



# Let **nature** help

How nature's recovery is essential  
for tackling the climate crisis



**Essex**  
Wildlife Trust

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# The time is now

To deal with the climate crisis, we must bring nature back on an ambitious scale

**T**he climate emergency is now a standing item on the agenda of most countries around the world and the UK government has joined many other nations in setting targets in law to tackle the climate crisis.

However, what's less well documented is the undeniable links between the climate crisis and the ongoing ecological crisis. They are so inextricably linked and therefore we cannot consider one without the other.

Essex has a wealth of different habitats and many of them can

**“Essex has a wealth of different habitats and many of them can actively help to tackle the impending climate catastrophe.”**

actively help to tackle the impending climate catastrophe. From our woodlands to our saltmarsh, from our intertidal habitats to our marine seagrass beds, our natural landscapes in Essex are perfectly placed

to sequester carbon and provide a suite of mitigation options and solutions.

In order to help stabilise our climate, we mustn't just focus on the cause, we must place equal effort in the solutions and that requires action to fix our broken ecosystems. We must restore wild places, revive species richness and embrace the intrinsic value that the natural world provides.

For decades, ecologists have been arguing for the Government to acknowledge the 'natural capital' that is staring us in the face, but jobs and wealth creation



Terry Whittaker



Niki Clear



Let nature help

Julie Hatcher

Peter Cairns/2020Vision

# Contents

## 4 Nature-based solutions

The natural systems that lock carbon away safely

## 6 What nature can do

The multiple benefits of giving nature a chance

## 8 Case study 1

Managed Realignments

## 9 Case study 2

Saltmarsh Restoration

## 10 Case study 3

Natural Flood Management

## 11 Case study 4

The Essex Fish Migration Roadmap

## 12 The way forward on land

The policies that will help nature work for us

## 14 The way forward at sea

How to revolutionise the way we manage the sea

Cover: Terry Whittaker/2020VISION

have always been the trump card. However, now the Government's own economists are saying that nature must be at the heart of decision making, if we are serious about a sustainable future.

If we are truly serious about tackling the climate crisis, then we have to be equally serious about restoring our landscapes and delivering nature's recovery.



**Andrew Impey**  
CEO, Essex Wildlife Trust

Rupert Paul

Surrey Wildlife Trust



# Nature-based solutions

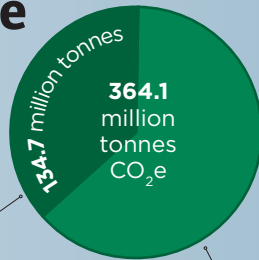
The UK has a target of net zero greenhouse gas emissions by 2050. Nature can make a massive contribution to achieving this, or an even more ambitious target – but only if we restore our damaged ecosystems. Here are the main areas that need attention



## The size of the prize

**37%** Restoring our natural systems could provide 37% of the CO<sub>2</sub> mitigation needed by 2030 to meet the Paris Agreement

