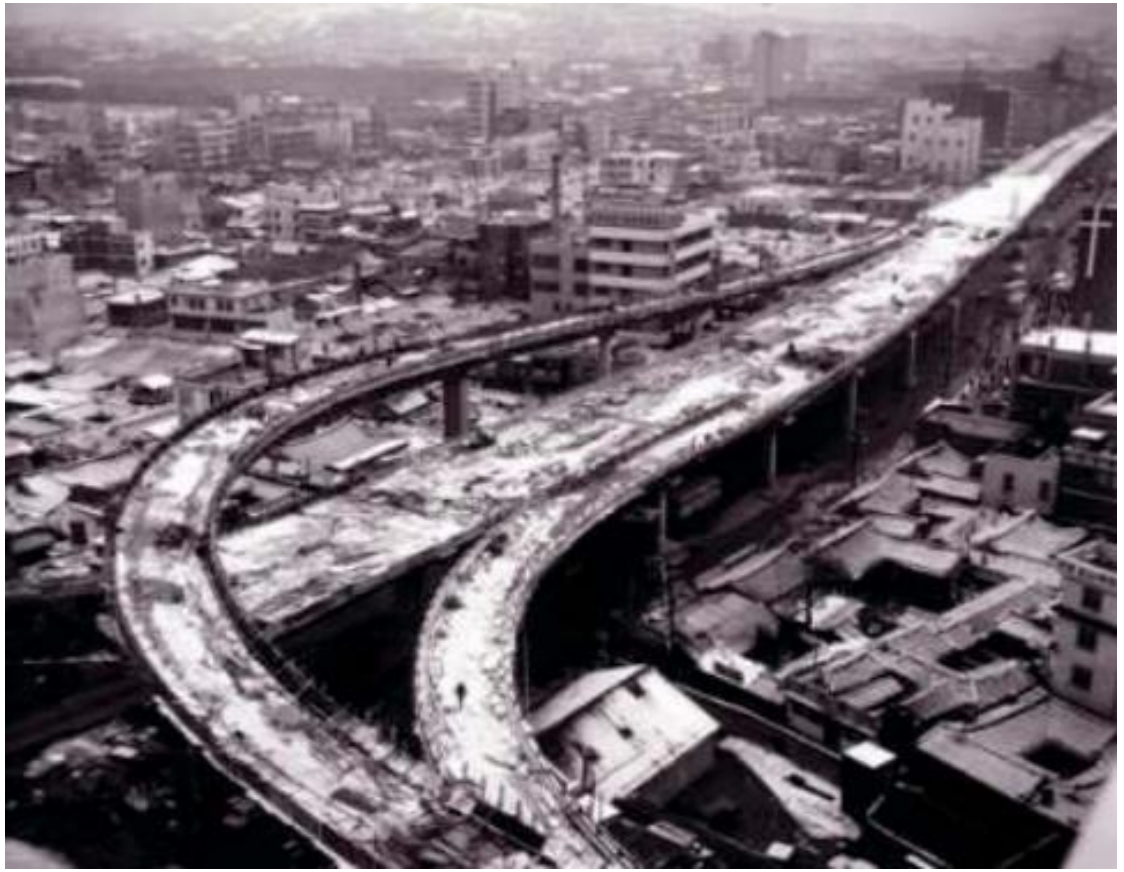
- E — Entrance
- Water
- Bike Stand
- Bench

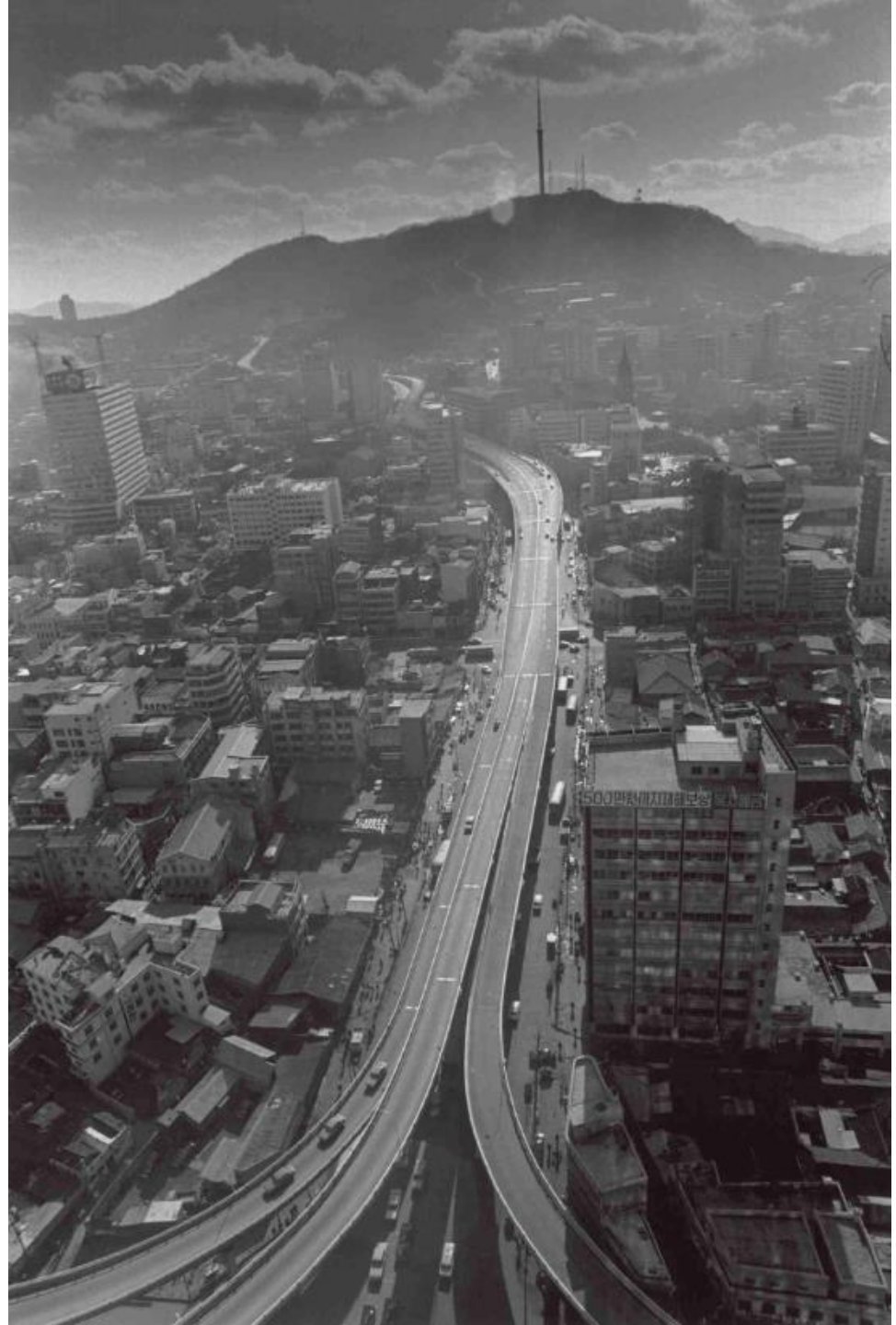
Restoration of 8km of Cheonggyecheon river, Seoul




