

Committee Clerk,  
Environment and Sustainability Committee,  
National Assembly for Wales,  
Cardiff Bay,  
CF99 1NA

06th September 2013

**RE: Sustainable Land Manage Inquiry**

Dear Sir or Madam

The Wildlife Trusts welcomes the committee inquiry into Sustainable Land Management. We hope that this inquiry can set the scene and influence the forthcoming programme of legislation programme. This is required to ensure natures recovery and the suite of ecosystem services it provides. This is at the forefront of achieving a sustainable Wales.

Due to the complexity of the topic, I have answered the Inquiries question in **Annex 1**, with case studies in **Annex 2- 7**. I have summarised the man points below.

We all have our own picture of rural Wales, whether it is rolling fields or rugged Welsh mountains. We have come so accustomed to expect this green and pleasant land we have stopped questioning if everything is alright. It's not.

Across Wales, soils are depleted and degraded which in turn releases carbon, water is over-extracted and polluted, flooding is more prevalent and wildlife struggles to survive across landscapes that have lost many of the features that provide character and distinctiveness.

This has led to habitats and species vanishing at an alarming rate, as outlined in the 'State of Nature' report. Most of the land is a wildlife desert, its sole purpose is the production of food, often at the expense of other ecosystem services. However, food production in Wales is dependent on a healthy natural environment with pollinating insects, clean water, good soils, protection from flooding, breakdown and absorption of waste.

The recently published UK National Ecosystem Assessment has made it clear that:  
*"The benefits we derive from the natural world and its constituent ecosystems are critically important to human well-being and economic prosperity but are consistently undervalued in economic analysis and decision making... Actions taken and decisions made now will have consequences far into the future for ecosystems, ecosystem services and human well-being."*

The Wildlife Trusts see the main reasons for unsustainable land use as;

- **Perverse Common Agricultural Policy (CAP)** subsidies that inadvertently promote practices that degrade the countryside, drastically eroding ecosystem services and wildlife populations. The majority of CAP funds are paid in the form of decoupled payments attached to little more than basic legal compliance (Pillar 1 payments) with little funding, proportionally, towards environmental beneficial schemes such as Glastir (Pillar II).
- Failure to deliver true **catchment management** such as catchment sensitive farming.
- **Failure to learn the lessons from UK Natural Environmental Assessment (UK NEA)** that highlights that the very basis of our economy, and our society, is the natural environment upon which this all depends. This in turn has led to failure to achieve sustainable development by consent or consideration of environmental damaging schemes such as the Circuit of Wales and a M4 Toll Road.
- The existence of government policies or programs that either fail to recognise the imperative to restore the natural environment, or indeed contribute to biodiversity



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decline.

We now look to the Government to show leadership, remove obstacles and siloed mentality, to take bold steps and make brave decisions to help society create a **Living Landscape**.

Therefore, we urge the Welsh Government to;

- **Take an ecosystem approach to land management** - working with nature rather than against it.
- All subsidies must be based on the principle of **public money paying for public goods and services**. CAP should be *the* example of **Payment for Ecosystem Services (PES)**. Pillar I payments must deliver multiple ecosystem services and more money should be directed at Pillar II agri-environment schemes.
- CAP must play its role in meeting UK, EU and global objectives and commitments, to **halt and reverse biodiversity declines** by 2020 and meet ambitious climate change targets.
- Welsh Government must ensure greater and more effective **cross-compliance** of CAP. It should be properly enforced through simple but significantly increased checks, and breaches must also be treated seriously and proportionately.
- Promoting and adequately funding **catchment management** throughout Wales including catchment sensitive farming.
- **Develop new markets in PES**, including research and development funding to stimulate this new industry in Wales.
- **Incentivise and regulate** new PES markets to ensure that landowners receive money to enable new farm business models to work.
- Restore and cherish our protected sites - **protected sites** are nature's cathedrals are fundamental to sustainable land management, providing the backbone of an ecosystem based approach.
- Ensure its own land (and all land in public ownership) is sustainably managed.
- Welsh government must **work in equal partnership** with third and private sectors to enable this fundamental shift in land management in Wales.
- Work with and fund, landscape scale restoration schemes such as the Wildlife Trusts Living Landscapes.

Once again, thank you for the opportunity to comment on this document. I would also welcome the opportunity to expand on the points in this letter. As such, if offered, I would accept an invitation to present evidence to the Inquiry.

