

Invest in the Pumlumon Project



Carbon store. Water tank. Wildlife haven.

Q: WHAT IS THE PUMLUMON PROJECT?

A pioneering, science-based project to revive the ecology and economy of the Welsh uplands

Imagine finding a whole new way of living in harmony with nature.

A way that gives us more of the things we need – viable local economies, beautiful landscapes, abundant wildlife, clean water, carbon storage; and less of the things we don't – urban flooding, species decline, soil erosion, faltering rural businesses.

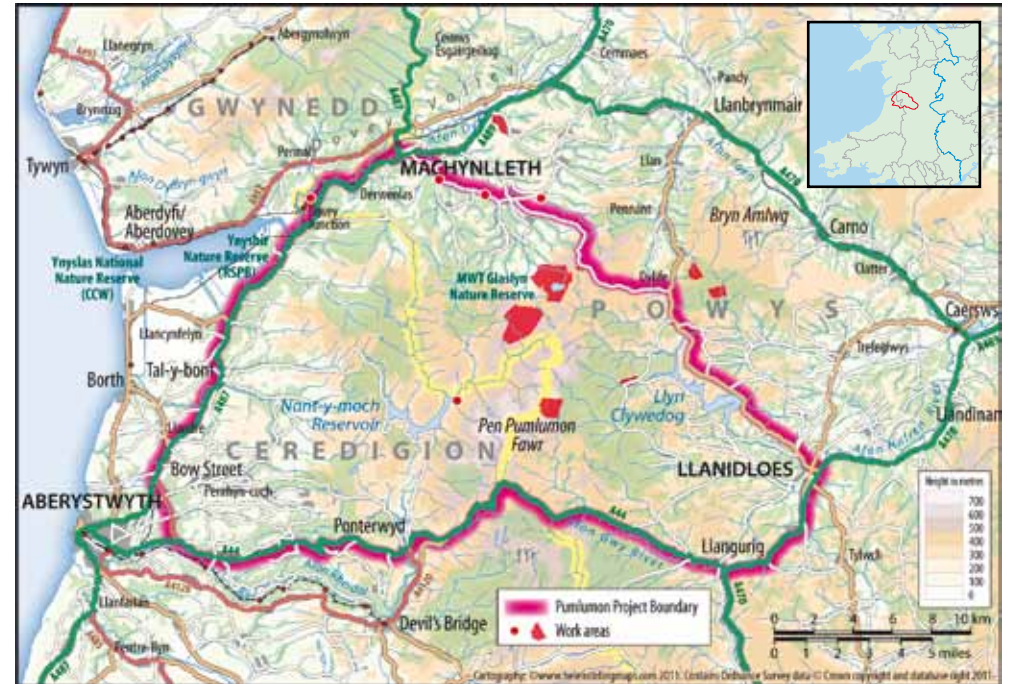
Established in 2007, the Pumlumon Project is a radical rethink of how the landscapes of upland Britain could work. Across 150 square miles of the Cambrian Mountains, we're pioneering an upland economy built around wildlife, ecology and long-term sustainability.

We've successfully piloted our ideas over five years and 500 hectares at an average cost of £265 per hectare per year. We are now inviting companies, organisations and individuals to help us restore the remaining project area over ten years. Our method is simple: if we can help local farmers, foresters and tourism businesses to do things a little differently, then over time the whole landscape comes back to life. And once that happens, the benefits extend far outside the project area.

This is a new way of thinking – of working with nature, rather than against it. Please help us to make it a reality.

Restoring the source of the Severn isn't just about returning lost wildlife. It's about rebuilding local economies and living more sustainably. Finding a better way for people and nature to get along, hundreds of years into the future.

Chris Packham



Named after Pumlumon mountain (centre), the project area is the size of Birmingham and includes the sources of the rivers Severn, Wye and Rheidol. We've tested our science and methods in our pilot areas (red). We now need the resources to extend ecological land management across the entire area. Success would reduce the effects of flooding on huge numbers of farms, homes and businesses, transform the local economy, safeguard vast stores of carbon, and bring back vanished wildlife.

The Pumlumon Project is a flagship Living Landscape project of the Royal Society of Wildlife Trusts. It is led by the Montgomeryshire Wildlife Trust and supported by the Welsh Government, Natural Resources Wales, The Crown Estate, Welsh Water, Statkraft, Biffa and local businesses and landowners.



PAUL GETTY JNR CHARITABLE TRUST

thewaterloofoundation



go Pumlumon Living Landscapes Project

Biffaward Building Communities. Transforming Lives.



A: A RURAL ECONOMY THAT ADDS UP

The project offers a better way to manage uplands, centred on creating a web of positive outcomes for wildlife and people

Thriving local economies

Businesses working with nature are less likely to be affected by regional or global shocks

Reduced flooding

Healthier uplands act as a sponge for the towns and cities downstream, buffering and absorbing the runoff which causes flooding

Carbon storage

Rewetted peat bogs keep huge amounts of carbon locked up, and add more every year

Expanded tourism

If the countryside becomes a nicer place, more people will want to visit it

Sustainable grazing

A better mix of grazing animals creates a better mix of habitat, enhancing biodiversity

Reconnected habitats

For natural ecosystems to re-establish, we need a landscape which wildlife can move through

Returning wildlife

Plants and animals driven to the margins can become abundant once more

Recreated habitats

Bringing back the woods and wetlands creates a landscape more able to withstand the impact of climate change

ELEMENT 1: CARBON STORAGE

Pumlumon offers an enormous opportunity to help reduce the UK's net carbon dioxide emissions



Restoring the natural action of peat bogs is as simple as blocking the drains which are drying them out

Peatlands are the UK's biggest store of carbon. If just five per cent of this habitat were to be lost through drainage and erosion, the carbon released would equal the UK's total annual emissions caused by fossil fuels.

Like many upland areas, Pumlumon holds vast

reserves of peat. In the 1950s and 60s, much of it was drained in a largely unsuccessful attempt to improve grazing. This degraded wildlife habitats and, as the drying peat oxidised, released large amounts of stored carbon into the atmosphere.

We now know we can reduce these emissions by

blocking the drainage ditches. As the bogs become wet again the mosses start to grow, absorbing carbon each summer and locking it away as new peat. At the same time, the existing stores of peat are protected from further erosion, and species marginalised by the original drainage can return.

How we are bringing the peat bogs back to life

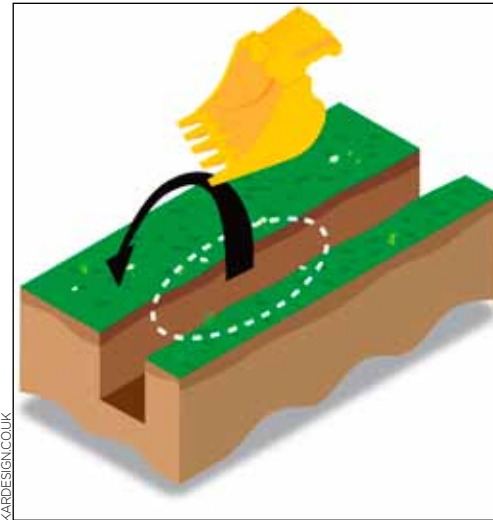
Work at Rhosygarreg shows that rewetting the peat creates significant carbon benefits at modest cost

The Pumlumon area has the potential to absorb and store huge amounts of carbon at a very modest cost. At Rhosygarreg we blocked 11km (6.8 miles) of ditches, restoring 105ha of peat bog, and safeguarding 82,500 tonnes of carbon. The cost was around £210/ha. The next phase involves a much larger area, blocking 500 ditches.