Cheong Gye Cheon
CBD








Canon


신
평
화
신
원
화


신한은행


신정계의류상가

Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

The Wildlife Trusts

Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water

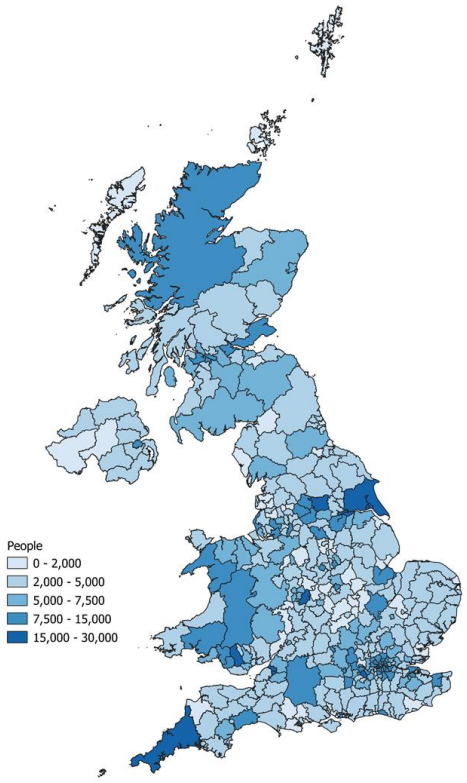
Fire

UK heatwave: East Anglia braced for 40C highs as A14 melts, trains disrupted and schools closed

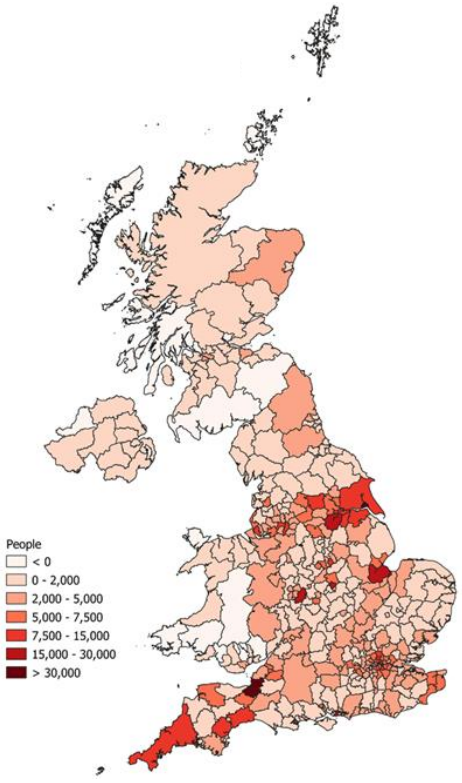
ANGLIA | HEATWAVE | EAST ANGLIA | ENVIRONMENT | Tuesday 19 July 2022 at 6:23pm

Firefighters tackle a wildfire during record-breaking temperatures on the Norfolk-Suffolk border.
Credit: Brandon fire station / Twitter

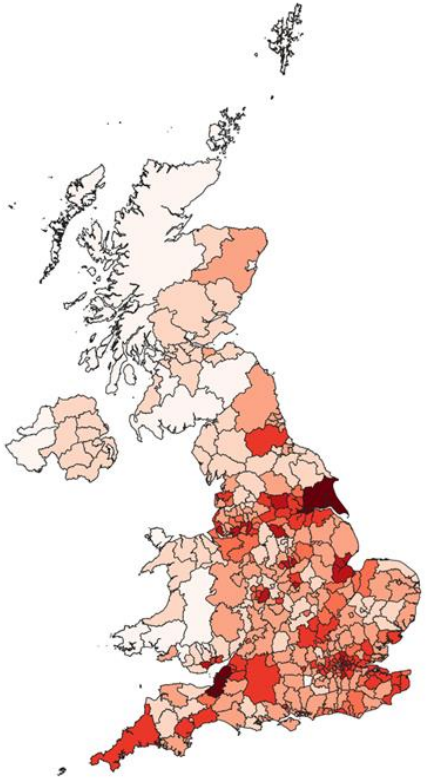
Climate change will increase the risk of flooding for people across the UK



