

WORDS **KIRBY EVERETT**

Our nature reserves and green spaces provide vital homes for wildlife, but they're so much more than that. They're the life support function for our lives, our communities and our local businesses. Natural habitats in good health reduce the risk of flooding, help prevent coastal erosion, improve people's health and ensure thriving ecosystems which provide the pollinators, soils, food and water which sustain us. Restoring nature at scale also happens to be one of our best hopes for storing carbon to mitigate against the effects of the global climate crisis.

Sadly, however, the UK is one of the most nature depleted countries in the world. The 2019 State of Nature report found that 41% of UK species have declined since 1970, and we have lost 97% of our meadows since WW2, 80% of our chalk grasslands, and more than half our ancient woodlands. As they were lost, all the carbon that they were keeping locked up was released.

The Wildlife Trusts estimate that putting nature into recovery on land and sea across the UK could result in nature absorbing around a third of the country's current carbon emissions. We still need to do everything we can to cut emissions from buildings, power stations, industry and transport, but there's been a blind spot in the climate debate for years about the role nature can play in helping us out. Enter nature-based solutions...

WHAT ARE NATURE-BASED SOLUTIONS?

The International Union for Conservation of Nature defines nature-based solutions as "actions to protect, sustainably manage, and restore natural or modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human well-being and biodiversity benefits".

Put simply, nature-based solutions means recognising that nature can help with some of the problems we face today: climate change, air pollution, flooding and poor soil quality. If you've ever heard a politician talking about investing in technology to absorb carbon dioxide from the atmosphere and shouted "it's called a tree"; you're talking about a nature-based solution.

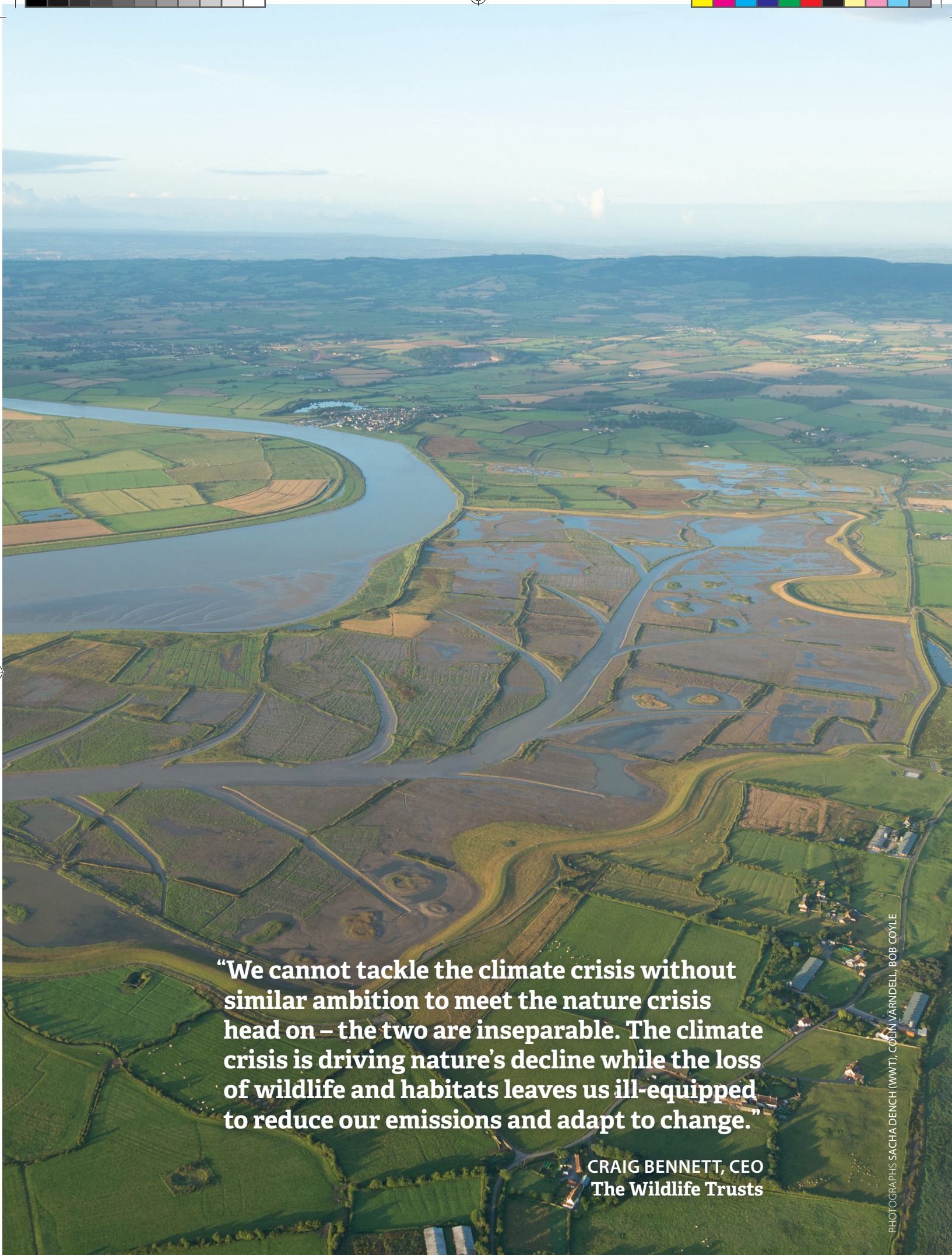
Somerset Wildlife Trust, along with other Wildlife Trusts and environmental organisations, is well placed to