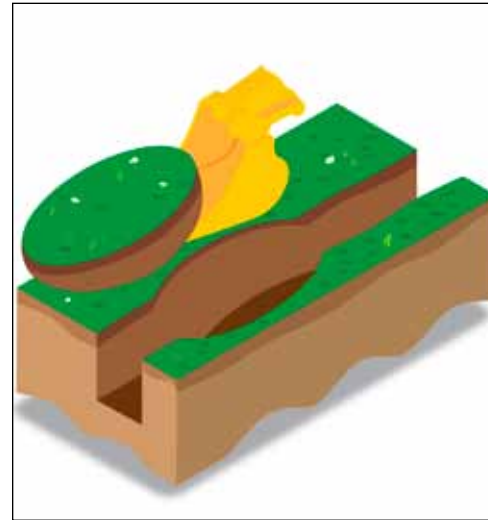
Recent research has shown that a healthy, growing sphagnum moss bog can absorb up to 0.5 tonnes of carbon per hectare per year, whereas the same area of damaged or drained bogs can release 2-5 tonnes. Joseph Holden of the Earth and Biosphere Institute at the University of Leeds states that peatlands have a long-term ability to absorb and store carbon at 12–23 grammes of carbon per square metre per year. This gives them, he says, “a major role in moderating atmospheric CO₂ concentrations”. On the Pumlumon Pilot projects we estimate we are already preventing the emission of 775 tonnes of CO₂ each year, and absorbing a further 572 tonnes, making a total contribution to the UK’s carbon balance of 1,347 tonnes CO₂ each year. If, as a result of your investment, we can rewet all the project area’s 1,543 hectares of deep peat soils, the contribution could be ten times greater.



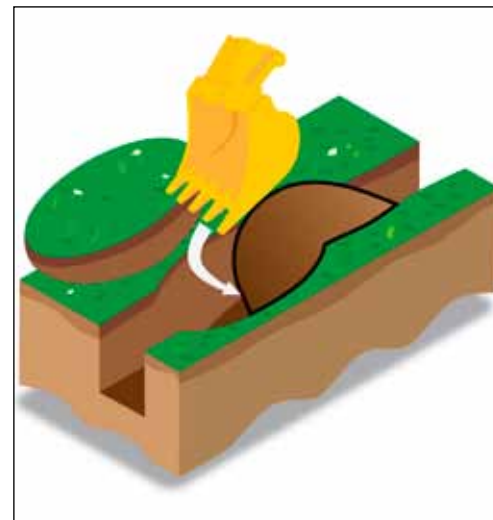
How to block a peatland drainage ditch



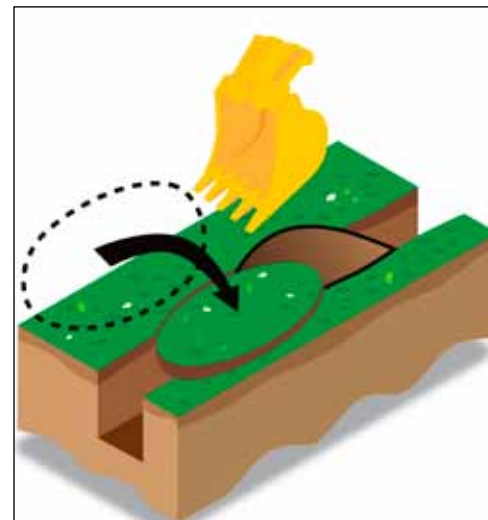
Using an earth mover bucket, take off the sides and a little of the base of the ditch channel



Put the scooped-out plug on one side, keeping any vegetation as undamaged as possible



Use the bucket to break up the excavated area, pushing softened peat into the downstream end



Place vegetation on top of the newly-formed peat bund, and into the bottom of the ditch

SUPPORTING THIS PROJECT COULD SUIT...

- Energy companies (fossil fuels)
- Road haulage companies
- Airlines
- Heavy industry
- Extractive industry

The whole world benefits from reducing carbon emissions which contribute to global warming



ELEMENT 2: RECONNECTING HABITATS

Climate change means plants and animals trapped in a fragmented landscape need green highways to relocate

New woodland being allowed to regenerate naturally at Blaeneinion. Over time, it will bridge the high and low ground



It is predicted that by 2050 there will be a 2°C rise in global temperature, shifting the natural range of some species northwards by more than 150 miles and/or nearly 1000ft higher in altitude. In previous times – for example after ice ages – plants and animals migrated to new climate space along

natural corridors. But in today's fragmented landscapes many species will be trapped in habitats which can no longer support them. The results could be devastating for biodiversity.

Biodiversity – the sum total of plants and animals, with all their interactions – is our life support

system. Its importance is recognised by the Worldwide Convention on Biological Diversity, signed by 153 countries including the UK. We therefore need to restore connections between wildlife havens at a landscape scale – for example, by linking lowland and upland habitats.

How we are putting the landscape back together

Our pilots have established costs and feasibility. Now the land management plan is ready to be rolled out

The Pumlumon Project area holds over 9,000ha of key habitats including river valleys, semi-natural woodland, coniferous plantations, species-rich grassland, heather moorland and blanket bog. By restoring existing habitats and creating new ones we don't just build corridors and connections that allow animals and plants to migrate through the landscape; we also make the area more enjoyable and interesting for people through the increase in wildlife and more varied scenery.

Our recent pilot projects have restored over 250ha of peatlands and acid grassland, created over 2km (1.2 miles) of hedgerow, and established 1ha of upland woodland. We aim to continue this process across the rest of the project area.