Present Day



2°C scenario, 2050s



4°C scenario, 2080s

The number of people living in areas at significant flood risk (1:75 or higher from river, coastal or surface water) is likely to increase by 60% by 2050 (2°C scenario) and could more than double by 2080 (4°C scenario)

Blue map is the present-day number in each region, red shows the change in number of people from the present-day baseline

Source: Sayers et al. (2020) for the Third UK Climate Change Risk Assessment

June 2021

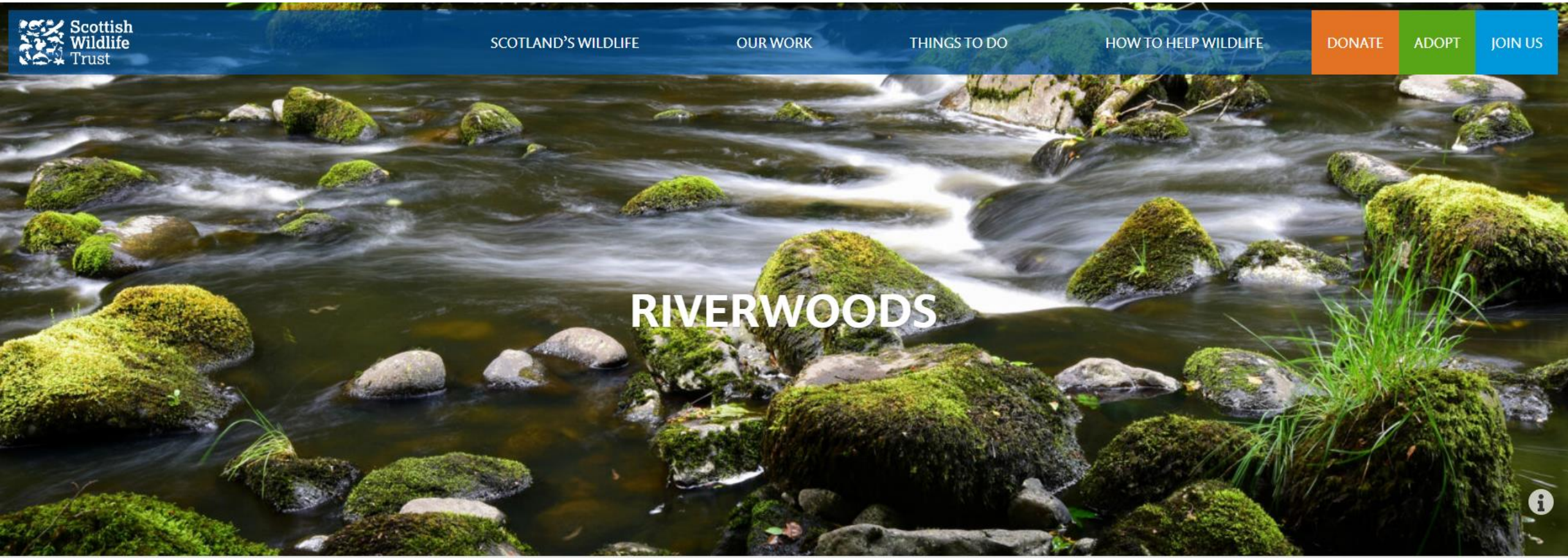
Independent Assessment of UK Climate Risk

Advice to Government
For the UK's third Climate Change Risk Assessment (CCRA3)

Climate Change Committee

David Parkyn/Cornwall Wildlife Trust


Devon Wildlife Trust



RIVERWOODS

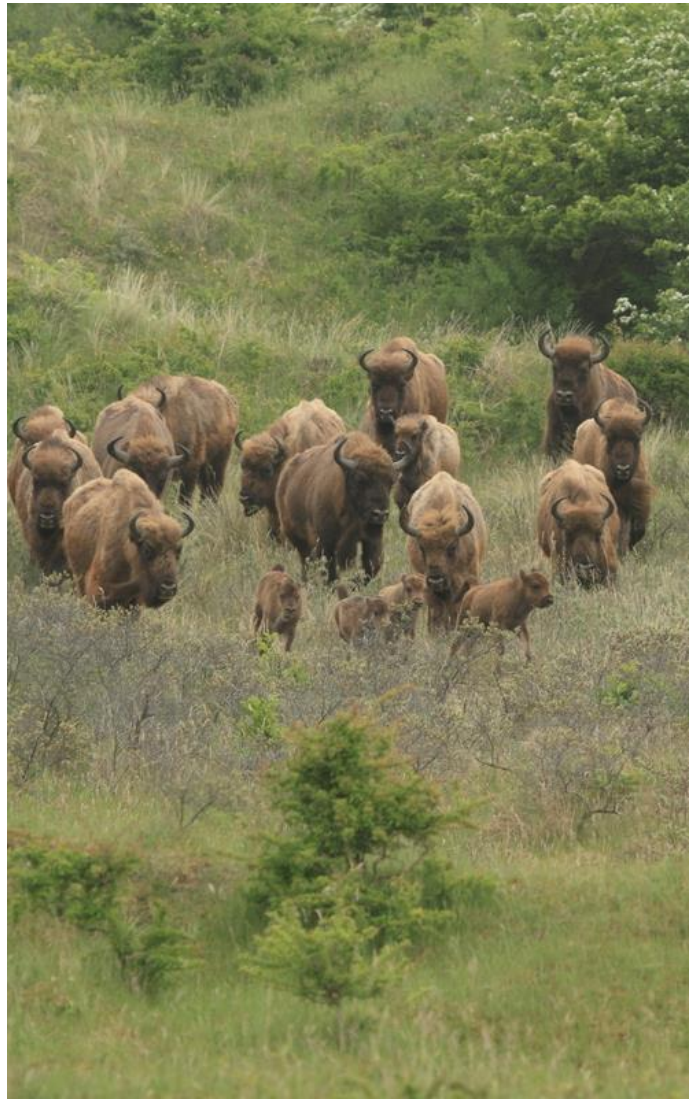
Riverwoods is an exciting, ambitious initiative, launched in 2019 by the Scottish Wildlife Trust, to create a network of thriving riverbank woodlands and healthy river systems across the whole of Scotland.