Letting Nature Help

Changing the way we think about nature

"WWT Steart Marshes – one of the UK's largest wetland reserves, with hundreds of acres of saltmarsh already buffering homes and businesses from rising sea levels."



“We cannot tackle the climate crisis without similar ambition to meet the nature crisis head on – the two are inseparable. The climate crisis is driving nature’s decline while the loss of wildlife and habitats leaves us ill-equipped to reduce our emissions and adapt to change.”

**CRAIG BENNETT, CEO
The Wildlife Trusts**

PHOTOGRAPHS SACHA DENCH (WWT), COLIN VARNDELL, BOB COYLE





BLUE CARBON SOLUTIONS

Oceans absorb 20-35% of human-made carbon emissions every year and 'blue carbon' is stored in ocean plants and animals, and in mud and sediments.

Somerset has fabulously diverse coastal habitats, which we now know a lot more about thanks to completing the first scientific survey of Somerset's coast, thanks to our supporters' donations. We are now working with coastal communities to ensure these special carbon-capturing habitats can continue their work.

OCEAN SEDIMENTS

Ocean sediment habitats are formed over thousands of years when marine animals and phytoplankton die and sink to the seafloor and are incredibly important for marine wildlife. Storing huge amounts of carbon, means they are an important natural habitat in tackling climate change but dredging destroys the sediments, releasing carbon that otherwise may have been locked up for millennia, as well as destroying habitats and wildlife.