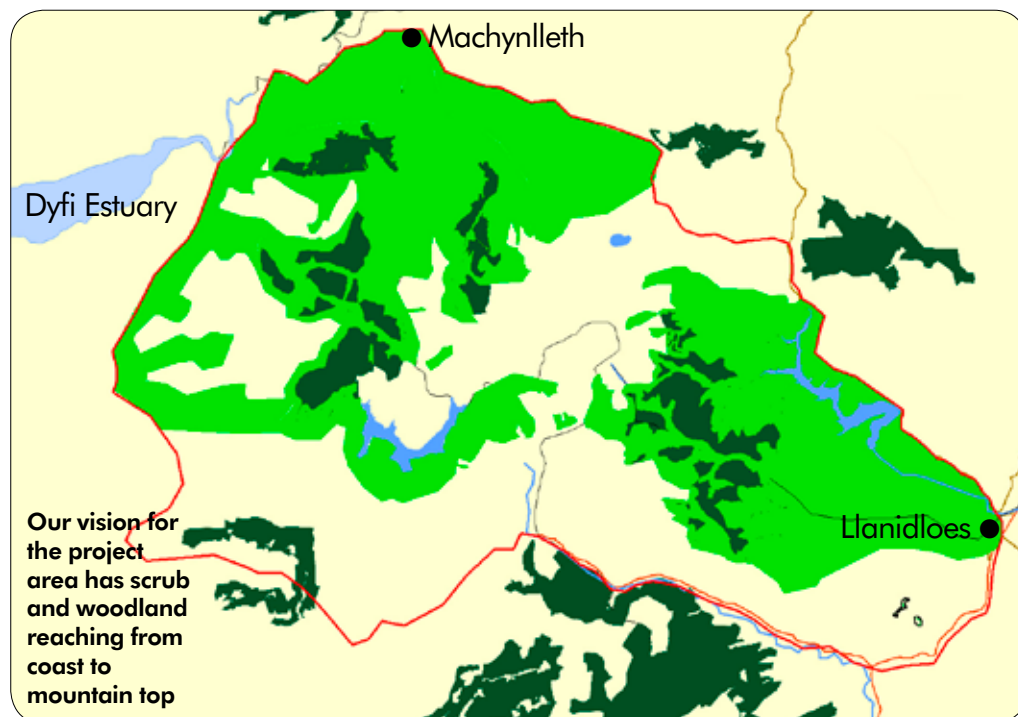
Planned habitat recreation

- Fencing out 15km (9.3 miles) of species-rich hedgerows
- Restoring or re-establishing 20 km (12.4 miles) of hedgerows
- Fencing out 5km (3.1 miles) of habitat along the banks of streams
- Creating 60ha of scrub habitat and managing it carefully into the future
- Creating 72ha of regenerated woodland or tree planting
- Purchasing land to create a key wildlife corridor
- Purchasing a neighbouring estate to restore heather moorland and increase the populations of ground-nesting birds



A well-made hedgerow can last for hundreds of years

DAVID RE AND



Key

■ Existing or planned areas of scrub and woodland

■ Existing and future conifer plantation

■ Cardigan Bay

■ Inland water body

■ Project boundary

SUPPORTING THIS PROJECT COULD SUIT...

- Everybody interested in ensuring the survival of wildlife species
- Nature conservation organisations (general and species-specific)
- Tourism businesses
- Farmers (through re-designed agri-environment schemes)
- Statutory bodies with biodiversity targets



ELEMENT 3: STORING FLOOD WATER

At least three million people depend on water which falls as rain in the Pumlumon Project area

After



A peatland
restored to its
function as a
natural sponge

It is now widely accepted that there is a direct link between upland land management and the severity of lowland flooding. Previous studies have shown how strategic tree planting, restoring hedgerows, fencing out watercourses and reducing stocking levels all help to increase the permeability

of upland soils, reducing rapid run-off during heavy rain.

At 752m, Pumlumon is the highest point of the Cambrian Mountains, which are themselves the largest watershed in Wales. The Pumlumon Project area consists of more than 3,700ha of

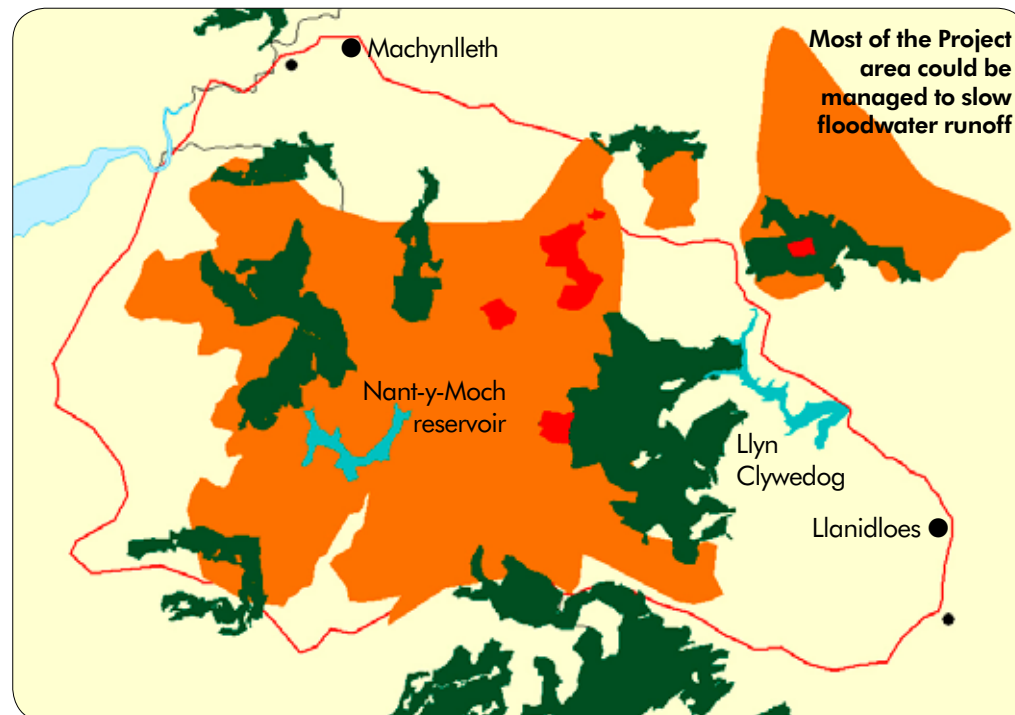
hydrologically active habitats. These include wet heath, raised bog, blanket mire, valley mire, and wet woodland. Small wonder that Pumlumon is the source of eight major river systems: the Severn, Wye, Rheidol, Ystwyth, Elan, Teifi, Tywi and Irton. Three million people depend upon them for water.

How we are increasing upland storage capacity

Small changes to the way upland areas are farmed have huge benefits for communities downstream

Our ditch blocking work (p4) affected the water-holding capability of a 1,013ha catchment area, raising the water table by an average five centimetres and retaining an extra 155 million litres. We also improved the permeability of the soil by changing grazing regimes, reducing stocking densities in some areas, and planting broadleaf trees. Our aim now is to implement this management regime across the remaining catchment (see map).

If a substantial proportion of the project area receives appropriate management, it will help deliver some of the objectives and targets for several key policy areas, including the EU Water Framework Directive and the Flood Water Directive.



Key

■ Area of potential water storage

■ Forested area

■ Pilot project areas

■ Inland water body

— Project boundary

SUPPORTING THIS PROJECT COULD SUIT...

- At-risk households in the downstream catchment
- Natural Resources Wales and local authorities
- Water companies
- Insurance companies
- Government (and the taxpayer)



ELEMENT 4: BRINGING BACK WILDLIFE

Restoring the area's wonderful mix of plants and animals can only work within the context of a sustainable local economy



Ospreys had been extinct in Wales for several centuries. But now they are back at Cors Dyfi reserve

PETER CAINS

The heart of the Pumlumon Project is an ambitious plan to restore the area's wildlife, and where appropriate bring back species which used to be plentiful in the Welsh uplands. Wildlife losses, driven largely by land management and agricultural improvements, have been a feature of

the late 20th century, and they continue today. Now the emerging threat of climate change is having its own impact on species populations.