Possible contribution of UK natural systems to reducing CO<sub>2</sub> emissions



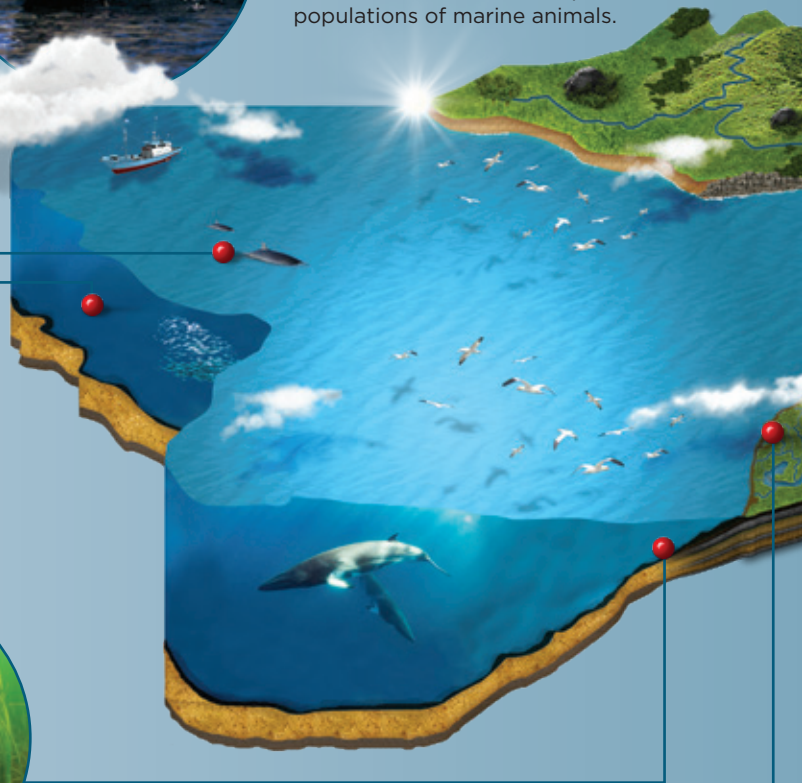
Total UK emissions 2018

Splashdowndirect.com

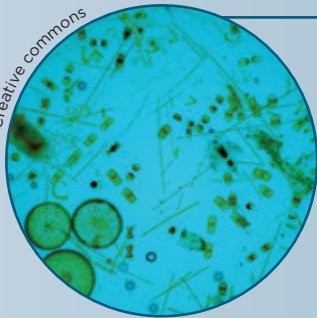


## BIOMASS CARBON

All animals and plants are carbon stores. When marine animals die, they generally sink and become incorporated into sediment, where their carbon might stay for thousands of years. Human activities release this carbon and impact populations of marine animals.



Creative commons



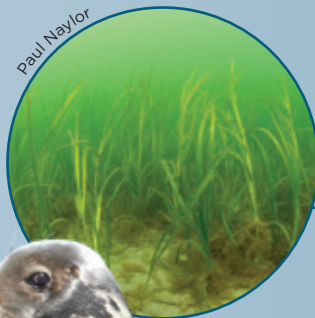
## FOOD WEB CARBON

Phytoplankton are the basis of ocean food webs and absorb CO<sub>2</sub>. Globally, 10 billion tonnes of carbon are transferred to seabed sediments when phytoplankton die or are eaten then excreted.

## SEAGRASS

A hectare of seagrass may store two tonnes of CO<sub>2</sub> a year and hold it for centuries, while providing nursery habitat for young fish. But we have lost half our seagrass meadows since 1985. Reducing water pollution and replanting would bring them back to health.

Paul Naylor



## SALTMARSH

A hectare of saltmarsh can capture two tonnes of carbon a year and lock it into sediments for centuries, but we are losing nearly 100 hectares of saltmarsh a year. Coastal realignment could restore much of it, and reduce flooding and erosion.

Niall Benvie



# BLUE CARBON

Oceans absorb 20-35% of human-made CO<sub>2</sub> emissions every year. Carbon is incorporated into the tissues of plants and animals, and later into mud and sediments.

**PEATLAND**

The UK's peatland soils store around 3.2 billion tonnes of carbon, but are heavily degraded and release the equivalent of 23 million tonnes of CO<sub>2</sub> every year. Restoring them to prevent this emission is one of the most cost-effective nature-based solutions.



Rob Jordan



Zsuzsanna Bird

**GRASSLAND**

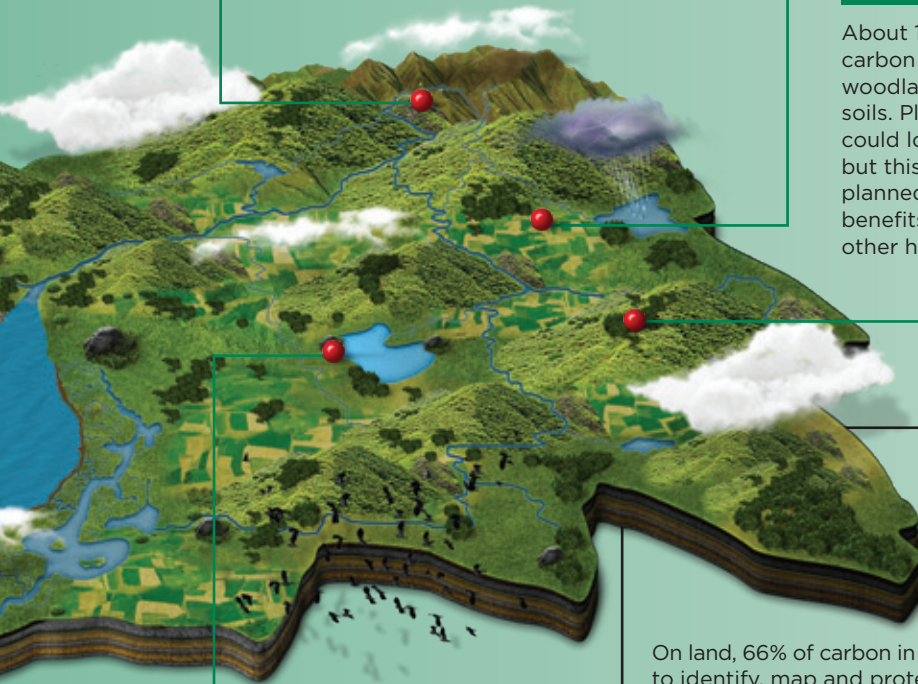
UK grasslands store 2 billion tonnes of carbon, but this is vulnerable to disturbance. Between 1990-2006, arable conversion of grasslands released 14 million tonnes of CO<sub>2</sub>. We can restore species-rich grasslands to lock up carbon and support abundant wildlife.