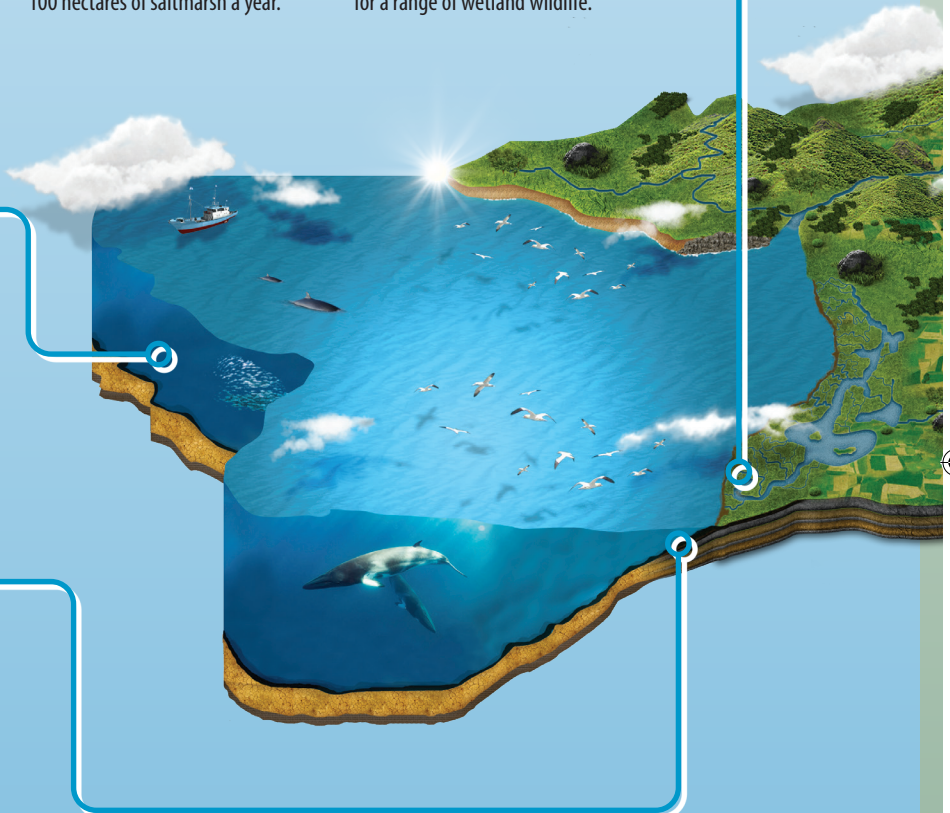
SEAGRASS

Seagrass beds are one of our most important natural solutions to the climate crisis. The marine equivalent of grasslands and meadows, they are home to amazing wildlife too. Seagrass captures carbon 35 times faster than tropical rainforests, and accounts for 10% of the ocean's total burial of carbon (despite covering less than 0.2% of the ocean floor). 92% of the UK's seagrass beds have already been lost so we act now to increase them.

SALTMARSHES

A hectare of saltmarsh can capture two tonnes of carbon a year and lock it into sediments for centuries. Drainage, development and rising sea levels all result in its loss and damage, releasing CO2 into the atmosphere and nationally we are losing nearly 100 hectares of saltmarsh a year.

Here in Somerset, WWT Steart Marshes is one of the UK's largest new working wetlands with hundreds of hectares of saltmarsh and freshwater buffering homes and businesses from rising sea levels and also providing rich habitat for a range of wetland wildlife.



use our skills and experience, at scale, to restore nature and deliver nature-based solutions (multiple benefits to some of society's problems) at the same time. In fact, this approach aligns neatly with our existing work to protect wildlife and habitats across the county to address catastrophic biodiversity and bioabundance decline; and increases our need to secure large-scale investment in restoring nature across the county. With our long history and unique knowledge of the county we are well placed to support and advise other organisations to achieve greater impacts together.

WHAT NATURE-BASED SOLUTIONS DO WE HAVE IN SOMERSET ALREADY?

Fully understanding what the natural environment of Somerset should be is difficult. Generational

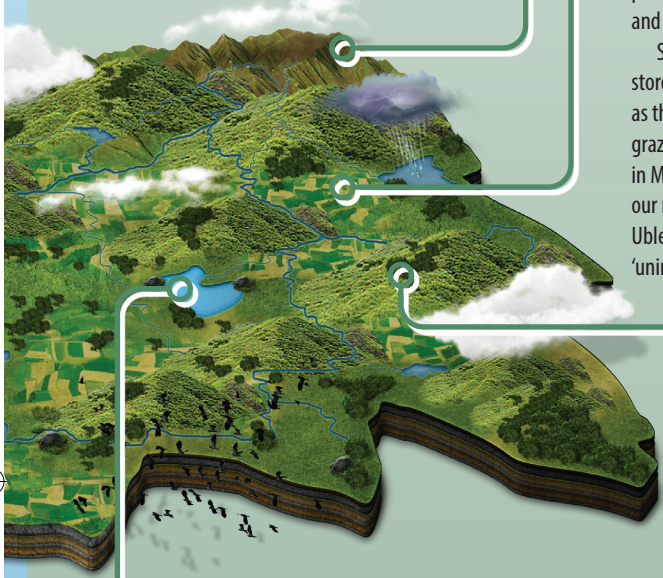
“Looking at things purely from a pure carbon capture perspective, Somerset's potential is huge.”





GREEN CARBON SOLUTIONS

Our habitats on land have a huge role to play in addressing climate change. Globally, plants have removed 25% of human-made carbon emissions, whilst our soils contain more carbon than is stored in those plants and the atmosphere combined!