The losses of the past 60 years are an ecological catastrophe, but they can be reversed if, as a society, we consider nature when we organise our

need for land and food. In Pumlumon, one example is to restore the kind of grazing which moulded the uplands for thousands of years. Bringing cattle back to the hills would restore the diversity of the grassland, providing more and better niches for species.

How we are bringing nature back from the brink

The key is to understand a habitat's historical makeup, and manage the landscape to recreate it

We know that simple changes to land management have big and often rapid effects. Just four years after we began grazing cattle on our Nature Reserve at Glaslyn in the centre of the project area we have seen heather return to a species-poor grassland. With the vegetation change come magical species such as the hen harrier, one of our rarest birds of prey.

The upland bog areas need a different kind of enlightened management. Past drainage impacted many species not found in any other environment, for example the carnivorous sundew plant and the peat-producing sphagnum mosses which form the basis of the entire habitat. Specialist animals included adder, common lizard, black darter dragonfly and the familiar red grouse. We have already

begun healing the damage through ditch blocking (see p4) but there is much more left to do. Nevertheless after only two years we are seeing a resurgence of red grouse numbers.

Our neighbouring reserve at Llyn Bugeilyn is the home of the elusive black-finned brown trout. Ditches were cut into the bogs around this lake too. In 2011 we blocked them to create a string of new pools and wetland areas. Since then we've seen a reappearance of amphibians, and signs of water voles and otters. Both of these species are commonly thought of as lowland animals but they are equally at home in the uplands if we can create the conditions.

At our Cors Dyfi reserve, a former conifer plantation, we removed the non-native pine

trees in 1995 and restored the land to wet woodland and bog. The wildlife responded so well that in 2007 we installed an osprey nesting platform. The birds were already using the reserve as a migration stopover. In 2011 they bred there for the first time in over 400 years.

Although these techniques were developed on nature reserves, to make a lasting difference to the wildlife of our uplands we must work in collaboration with the farmers who manage this landscape. Together we must fight for government policy reform and build new markets to support sustainable farming in a wildlife-rich landscape. If we can do this we will have a real chance to rewet upland bogs, remove conifer plantations, plant trees and bring back cattle grazing.



SUPPORTING THIS PROJECT COULD SUIT...

- National government
- Everybody interested in ensuring the survival of wildlife species
- Nature conservation organisations (general and species-specific)
- Tourism businesses
- Visitor attractions
- Farmers (through diversification)



ELEMENT 5: CHANGING GRAZING PATTERNS

Ecologically sensitive grazing doesn't just enhance the landscape and restore wildlife; it can be more profitable for farmers

Welsh White cattle, a traditional breed, are proving to be a good business for established farmers in the project area



MATTHEW ROBERTS

Over thousands of years, wild and domestic grazing animals have shaped the Welsh countryside, and this is particularly true in the uplands. Today the free-ranging animals are gone, and the vast majority of upland livestock is sheep. Unfortunately their grazing action in these areas

has created vast areas of coarse, species-poor turf – a habitat that supports very little wildlife. As stocking densities have increased over recent decades the underlying soil structure has compacted, so that rainwater flows quickly downstream rather than percolating slowly through

the soil. New evidence shows that if cattle were used instead of sheep, at moderate intensities, and at the appropriate time of year, these problems could be reduced. The range of plant species in the turf would increase significantly, and the cattle's hooves would help break up the soil pans.

How mixed grazing is improving the landscape

Our pilot project is joining the dots between conservation grazing and niche market beef

Unfortunately upland beef production is less profitable than it was, and few farmers now keep cattle on their upland holdings. If cattle are to return in numbers that will restore the area's grassland landscapes, it needs to make business sense. To do this we need to properly value the slower-growing hill beefstock and the important ecological job they do.

Now in its fourth year, our pilot grazing project has shown that beef produced through conservation grazing is twice as profitable for upland farmers as conventional beef production in the uplands. We now aim to expand ecologically and economically sustainable beef production across 1000ha of the project area.

The extra value is created in part by a partnership between Wildlife Trusts Wales and

participating farmers. Over the past two years each of the Welsh Wildlife Trusts and their producer partners have formed a Wildlife Trust Wales Producer Group. Their aim is to promote conservation grade products through a Wales-wide scheme entitled 'Wildlife Trust Wales Approved Products'. Besides Welsh White beef and organic lamb the partnership has also yielded conservation grade honey, charcoal, hay, wildflower meadow seed mix, kitchen products, garden furniture and ornaments, as well as timber products such as stools, picnic tables, benches and gates.

New entrants to the scheme have their products assessed against stringent criteria. If they are certified they can use the Wildlife Trusts logo, with its associated environmental credentials, when selling their products.



RUPERT FARNSWORTH

Wildlife Trusts Wales have set up a scheme to promote conservation grade Welsh White beef and many other products



Poor grassland

The overgrazed slopes at Rhosygarreg in 2008. Contrary to what visitors might think, this is not the natural landscape



Good grassland

More mixed grazing can restore species-rich grassland such as this alpine clubmoss and bent grass sward on Pumlumon itself

SUPPORTING THIS PROJECT COULD SUIT...

- Local producer group
- Local butchers and abattoirs
- Farmers (through re-designed agri-environment schemes)
- Nature conservation organisations (general and species-specific)



ELEMENT 6: RECREATING HABITATS

Even where large areas of strategically important habitat have been lost, we can put them back. It just takes time

Tree planting at Maesnant
– the first time these
slopes have seen trees in
many decades



As mentioned on page 6, by 2050 we expect to see a 2°C rise in average global temperature compared with 1990. This will generate more extreme weather including storms, floods and summer drought. This changed climate will be bad news for species such as ancient woodland flowers

and small invertebrates, which cannot move across open ground. Reconnecting habitats will help these species and many others keep in touch with their suitable climate niche. We can achieve this by protecting and enhancing existing habitat corridors but in some cases the need to bridge gaps

between habitats will involve recreating habitats from scratch. Across the project area we plan to create a network of wetlands, woodland and species-rich grassland, connected by a latticework of rivers, streams, hedgerows and grass verges: a landscape-scale highway for wildlife.

The six key habitats we plan to recreate

So far we've altered an area equal to 115 football pitches. But our future plans are far more extensive

Recreating habitat is largely about allowing natural processes to happen again. We've begun work on upland gullies but with the right funding there's a lot more to do.

Gullies

To build links between the wooded foothills of the Cambrian mountains and the heathland on the tops, we have removed grazing from 115ha of upland gully. These areas quickly become colonized by trees and scrub, and will soon provide a whole range of additional niches for heathland and woodland species.

Farm hedgerows

It's entirely possible to have productive farmland which is also easy for wildlife to live in

and move through. We will create corridors for wildlife by restoring and creating new farm hedgerows. These linear habitats will benefit species such as yellowhammer, pipistrelle bat and possibly even dormice. They'll also improve soil condition and reduce local surface water runoff during heavy rain.

Rivers and streams

The Pumlumon project area is crisscrossed by rivers and streams. Our plan is to fence out large areas of bank to create wildlife corridors. The buffering effect of this new vegetation will improve river water quality, benefiting the charismatic salmon and the elusive otter. It will also reduce the cost of clean drinking water for towns and cities downstream.