Creating habitat – and joining the fragments of remaining good habitat – is essential for wildlife in a rapidly changing climate. Improving the habitat alongside Scotland's rivers, streams and lochs will substantially contribute

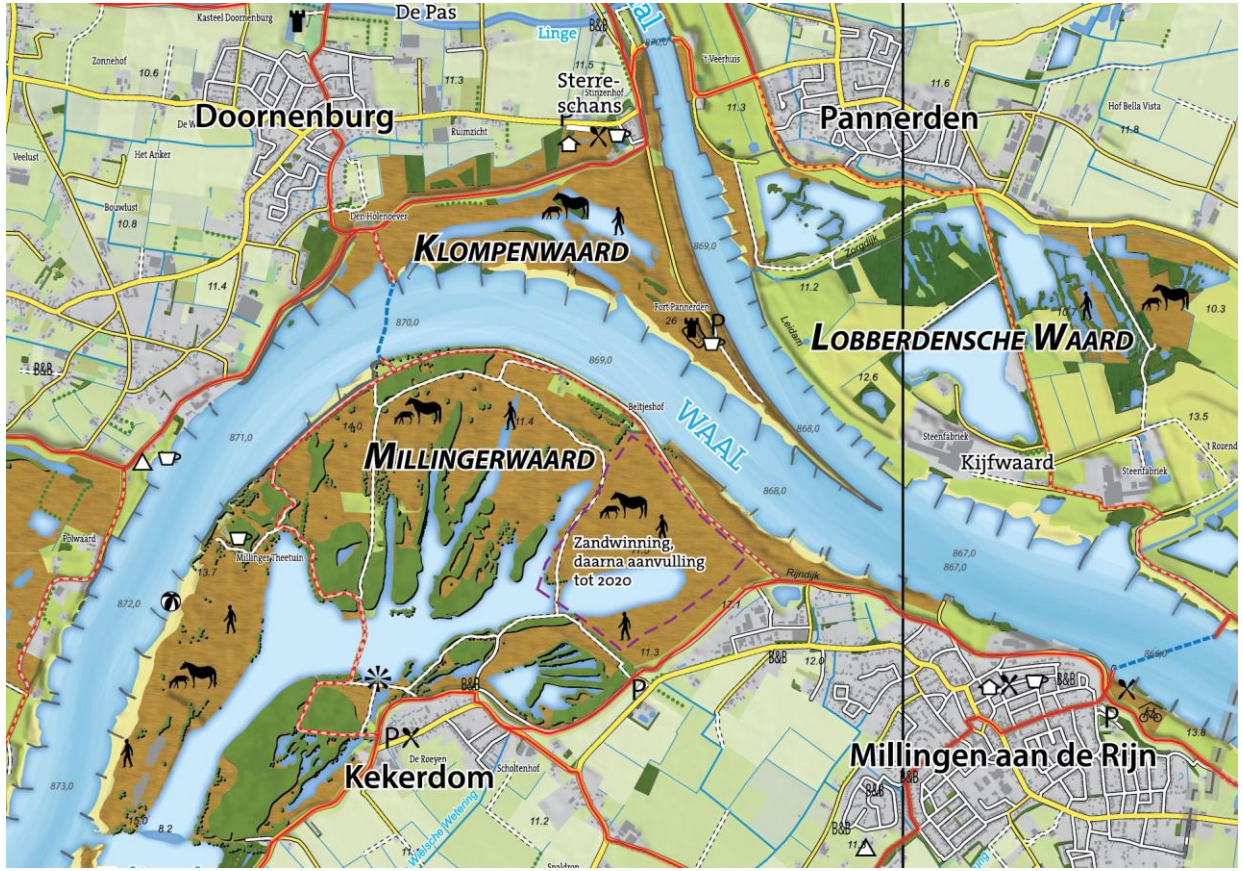
Nextdoor Nature
Riverwoods
Digital transformation
Earn Your Stripes