GLORIOUS GRASSLANDS

UK grasslands store two billion tonnes of carbon in their soils, but disturbance of the soils releases carbon. Between 1990-2006, conversion from grassland to arable production released 14 million tonnes of CO2 and little 'unimproved' grassland remains. Species-rich grasslands are huge carbon stores and when managed carefully, as through herb-rich leys and sensitive grazing. We are working with landowners in Mendip to create more herbal leys, and our nature reserves at Velvet Bottom and Ubley Warren are examples of carbon storing 'unimproved' grasslands in Somerset.

POWERFUL PEATLANDS

UK peatlands store an amazing 3.2 billion tonnes of carbon and globally cover just 3% of the earth's surface. Healthy (wet) peatlands store more carbon than any other habitat but damaged ones (included those drained) are a major source of carbon emissions. Healthy peatlands also help to alleviate flooding by slowing the flow of water and filter water, making it cleaner and support rare plants like sundew on the mire at our Westhay reserve. Currently 80% of the UK's peatlands (94% of UK lowland peatlands, like those found across the Somerset Levels and Moors) are damaged (dry) and hence release 23 million tonnes of carbon dioxide a year.

WONDERFUL WOODLANDS

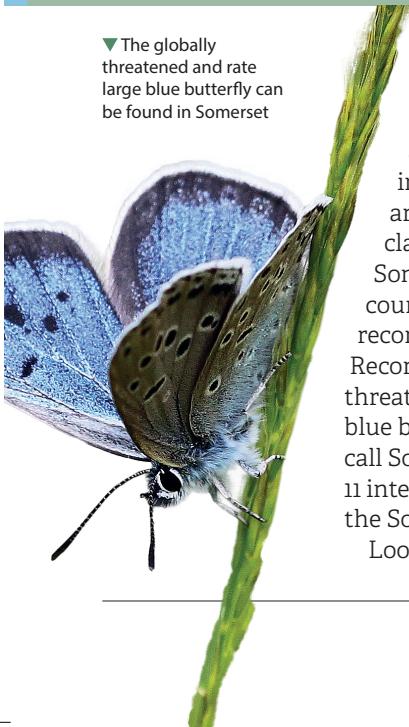
Woodlands cover approximately 13% of the UK and are estimated to soak up around 21 million tonnes of carbon dioxide a year. Lesser known is that whilst trees and other plants lock up carbon, nearly three times as much is stored in the woodland soils that support them. In addition, wet woodlands slow the flow of water downstream after extreme rain events helping to reduce flooding. Traditional management such as that we practice on our woodland reserves is important, but has declined significantly nationally so many woodlands have either been left unmanaged or managed for timber, leading to structural changes within our wooded areas.

WILD WETLANDS

Wetlands can accumulate carbon for centuries, but drainage for agriculture and industrial-scale peat-cutting has reduced or destroyed many wetlands and areas of raised bog, fen and reedbed. Good management is critical – it can take decades for restored

wetlands to be able to draw down carbon at the same rate as natural wetlands. Restricting abstraction (the removal of water), as well as projects to restore wetlands as in the Avalon Marshes are important nature-based solutions to climate change.

▼ The globally threatened and rare large blue butterfly can be found in Somerset



amnesia, shifting baselines (the bar being lowered for expectations) and inadequate historical data (Jones, Turvey, Massimino and Papworth, 2020) all leave us with an incomplete picture. Currently, however, around 14% of Somerset's land cover is classified as being in a semi-natural condition. Somerset is also one of the most biodiverse counties in the country, with 13,333 species recorded through Somerset Environmental Records Centre (most likely to be higher). Globally threatened and rare species including the large blue butterfly and the greater horseshoe bat call Somerset home, and the county includes 11 internationally designated areas including the Somerset Levels and the Severn Estuary. Looking at things purely from a pure carbon

capture perspective, Somerset's potential is huge. Our grassland nature reserves for example cover 252 hectares, capable of storing 554 tonnes of carbon per year. The species-rich grassland reserves managed by the Trust such as Chancellor's Farm and Yoxter Ranges, Lots Grassland and Tealham and Tadham alone have great carbon capture and storage capacity, as well as serving to connect up a larger network of CO2 absorbing grasslands across the county. And that's over and above providing habitats for a myriad of invertebrates and other wildlife. Somerset is also home to WWT Steart Marshes – one of the UK's largest wetland reserves, with hundreds of acres of saltmarsh already buffering homes and businesses from rising sea levels. Somerset Wildlife Trust's peatland reserves are

“The way we manage land across the county needs to make a seismic shift from where it is currently.”

already storing a huge amount of carbon, so it is vital that we keep them wet and healthy allowing them to continue providing these carbon sinks. And given 73% of Somerset is farmed, there is a huge opportunity to support farmers to ensure that hedgerows and field margins are also making an even greater contribution.