Woodland

We will create new scrub and woodland in two ways: through tree planting where no natural option exists, and by allowing natural regeneration through fencing and temporary grazing exclusion.

Bogs

The possible drying effect of climate change is a significant threat to our Welsh upland bogs. By blocking ditches and restoring eroded peat, we will rewet damaged bogs, making them more robust to face a difficult future.

Wetlands

We plan to repair our wetland hydrology, and remove both point source and diffuse pollution.



SUPPORTING THIS PROJECT COULD SUIT...

- Everybody interested in ensuring the survival of wildlife species
- Nature conservation organisations (general and species-specific)
- Tourism businesses
- Farmers (through re-designed agri-environment schemes)
- Statutory bodies with biodiversity targets



ELEMENT 7: DEVELOPING GREEN TOURISM

Underpinning the Pumlumon Project is a simple expectation: a healthy, diverse, wildlife-rich landscape attracts visitors



For many forms of low-impact tourism, the wilder the landscape the better

We expect that the work we are doing in the Pumlumon Project will also benefit local people's livelihoods, health and well-being.

For example, because storing carbon, reducing flooding and improving wildlife benefits the whole of society, we anticipate that farmers and other

landowners will be paid for the new ways they manage the land. Another consequence is to encourage (or directly produce) new sustainable tourism products such as walking, kayaking, mountain biking and wildlife watching.

This is the key to increasing visitor spend and

lengthening the tourism season. All visitor surveys show that people who already visit the area for a holiday or day trip do so to experience the landscape, scenery and wildlife – in other words to enjoy Pumlumon's natural assets. Our work will only increase this attraction.

How ecological restoration is boosting visitors

The wildlife effect alone is dramatic, with 35,000 new visitors coming to watch one osprey family

Working with the Dyfi Biosphere Tourism Group we have developed a green tourism plan for the area. It includes eco bunkhouses and better access to (and interpretation of) the natural heritage, including one or more new visitor centres.

New facilities will encourage sustainable use of the natural environment, with minimal impacts to wildlife, habitats and ground water. Visitors will be able to explore the area using public transport rather than cars.

The first such development is a new, year-round visitor attraction on lowland wetland at Cors Dyfi reserve, building on the success of the Dyfi Osprey Project. The ospreys, which feature on webcams during the breeding season, have already attracted 35,000 extra

visits to the area, bringing in an estimated £350,000 a year locally. The visitor centre will include a new observatory and space for educational and community activities.

Maesnant is seeing a new development to provide access to Nant-y-Moch reservoir for non-powered watersports. It will also encourage safe hillwalking in the wilder areas of the Pumlumon hills.

We have created a new audio trail linking an existing well-used viewpoint with our Glaslyn nature reserve, and with Bugeilyn where most of the project's current land management work is being carried out.

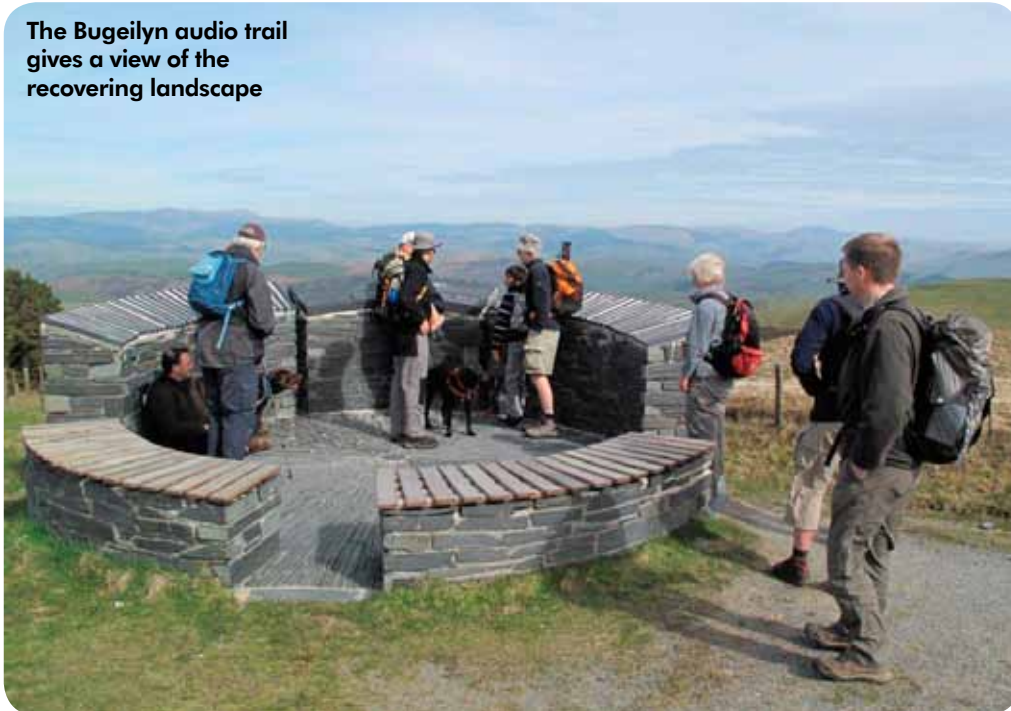
We are actively seeking to identify and invest in other new green tourism products and services.

Longer term projects

- Developing eco-friendly seasonal accommodation linked to a new working base for the Pumlumon Project.
- Expanding the audio trail and e-trail network to cover the whole area.
- Providing a new transport service using an eco-friendly vehicle, to link the main wildlife attractions in the Biosphere.

More strategically, we are helping raise the profile of Mid-Wales. The area has lost market share while other parts of Wales – Snowdonia for example – have benefited from National Park status and much higher marketing spend. If the Dyfi Biosphere (including Pumlumon) takes off as a niche 'green' tourism product, this could help redress the balance.

The Bugeilyn audio trail gives a view of the recovering landscape



The Dyfi Osprey Project webcams near Machynlleth have been a wild success



SUPPORTING THIS PROJECT COULD SUIT...

- Local accommodation providers, particular holiday parks
- Other visitor attractions, particularly if we can work together on promotion and joint ticketing
- Companies offering green tourism packages
- Universities and research organisations looking for case studies or student research projects
- Natural Resources Wales
- Visit Wales
- Tourism partnerships
- Local authorities
- Transport providers



ELEMENT 8: INVOLVING COMMUNITIES

The ultimate measure of our success is whether local people share our aims and want to support our project

Volunteers building
a new walkway at
Cors Dyfi reserve



The Pumlumon Project can only succeed if enough local people want it to happen. We have persuaded many farmers and landowners to work with us. Tourism businesses are also keen on what we are doing, particularly with the Dyfi Osprey Project, but also across the wider landscape.

We have recruited a large number of local volunteers to work with us at our Cors Dyfi reserve and on our pilot projects. They help with ditch blocking, fencing, tree planting, surveying, species conservation work and talking to visitors at Cors Dyfi. All our people engagement work is strongly

bi-lingual and we make a particular effort to enthuse young people about wildlife in Welsh.