Examples from The Netherlands…

1. Gelderse Poort
2. Kempen~Broek
3. Grensmaas
4. Biesbosch National Park



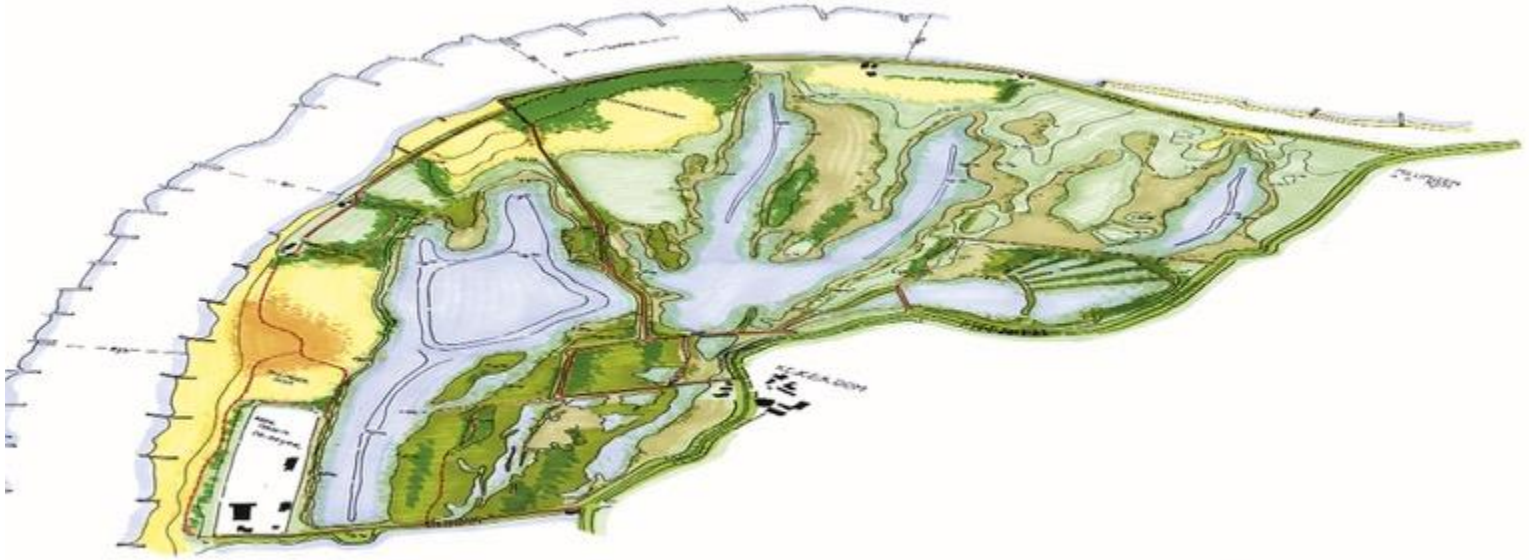
Millingerwaard in the Gelderse Poort



Millingerwaard is part of a mostly connected network of sites that stretch up the River Waal across the Dutch-German border.

- First developed as a 600ha pilot of the larger Gelderse Poort project (5000ha)
- Waterways restructured to make more space for floodwaters
- The “Room for Rivers” programme now encompasses the rivers IJssel, Lek, Maas and Waal (in the Rhine delta)
- Clay mining became a new economic driver, partially replacing agriculture.
- Ownership by various parties such as Staatsbosbeheer (the Dutch Forestry Department), Delgromij (a clay extraction company), and De Beijer (a brick factory), working in collaboration with wildlife charities
- New 300ha nature reserve created, with marshes, herb-rich grasslands, riparian forest, lakes and river dunes
- Home to free-roaming herds of Galloway cattle and Konik horses, beavers, otters, badgers, great white egrets, white-tailed eagles, skylarks, corncrakes and 10ks of geese

Gelderse Poort (5000 ha) - room for natural processes



Kempen~Broek wetlands (25,000 ha)

Kempen~Broek wetlands have been redeveloped to store water in times of flood and release water to agriculture in times of drought. The site is managed by ‘kept-wilding’ of horse and cattle (including tauros). The site has also become an important recreational and nature tourism area and is promoted strongly by Limburg and North Brabant provinces. Walkers and cyclists support local cafés, accommodation and bars building a new nature tourism economy for the area

Kempen~Broek wetlands (25,000 ha)

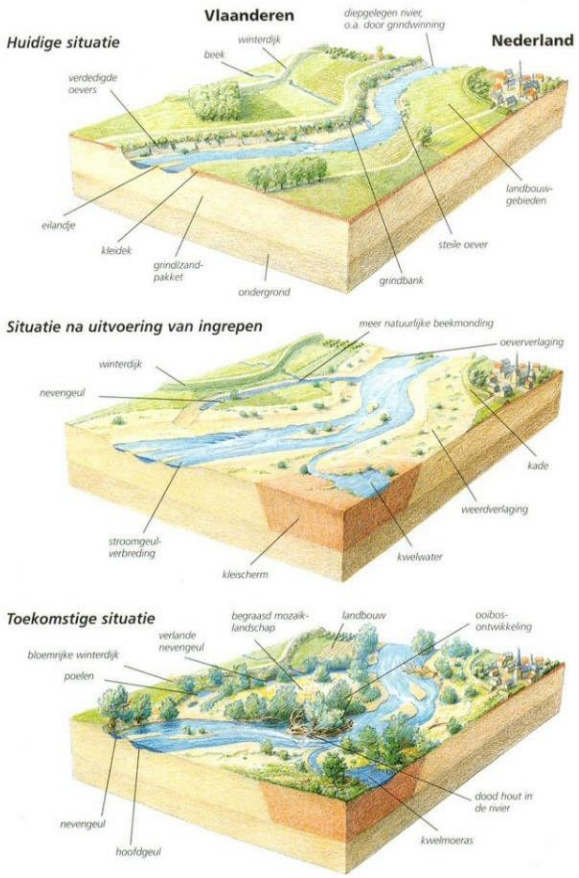
A wildlife highlight at Kempen-Broek – the diminutive tree frog that thrives in the wetland scrub.

- Inland sand dunes of heath and forest, surrounded by lower areas where tributaries of the River Meuse merge into a wetland landscape.
- Natural landscape has been restored from agriculture reconstruct the original ‘sponge’ function of wetland
- Mainly achieved through state acquisition of farms, that are then swapped with areas of former wetlands through a voluntary exchange.
- Over-fertilised top-soils often removed and can be used to improve swapped farming plots.
- Some original farmers also paid to provide and manage livestock on the nature reserves
- Area has become major visitor destination, with a network of trails, accommodation and cafes sustaining a new rural economy.