**WOODLAND**

About 1 billion tonnes of carbon are locked up in UK woodlands, mostly in the soils. Planting more woods could lock up more carbon, but this must be carefully planned to maximise benefits and avoid harming other habitats.



Rupert Paul



Rupert Paul

**WETLAND**

Wetlands can accumulate carbon for centuries, but in some areas of the UK we have lost over 90% of our wetland habitat. Restored wetlands provide rich habitat, clean water naturally and reduce flood risk downstream.

**The crucial tool:  
a Nature Recovery  
Network**

On land, 66% of carbon in nature-rich areas is outside protected sites. We need to identify, map and protect these ecosystems, and restore them locally as part of a national Nature Recovery Network. We also need to incentivise farmers and other land managers to improve their land for nature and contribute to this network.

At sea, we need effective marine planning, and an ecologically coherent network of Marine Protected Areas.



Matthew Roberts

**We need nature to be everywhere again**



**GREEN  
CARBON**

Globally, plants have removed 25% of human-made CO<sub>2</sub> emissions. Soils contain more carbon than is stored in plants and the atmosphere combined.

# What nature can do if given

Restoring nature doesn't just lock up carbon; it delivers multiple other benefits besides

**H**ealthy ecosystems on land and at sea can absorb vast quantities of CO<sub>2</sub> from the atmosphere and lock it away as carbon. However, human activities such as intensive arable farming, overgrazing, overfishing and irresponsible development release this stored carbon and drive nature's decline.

As a first step, we urgently need to protect important ecosystems so their carbon isn't released and they can continue to absorb CO<sub>2</sub>. We also need to put nature into recovery across a third of land and

sea, so the natural world can cope with the climate change that is already happening and contribute effectively to stabilising it.

Doing this across a mosaic of connected habitats will also deliver countless other benefits:

## **FLOOD PROTECTION**

Healthy habitats such as protected wetlands, restored peatlands, wildflower-rich grasslands and native woodlands can slow, store and filter water, reducing the risk of flooding downstream and cleaning water naturally.

## **COASTAL DEFENCES**

Habitats like saltmarsh and seagrass help protect us from coastal erosion and storm surges, while providing important nursery areas for fish.

## **HEALTHIER LIVES**

Woodlands and other wild places clean the air, regulate temperature, and improve our health and wellbeing.

## **NATURAL RESILIENCE**

Thriving ecosystems provide the pollinators, soils, nutrients, food and water which sustain us.

**The Wildlife Trust's work on more than 100 Living Landscape projects across the UK shows that restoring nature is sustainable and feasible**

# a chance

## We can deliver

For more than a century, The Wildlife Trusts have been saving, protecting, and restoring wild places and bringing people closer to nature.

We are involved in projects to restore and connect habitats across the country as part of a Nature Recovery Network, from re-wetting peatland to creating saltmarsh and planting seagrass. We also advise thousands of

Jon Hawkins



**Our ground-up structure means we are the local experts**

farmers and landowners on how best to care for their land so that it sustains wildlife.

We have the know-how and expertise to work in partnership. With investment and support from governments, businesses and local communities, we can create real change for nature's recovery, so that nature-based solutions can play a massive role in achieving net zero emissions.



# Four flagship projects

Essex Wildlife Trust are taking action to bring nature back across the UK. Here's a few of these key projects

## Managed Realignments

Rising sea levels and increasingly frequent storms threaten both man made defences and important habitats on our coastlines. In Essex, up to 60% of coastal marshes have been eroded in the last 20 years.