We train our volunteers, and the skills they acquire are particularly valuable to those seeking work. Some have gone on to part-time or full-time employment.

Local involvement in the Pumlumon Project

Our projects aim to make fostering a healthy environment part of everyone's life

We are also helping local groups and organisations to identify projects that can improve their local environment.

For example, we are currently working with the New Dyfi Fishing Association to improve a section of the River Dyfi by restoring damaged habitats, creating new ones and removing obstructions to migrating fish.

In 2013 we will hold an open day for farmers to demonstrate how they can save money and improve the water quality of the river by targeting the application of fertilizer and by improving the permeability of soils.

In the tourism sector, working with the Dyfi Biosphere, we have established a group of businesses keen to cooperate to produce new green tourism products and services.

We've also helped the Dyfi Biosphere's environmental education group to produce an activity pack for local schools, along with a programme of school visits to key wildlife sites. The pack targets younger age groups, to establish the links between a healthy, functioning environment and their own lives.



Our longer term goals for local communities

- Increase the number of people actively involved in conservation work by creating an area-based environmental task force.
- Identify the places where environmental enhancements will create the best return for wildlife.
- Create events and projects that make it easier for communities to get involved in enhancing their local environment.
- Identify the training needs of local people related to the project aims.
- Encourage a community connected to their natural environment and appreciative of how wildlife works for them.

SUPPORTING THIS PROJECT COULD SUIT...

- Local schools
- Local people, community organisations, clubs and societies
- Anglers
- Central and local Government social programmes
- National Health Service

“Farming isn't just about beef and sheep. It's making a living off your land, looking for opportunities – and the Pumlumon Project is offering them. Locking up carbon and holding the water back is just another way to farm the land. At the end of the day if someone pays you for it, that's farming. Same as turning a field over to a campsite.”

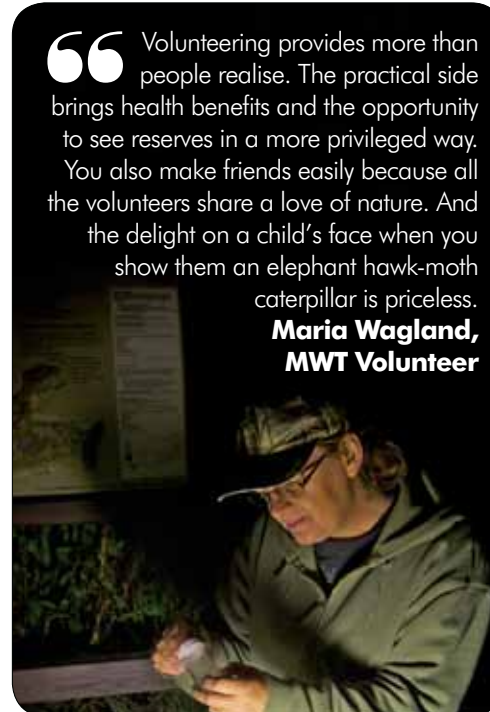
**Mike Lewis,
Pumlumon farmer**

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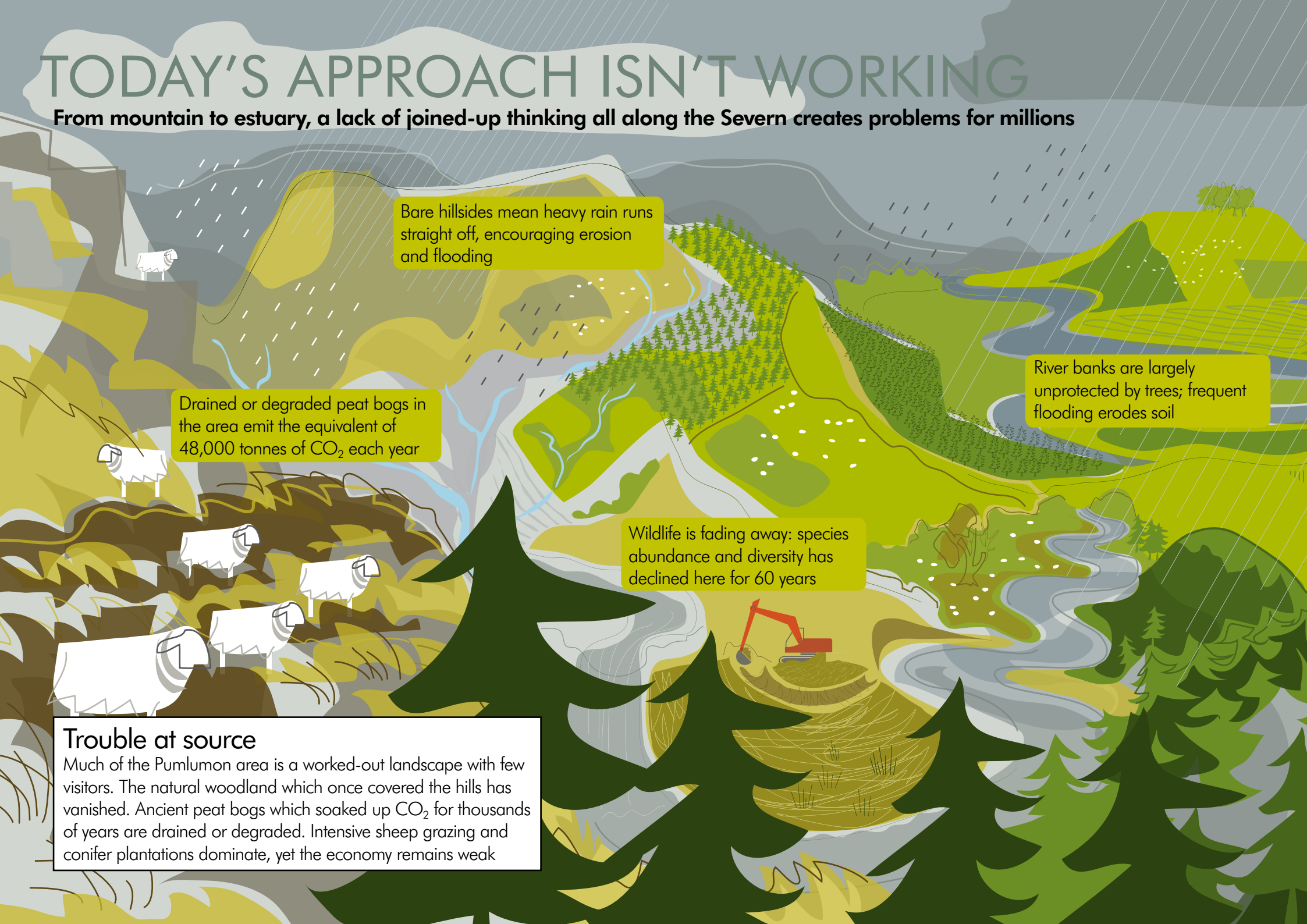
“Volunteering provides more than people realise. The practical side brings health benefits and the opportunity to see reserves in a more privileged way. You also make friends easily because all the volunteers share a love of nature. And the delight on a child's face when you show them an elephant hawk-moth caterpillar is priceless.”