Add this to our ancient woodlands and coastal habitats, there is an enormous amount we are contributing to the national effort, simply by ensuring that we keep what we already have in good health and continue to work with others to improve surrounding land too – something that we have been doing across the county for over 50 years.

To meet the challenges of the climate and ecological crises, we need to do more together with landowners, communities, businesses and other organisations. The way we manage land across the county needs to make a seismic shift from where it is currently. We need to put nature-based solutions at the heart of our forward planning and investment programmes. We need to put nature back in charge.

Somerset Wildlife Trust has a key role to play in this work; providing strategic support and practical advice to others to achieve greater impacts for nature, and empowering landowners, communities and others to take action – our utopian tipping point being that we will have one in four people taking positive action for nature in the county.

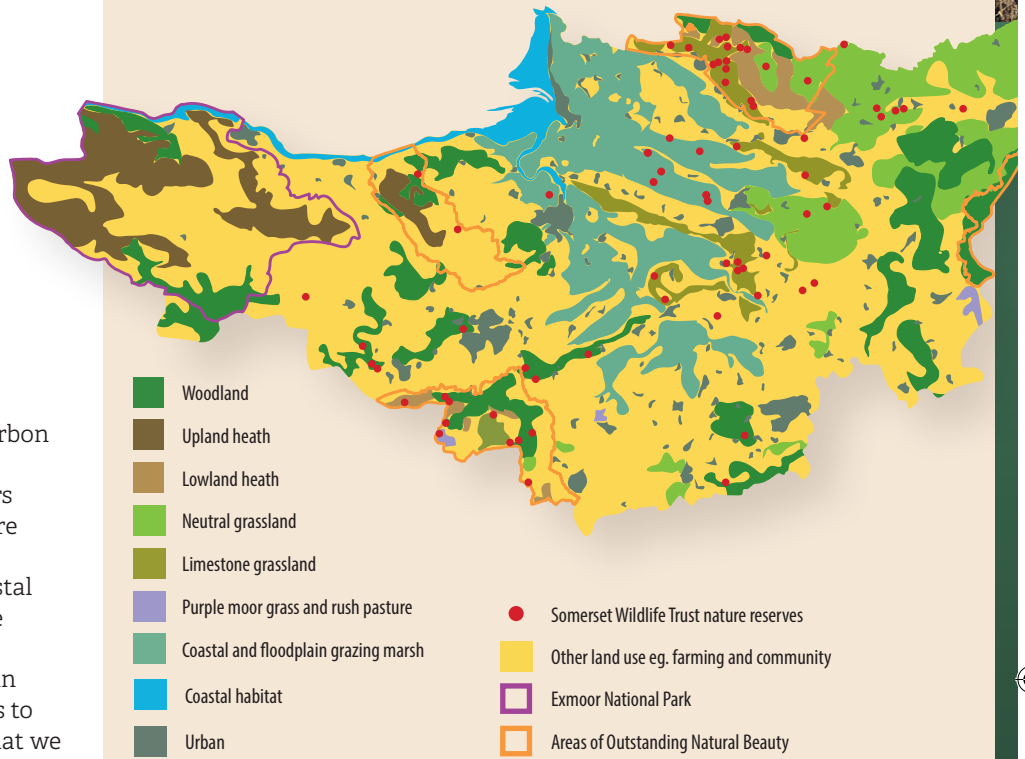
BIGGER, BETTER, MORE JOINED UP

Quite conveniently, The Wildlife Trusts have already developed what we think is the most critical blueprint upon which a core set of nature-based solutions can be delivered at the pace and scale required to meet our carbon targets – our Nature Recovery Network approach.