Grensmaas / BorderMeuse (43km of free-flowing river)

- 43 km of free-flowing gravel-bed river between Maastricht and Roosteren.
- Work started over 40 years ago in 1980 when shipping was redirected from the Maas to the Juliana channel
- The Maas here is relatively fast flowing and flashy
    - Average discharge is 200 m^3/s
    - Winter discharges > 1500 m^3/s and
    - Summer discharge < 10 m^3/s (in very dry seasons)

- *Room for Rivers* policy goal was to give the river more space by lowering the winter flood plain levels and reconnecting river with its floodplain
- New habitats for wildlife and recreational space for people also created.
- Plan is mirrored in Belgium through the 3,000 ha *De Levende Grensmaas* programme.



The Grensmaas programme is largely funded through gravel extraction. This creative approach provides a strategic supply of gravel, protects towns and villages from flooding, restores nature and increases nature tourism.

The Guardian
Newspaper of the year

The Meuse river has been widened and the riverbanks lowered, expanding the floodplain

The age of extinction

This article is more than 1 year old

'This is what a river should look like': Dutch rewilding project turns back the clock 500 years

Europe's largest river restoration is making changes across the entire landscape, bringing benefits to wildlife and people

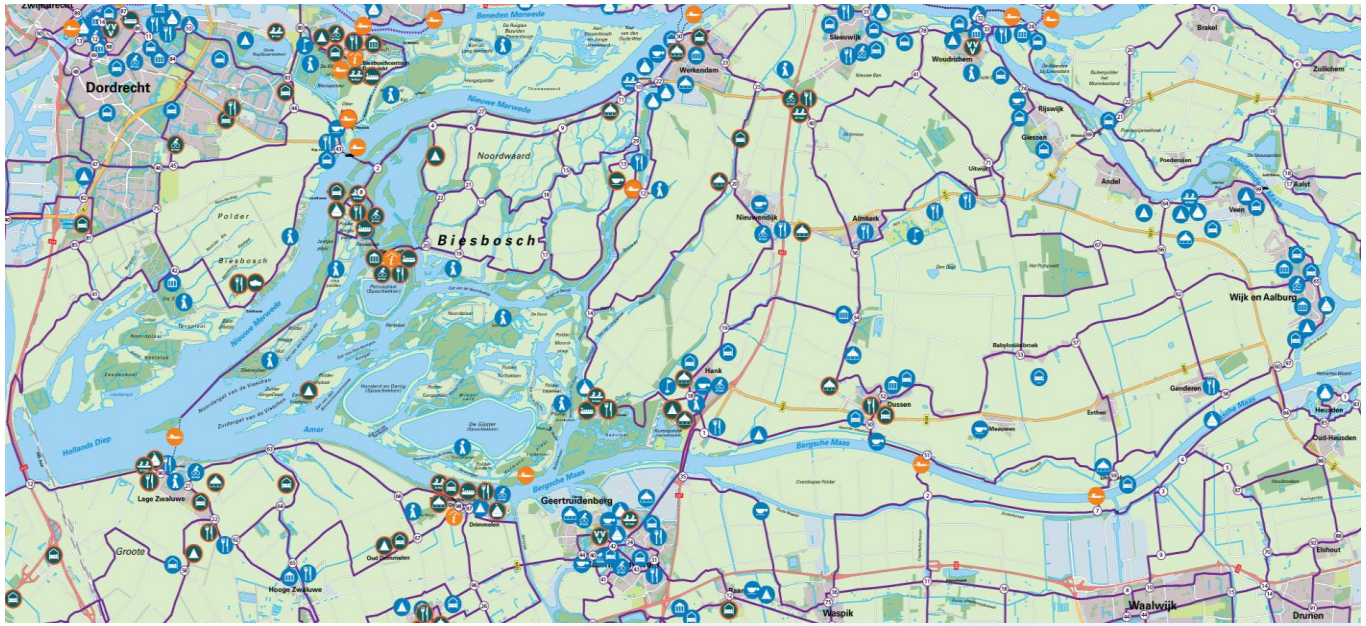
by Phoebe Weston. Photographs by Judith Jockel

"On the way to being one of the most beautiful nature areas in Europe," reads a sign overlooking a construction site near the village of Grevenbicht on the Meuse River in the southern Netherlands. Looking at the diggers, other bits of large machinery and bare soil, this is a stretch of the imagination. "You have to sell your story," says Frans Schepers, managing director of Rewilding Europe, who was leading the largest river-restoration project in Europe.

Biesbosch National Park

Biesbosch National Park – 300km^2

- one of the largest freshwater tidal wetlands in NW Europe
- was agricultural land, with farms and villages, reclaimed over five centuries
- since 1990s, much of this ‘reclamation’ work has been undone through “*Room for Rivers*” programme, recreating inland river delta
- a network of rivers and creeks, with islands of wet willow forest, wet grasslands and reedbed
- return of wildlife such as white-tailed eagle, osprey, great and little egret, bittern and kingfisher
- partial opening of Haringvliet dam in 2018, restoring salt-water into the Hollands Diep and reconnects the Rhine and Meuse/Maas to the North Sea
- allows migratory fish such as herring, twait,salmon & sturgeon, back into the Rhine catchment