**Maria Wagland,
MWT Volunteer**



TODAY'S APPROACH ISN'T WORKING

From mountain to estuary, a lack of joined-up thinking all along the Severn creates problems for millions



Bare hillsides mean heavy rain runs straight off, encouraging erosion and flooding

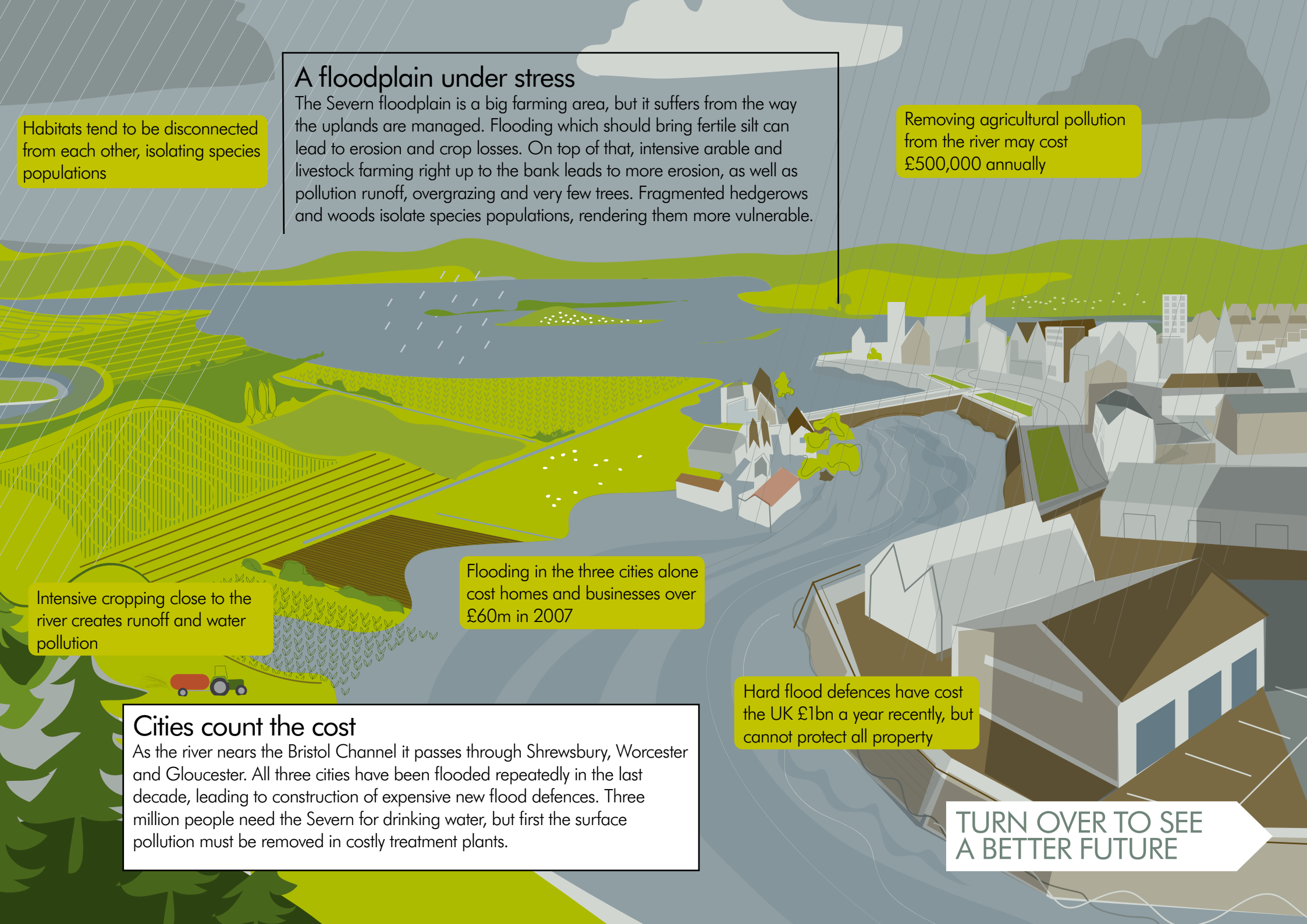
Drained or degraded peat bogs in the area emit the equivalent of 48,000 tonnes of CO₂ each year

River banks are largely unprotected by trees; frequent flooding erodes soil

Wildlife is fading away: species abundance and diversity has declined here for 60 years

Trouble at source

Much of the Pumlumon area is a worked-out landscape with few visitors. The natural woodland which once covered the hills has vanished. Ancient peat bogs which soaked up CO₂ for thousands of years are drained or degraded. Intensive sheep grazing and conifer plantations dominate, yet the economy remains weak



Habitats tend to be disconnected from each other, isolating species populations

A floodplain under stress

The Severn floodplain is a big farming area, but it suffers from the way the uplands are managed. Flooding which should bring fertile silt can lead to erosion and crop losses. On top of that, intensive arable and livestock farming right up to the bank leads to more erosion, as well as pollution runoff, overgrazing and very few trees. Fragmented hedgerows and woods isolate species populations, rendering them more vulnerable.

Removing agricultural pollution from the river may cost £500,000 annually

Intensive cropping close to the river creates runoff and water pollution

Flooding in the three cities alone cost homes and businesses over £60m in 2007

Hard flood defences have cost the UK £1bn a year recently, but cannot protect all property

Cities count the cost

As the river nears the Bristol Channel it passes through Shrewsbury, Worcester and Gloucester. All three cities have been flooded repeatedly in the last decade, leading to construction of expensive new flood defences. Three million people need the Severn for drinking water, but first the surface pollution must be removed in costly treatment plants.

TURN OVER TO SEE
A BETTER FUTURE

NATURE RESTORED: OUR VISION FOR 2025

A richer landscape means more wildlife, fewer floods, stronger, more diverse local economies – and a better view

New trees, heather and mosses now hold an extra 1.85 billion litres – over half a Lake Windermere

Restored peat bogs lock up 55,000 tonnes of CO₂ a year, worth £1.5m a year to local businesses

Tree shelter belts and rewetted bogs have slowed flood runoff by a third

Pumlumon in 2025

Farming patterns have changed. With fewer sheep and more cattle, wooded gullies and scrub mosaics have developed. The natural tree line is regenerating, and the fragile soils are beginning to stabilise once more. Visitor numbers are up, thanks to improved access and – for the first time in generations – something to look at. Wildlife abundance and diversity has increased spectacularly.

The new vegetation is a natural water filter. Re-linked habitats means more birds, fish and insects



The Severn floodplain in 2025

In 2010, four Wildlife Trusts set up a 1,400 acre network along the Severn in Montgomeryshire, Shropshire, Worcestershire and Gloucestershire. The network showcases best practice land management for wildlife and people. Intensive farming is reorganised so that fertiliser is not used near the river. Pollution is reduced and floodplain habitats are restored. The river ecosystem is healthy again.