Habitats are fragmented, there isn't enough space for wildlife to move around and pockets of disparate species 'cul de sacs' exist – a key reason that many of our plants and animals are declining.

Somerset's habitats and our nature reserves

We produced a pioneering map for Somerset in 2019-20 showing existing core habitats, including on our nature reserves, and have also now identified areas to target to expand the network (not shown) to support nature's recovery.



Somerset Wildlife Trust is leading the development of a nature recovery plan working with a wide range of partners and landowners to map out opportunities to invest in and restore nature at scale. We are using cutting-edge science, data and mapping techniques

The size of the prize

37% Restoring our natural systems could provide 37% of the CO2 mitigation needed by 2030 to meet the Paris Agreement. Possible contribution of the UK natural systems to reducing CO2 emissions.

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.

PHOTOGRAPHS NICK UPTON (2020VISION)



What about Rewilding?

The concept of rewilding has been around for a number of years, though within the last few it has created wide debate across the sector and beyond. There is much confusion about its definition so perhaps it has a little way to go on its PR journey with the wider public. Some associate the term with tree-planting initiatives, others to the re-introduction of long forgotten native species such as beavers or top predators such as wolves or lynx.

Consider rewilding at a much more basic level: rewilding is simply a way of managing land to restore natural processes that allow nature to recover by itself – a more hands off approach that puts nature back in charge.

Rewilding consists of two key elements:

1 Setting aside of large areas of land for nature to restore the natural processes within, then ensuring that these habitats are connected to other high functioning habitats so species can move across the landscape – essentially more land becoming part of the wider Nature Recovery Network.

Species reintroductions sometimes are part of this, to help restore nature processes of an area. For example, beavers are nature's water engineers and bison possess unique grazing skills.

2 Natural regeneration, for example, where woodlands are allowed to grow, expand and increase their quality from existing tree stock. Such an approach improves resistance to disease and helps wildlife populations expand effectively.

Successful rewilding requires species being present in the wider landscape to colonise newly regenerated areas and that's where our nature reserves come in. They are habitat-rich sites supporting a wide range of wildlife which with the right conditions nearby will spread out into the wider county.

Our work to manage and protect vulnerable species and habitats over more than 50 years means many species continue to exist in Somerset that we might otherwise have lost, but to store carbon and for nature to recover, more land across the county will need to be managed using natural solutions.



to identify and 'knit' together core areas of ecologically functioning habitats and ecosystems, and buffer and link these across Somerset.

Our nature reserves, local wildlife sites and SSSIs all provide species-rich habitats and, linked to corridors or smaller 'stepping stones' of similarly species-rich habitat, allow plants and animals to not only thrive and spread, but also be more adaptable to change. These connections create a Nature Recovery Network map, which will link to the wider national map.

The Environment Bill passing through Parliament (delayed due to coronavirus) will require Local Authorities to publish these maps, which would identify areas where the greatest benefit for wildlife and people can be achieved. Over time they will be instrumental in helping tackle some of the big challenges ahead.

Imagine new areas of flower-rich meadow creating corridors for bees and butterflies, or new areas of hedgerow, woodland and wetland not just providing a home to wildlife but capturing carbon, improving water quality and helping protect landscapes from flooding and importantly all of this providing huge benefits to the local communities where people live.

But we need strong new laws, including the

▲▲ Teal and wigeon mass take-off from frozen roost

▲ Common snipe make their home in marshes, wet grasslands and moorlands

Environment Act, and local commitment to action from everyone including local authorities, businesses, land owners and communities, to turn nature's recovery from an aspiration to a reality – a real nature-based solution that the entire country could get behind. Imagine what would happen if farmers were paid to provide a wide range of public goods, rather than being paid for how much land they own? Imagine if the 250,000 miles of road verges in the UK supported nature and the 430,000 hectares of gardens in the UK were all supporting abundant wildlife. ●



What can you do to give nature-based-solutions a boost? Can you let a patch of your garden go wild? Find ideas here somersetwildlife.org/get-involved/at-home

somersetwildlife.org/get-involved/at-home

Or could you take Action for Insects? Download a free guide here somersetwildlife.org/what-we-do/restore-somersets-nature/campaign-nature/action-insects

Watch this space for more details of how we will be supporting you more with ideas for you and your communities.