At Abbots Hall and Fingringhoe Wick, Essex Wildlife Trust has worked with the Environment Agency and other partners to realign the coast and create a thriving intertidal habitat, including saltmarsh. When Essex Wildlife Trust purchased Abbots Hall Farm in 1999, part of the seawall was in need of repair. Instead of undertaking the costly work to maintain it, we explored coastal defence methods which took account of rising sea levels.

After two years of studies, monitoring, and consulting the local community, new defences were installed further inland and in 2002 the old seawall was breached to allow tides to wash onto disused farmland. The managed retreat is transforming 50 hectares of previously arable land into saltmarsh abundant with wildlife, particularly

migratory birds. The new habitat is also teeming with young bass, herring and 14 other types of fish feeding in the creeks within the marshes.

The knowledge gained from this project led to the Trust conducting a second managed realignment project on the Colne Estuary, at Fingringhoe Wick. In 2015, a 300m breach was created in the seawall. In just five years an additional 22 hectares of intertidal habitat has been created, alongside 1.5 hectares of reedbed to help hold high water levels and improve the water quality. The intertidal area is now fully functional for feeding wading and wetland birds, including avocet, common tern and shelduck and fish surveys have already demonstrated it is a successful fish nursery site.

These ground-breaking projects show what can be achieved when coastal realignment is carried out in suitable places and static seawalls are replaced with dynamic, carbon-absorbing tidal habitat, helping our wildlife and coastal communities stay resilient in the face of change.

**“The new habitat is also teeming with young bass, herring and 14 other types of fish feeding in the creeks within the marshes.”**





Highly vegetated coir roll structure bridging a saltmarsh channel at Moverons Farm, Colne Estuary.  
Photo credit: Essex Wildlife Trust

## Saltmarsh Restoration

Essex Wildlife Trust's second approach to protecting saltmarsh habitats, aimed at restoring established habitat at risk of erosion using low-cost approaches, began in 2018. Working with the Environment Agency we have been exploring experimental and low-cost approaches to habitat restoration. If successful, this project approach and methodology could be replicated across the county and wider country, helping to combat saltmarsh loss throughout the UK.

The project installed coir roll structures in low energy saltmarsh channels at two locations, to encourage sediment accretion and recolonisation of saltmarsh plants. Carbon is captured by the plants growing in the saltmarsh through photosynthesis and is stored both in the plant and the sediment beneath. With the support of The Wildlife Trusts' Nature-based Solutions Fund, with a grant from players of People's Postcode Lottery, awarded by Postcode Planet Trust, we are embarking on the next exciting phase of the project. With the expertise and support of the University of Essex and the Environment Agency, we will quantify the success of this restoration technique and start to scope out its potential for application as a restoration technique on a landscape-scale, before creating a Saltmarsh Restoration Toolkit.

**“Carbon is captured by the plants growing in the saltmarsh through photosynthesis and is stored both in the plant and the sediment beneath.”**



Leaky log dam on Roxwell Brook

## Natural Flood Management

**“Water is released more gradually during flash floods and overall peak levels at pinch points have been reduced.”**

With more erratic rainfall patterns and heavily modified river channels it is important to slow the flow of water through the environment. Retaining water in the subsoil not only helps to prevent flooding but provides more constant water supplies during periods of drought. Essex Wildlife Trust has been installing leaky wooden dams upstream of the flood prone village of Roxwell to prevent water from two brooks arriving simultaneously. Water is released more gradually during flash floods and overall peak levels at pinch points have been reduced.

Going one step further we helped with the release of beavers at the Spains Hall Estate upstream of Finchingfield. The transformation of the landscape in the beaver enclosure has had dramatic effects, storing huge quantities of water in a series of large pools over winter and reducing flood risk for homes downstream. In the summer, large quantities of water stored below ground are gradually released to allow the beaver stream to flow continually, even in times of drought. This water security, along with the filtering effects of the series of dams, has led to increased biodiversity with water shrews, freshwater shrimp and kingfishers back on site and cleaner water flowing downstream.

## The Essex Fish Migration Roadmap

Connected habitats are essential for wildlife and rivers may appear to be the most obvious example of this. However in Essex alone there are up to 400 barriers to upstream movement of fish leaving all of our rivers completely disconnected from natural migration routes. Working with the Environment Agency and the Thames Estuary Partnership we have mapped all the barriers within 30km of the coast and are now working to bypass or remove as many of these as possible.