Examples from The Netherlands…

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3. Grensmaas
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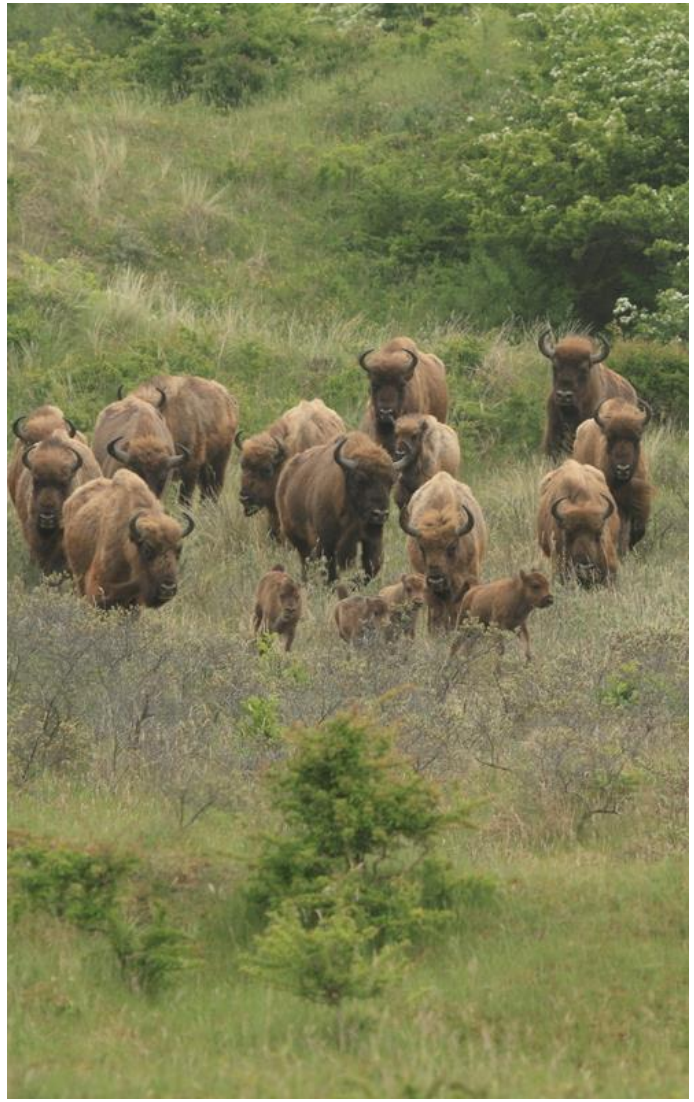
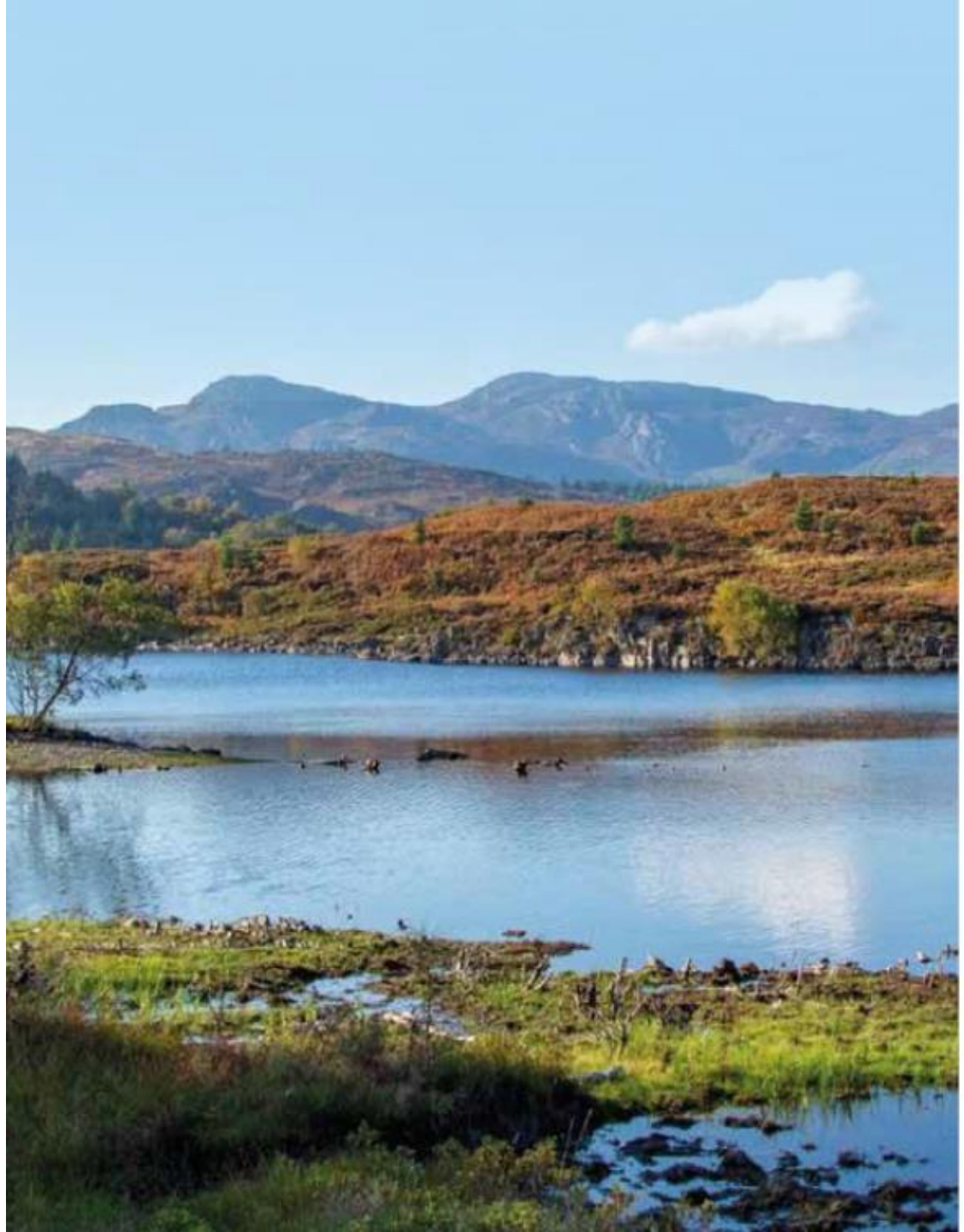



1000 Miles Wilder
The Great Eastern River Forest

Earth, water, air and fire: how fixing and restoring our rivers is about so much more than water


The Wildlife Trusts
Bringing Nature Back
The Wildlife Trusts' Strategy
2030



Our vision is of a thriving natural world, with our wildlife and natural habitats playing a valued role in addressing the climate and ecological emergencies, and everyone inspired to get involved in nature's recovery.