Newly-planted floodplain woodland has halved water speed and almost doubled flood water storage

Water purification costs have dropped by 50%, and flood events are less dramatic

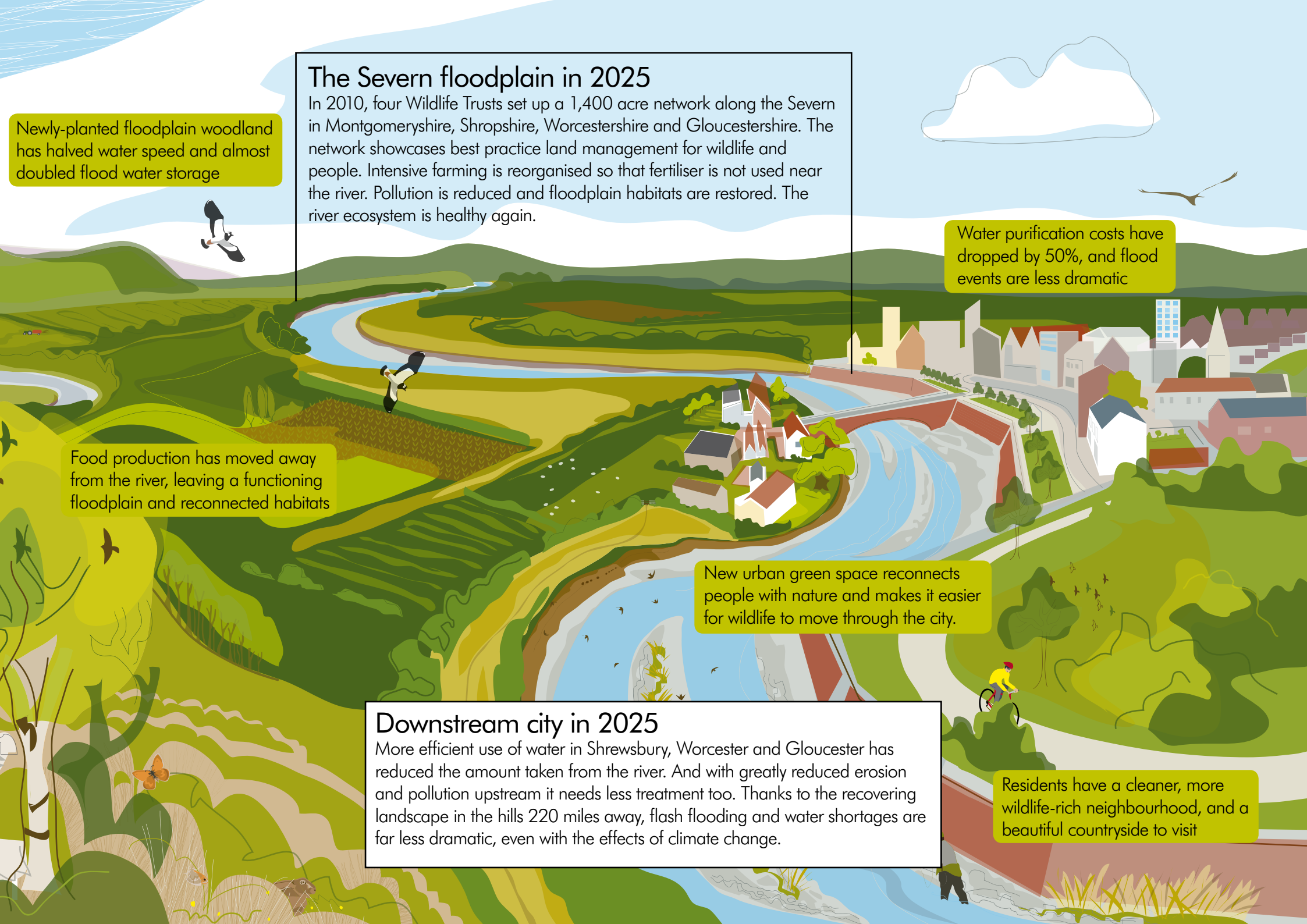
Food production has moved away from the river, leaving a functioning floodplain and reconnected habitats

New urban green space reconnects people with nature and makes it easier for wildlife to move through the city.

Downstream city in 2025

More efficient use of water in Shrewsbury, Worcester and Gloucester has reduced the amount taken from the river. And with greatly reduced erosion and pollution upstream it needs less treatment too. Thanks to the recovering landscape in the hills 220 miles away, flash flooding and water shortages are far less dramatic, even with the effects of climate change.

Residents have a cleaner, more wildlife-rich neighbourhood, and a beautiful countryside to visit



BECOME A PUMLUMON PROJECT SUPPORTER

The full restoration of the Upper Severn catchment will cost £4m. Please help us to pioneer a new contract with nature

Within five years we've demonstrated, using good science and economic analysis, how large-scale ecological restoration can bring economic, social and environmental benefits. But it will take a huge shift in public attitudes and expectations – and new funding – before these new ideas are firmly established.

To achieve the full potential of Pumlumon and Upper River Severn Catchment for carbon safeguard, flood management, improved water quality, habitat restoration and increased biodiversity, we need to raise £4 million.

What we can do for you

For the **Welsh Government** we can:

- Pilot a landscape-scale approach and show that it works
- Show how Living Wales can be delivered in partnership
- Help meet CO₂ reduction targets by safeguarding Wales' peatlands
- Model integrated land management that delivers ecosystem services to benefit residents and visitors
- Develop new products that deliver sustainable ecotourism

For the **UK Government** we can:

- Provide advice for Peatlands, Payments for Ecosystem Services and Voluntary Carbon offsetting
- With other non-governmental organisations, push for Common Agricultural Policy reform and more sustainable funding for land management with multiple objectives

For **Natural Resources Wales, Water Companies** and **Inland Drainage Boards** we can:

- Advise on land management to reduce flood risk and improve water quality
- Help you avoid costs for water treatment and storage
- Reduce the risk of flood events

For **insurers**, the **food** and **extractive industries**, and **major CO₂ emitters** we can:

- Provide corporate social responsibility opportunities to invest in the environment
- Offer the potential for credits or relevant offsets

For **other businesses, philanthropic trusts** and **individuals**:

- We would be extremely grateful for grants, in-kind support for marketing services and donations large or small

For people **living on the Severn floodplain** we can:

- Offer you fewer episodes of flooding, and somewhere fabulous to go at the weekend

To find out more

Visit montwt.co.uk or contact Project Manager **Estelle Bailey**, Estelle@montwt.co.uk, or **Dr Liz Lewis Reddy**, Liz@montwt.co.uk. 01938 555654

Montgomeryshire Wildlife Trust,
42 Broad Street,
Welshpool,
Powys SY21 7RR

"This project is an exemplar of how to take an ecosystems approach to land management in Wales. A healthy environment not only

underpins the health and wellbeing of our society but also our national economy."

Dr Emyr Roberts
Natural Resources
Wales



"The Project encompasses the farm I live on and I was delighted to take part. Grazing White Welsh cattle has significantly improved poor pasture. I think this model could inspire sustainable management of marginal areas across the UK and beyond."

Jane Lloyd-Francis
Local farmer



"This type of approach offers a cost efficient solution to the issues facing the water industry today. It makes sense to work with nature to naturally clean our water and regulate water flow. Cutting our costs means a better deal for our customers."

Tony Harrington
Welsh Water