Weirs, mill gates and flood barriers all pose their own unique problems and the solutions will all differ, but at Bures Mill by reconnecting the old course of the River Stour we could bypass the huge floodgate. Not only did this reconnect fish to the upstream section of the river, it also provided superb habitat for a family of otters using the back channel to teach the cubs how to swim and fish in the pools and shallower water. Over the next decade we want to turn the red (impassable) sections of the map green and allow fish to once more move up and down our rivers, unimpeded by artificial barriers.

**“In Essex alone there are up to 400 barriers to upstream movement of fish leaving all of our rivers completely disconnected from natural migration routes.”**



Impassable weir on the River Blackwater

# A better way to manage our land

Our natural habitats can become long-term carbon stores if they are allowed to function well. This will take careful planning, regulation, incentives and good land management

## HEDGEROWS

The UK's hedgerows store carbon above and below ground, and connect habitats across the landscape. We need 40% more hedgerows to help reach net zero by 2050.

## PEATLANDS

These vast stores of carbon need positive long-term management. Restored peatlands can capture more carbon, reduce flooding, clean our water, and allow wildlife to thrive.

## WETLANDS

Healthy wetlands store carbon, support wildlife and hold back flood water. Less drainage and over-abstraction, the return of beavers and naturalising rivers will lock up more carbon.

### COAST

Our coasts must be managed to cope with climate change. Coastal realignment can create carbon absorbing, species-rich habitats and natural defences against sea level rise and storm surges.

### GRASSLANDS

Species-rich grasslands are huge carbon stores and when managed carefully, e.g. through herb-rich leys and sensitive grazing, they lock in carbon and boost biodiversity.

### WOODLANDS

We need to protect our existing woodland and help it to expand and join up. Semi-natural native woods store carbon, reduce flood risk, and improve our wellbeing when we visit them.

### SOILS

Soil organic matter stores more carbon than any other land system, but is threatened by intensive farming. Crop rotation, cover crops and less ploughing can restore this fundamental asset.

# A better way to manage our sea

Introducing Marine Spatial Planning would integrate all activities to avoid unintentional harms and maximise benefits

## LOCAL TOURISM

Caring for and protecting nature can boost the local economy through increased eco-tourism, and improve people's access to nature, making them happier and healthier.

## SEAWEED AQUACULTURE

Sustainable seaweed farms can store carbon and reduce the impacts of ocean acidification. They can also provide habitat and nursery grounds for young fish and crustaceans.

## REAL PROTECTION

To give marine wildlife the best opportunity to recover, we need to deliver a suite of Highly Protected Marine Areas with the strictest possible protections.

## NO-TRAWL POWER CABLES

Laying cables for offshore windfarms can damage habitats and sediments. Laying should be unobtrusive and, to prevent damage, trawling near cables should be prohibited.

**DESIGNATED  
AREAS**

Well managed and monitored Marine Protected Areas are vital for nature's recovery at sea, and they safeguard important carbon storing habitats like seagrass meadows.



**RETURN OF  
OCEAN GIANTS**

Bigger populations of species like whales and basking sharks would store more carbon. We need to protect them from pollution, industrial fishing and other harmful human activities.



**BUBBLE  
CURTAINS**

Construction at sea can cause noise pollution, harming species like harbour porpoises. Less impactful methods and noise dampening measures like bubble curtains are essential.

# Nature needs our help to **recover...**



## Together, we can make it happen

Essex Wildlife Trust has over 60 years of experience delivering nature-based solutions locally and at scale.

Together with communities, landowners, and public and private partners, we have been restoring

natural processes and recovering wild places for decades.

Our work on the ground is expert-led and guided by Nature Recovery Network mapping, ensuring projects are delivered in the right place and in a joined up way – with

the ultimate aim of securing 30% of land and sea for nature's recovery.

We have the skills and knowledge to create thriving, connected wild places that support abundant wildlife, lock up carbon naturally, and provide other benefits besides:

- cleaner air and water, with fewer pollutants such as nitrates, phosphates and particulate matter;
- cost-effective natural flood management and coastal defences;
- delivery of biodiversity 'net gain' where losses arise following development;
- connecting people and nature, for the benefit of their health, wellbeing and enjoyment of life.

You can help Essex Wildlife Trust make a real and lasting difference in the county by supporting us to lock up more carbon and make nature's recovery a reality.

Find out more about nature-based solutions in Essex

[www.essexwt.org.uk/nature-based-solutions](http://www.essexwt.org.uk/nature-based-solutions)



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