Our purpose

Our purpose is to bring wildlife back, to empower people to take meaningful action for nature, and to create an inclusive society where nature matters.

Our approach

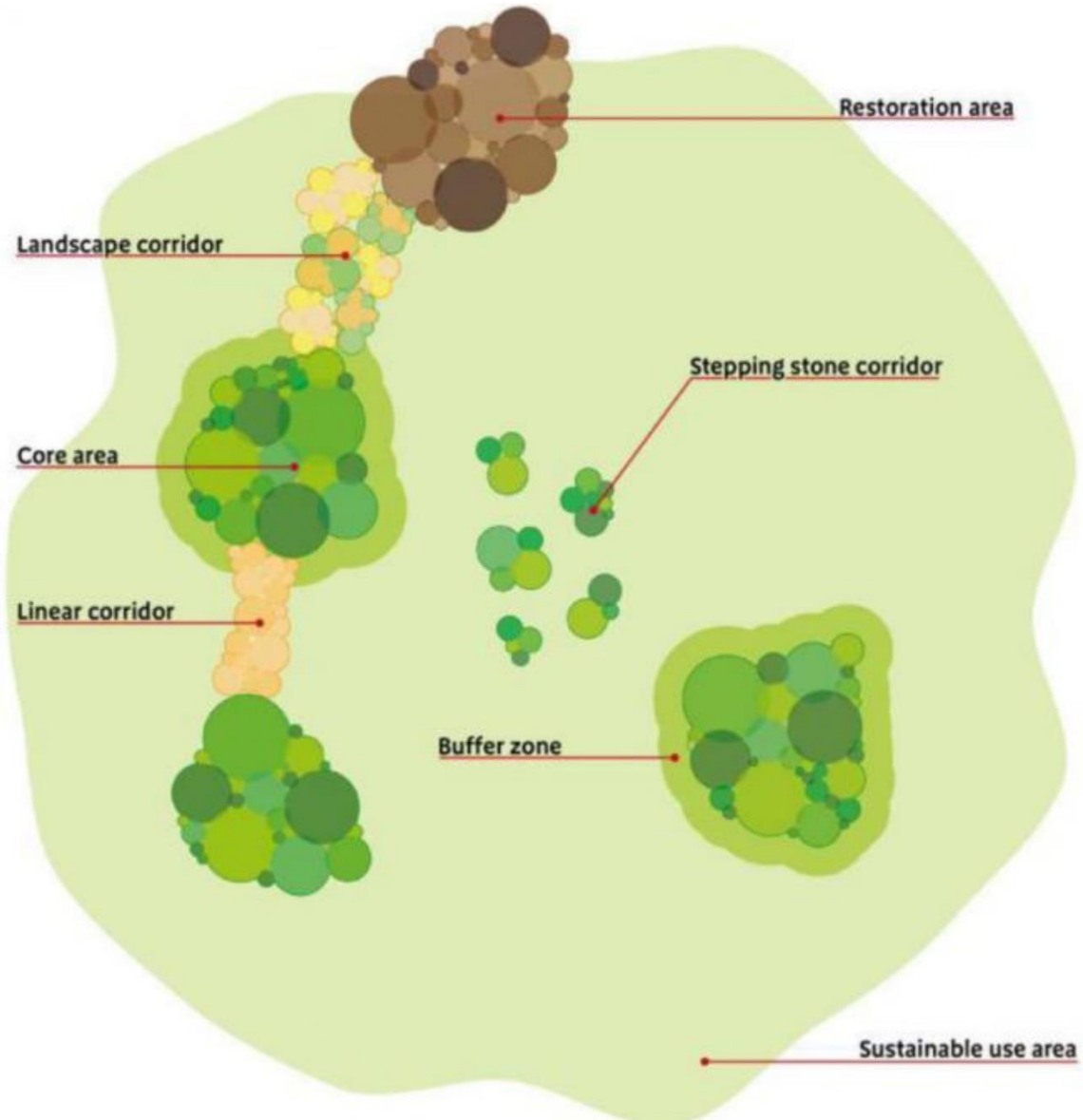
We are ambitious in our desire not just to slow but to reverse the declines in nature. We speak with a bold and confident voice, to tell the truth about the state of nature and what needs to be done to put it in recovery.

As a grassroots movement, we are firmly rooted in our local communities where we look after wild places, increasing people's understanding of and connection to the natural world, on land and at sea.

We look to establish common cause and work in partnership with others, at both a local level and a UK-wide level, to develop new, innovative ways to do what's right for nature and deliver impact in support of our vision.

We demonstrate what is possible, and inspire, empower, and enable people from all ages, backgrounds, cultures, identities and abilities to bring about our vision with us, embracing the diversity of our society to change the natural world for the better.

As a network of Wildlife Trusts, we work to ensure that our local actions, and our work through the four nations of the UK, add up to have a collective impact and help address global issues. Our differences are our strength, but we also strive to be more than the sum of our parts.



Lawton principles:

"bigger, better, more joined up"


Lianne de Mello


Martin de Retuerto

The Wildlife Trusts

Thank you.