Yours sincerely,



James Byrne  
Living Landscapes Advocacy Manager



## ANNEX 1

### Introduction

Wildlife Trusts Wales (WTW) is the umbrella organisation for the six Wildlife Trusts in Wales – Brecknock, Gwent, Montgomeryshire, North Wales, Radnorshire and South and West Wales (hereafter referred to as the ‘Wildlife Trusts’) working together in partnership to achieve a common aims. **The Wildlife Trusts collectively speak on behalf of more than 24,000 members, over 2,000 active volunteers and manage over 216 nature reserves**, covering more than 8,000 hectares of prime wildlife habitat, from rugged coastline to urban wildlife havens.

Wildlife Trusts strive for a **Living Landscapes** and **Living Seas**, recognising this as an inspirational end point where our environment, society, and economy coexist for the benefit of wildlife and people. We want to foster the connectivity that links our urban and rural areas, our freshwater and coast, our land and sea. We aim, along with our partners, to create;

- ecologically functioning areas that can adapt to climate change; providing resilience and connectivity for wildlife,
- access and enjoyment for people
- a population that is inspired by the natural world and value our environment for the many ways in which it supports our quality of life;
- a sustainable, low carbon contribution to the economy;
- areas that provide a suite of essential ecosystem goods and services.

Our interests therefore lie in people and communities, wildlife, and their interaction.

We are at a pivotal moment. As reported in the ‘**State of Nature**’, unsustainable practices have caused dramatic decline in habitats and species outside, and within, protected sites leading to the loss of ecosystem services over vast swathes of the Welsh countryside.

Across Wales, soils are depleted and degraded which in turn releases carbon, water is over-extracted and polluted, flooding is more prevalent and wildlife struggles to survive across landscapes that have lost many of the features that provide character and distinctiveness. This has led to a habitats and species vanishing at an alarming rate, as reported in the State of Nature’. Most of the land is a wildlife desert, its sole purpose is the production of food – at the expense of other ecosystem services.

However, food production in Wales is dependent on a healthy natural environment with pollinating insects, clean water, good soils, protection from floods, breakdown and absorption of waste.

The recently published UK National Ecosystem Assessment has made it clear that:

*“The benefits we derive from the natural world and its constituent ecosystems are critically important to human well-being and economic prosperity but are consistently undervalued in economic analysis and decision making... Actions taken and decisions made now will have consequences far into the future for ecosystems, ecosystem services and human well-being.”*

Therefore, we need to take this opportunity, to influence Government programmes to restore sustainable land management.

### What do we want sustainable land management in Wales to look like and what outcomes do we want to deliver in the short, medium and longer term?

A whole new way of living that gives us more of what we want and less of what we don’t. A way that gives us viable local economies, beautiful landscapes, abundant wildlife, clean water, stores carbon; and less of the things we don’t – flooding, loss of wildlife, soil erosion and a struggling rural economy.

To achieve this we need a radical rethink of how we achieve our goals – working with nature to achieve them rather than against it.

Achieving this means

- taking an **ecosystem approach** to the sustainable management of the Welsh environment.

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- Agreeing frameworks to allow the proper valuation of ecosystem service provision and development of new markets.
- Agreeing frameworks to give a valuation of natural assets with respect to their potential for ecosystem service provision.
- Government, on behalf of citizens, and industry, needs to invest in our natural capital as part of a financially sound business model – where enhanced natural capital provides enhanced ecosystem provision which results in enhanced profit and/or cost savings for landowners.
- Subsidy systems that provide public goods for public money
- Use of the polluter pays policy, to ensure that polluters don't continue to receive subsidies.

### What are the barriers preventing us from delivering these outcomes now?

There is an imbalance between the need to 'improve' land to maximise food production against losing wildlife and ecosystem services.

The majority of unsustainable land management is driven by;

- **Perverse Common Agricultural Policy (CAP)** subsidies - the majority of **CAP** funds are paid in the form of decoupled payments attached to little more than basic legal **compliance** (Pillar 1 payments). These significant Pillar 1 subsidies have driven environmental degradation on a national scale for decades. While agri-environment funding (Pillar II), designed to create public good, receives a tiny fraction of Pillar I. Glastir alone cannot achieve sustainable land management or significant ecosystem service provision.
- Catchment surveys have shown that up to 60% of issues affecting WFD classification are caused by agriculture. However, **Cross-compliance** has failed to meet its potential and its shortcomings are numerous, for example,
  - There is a lack of clear farm-level obligations for farmers which in turn prevent farmers from delivering positive change.
  - Too few farm-level inspections take place.
  - The penalty regime fails to apply sanctions (i.e. a reduction to that year's payment) which are proportionate to the severity of the infringement.
- There is a **market failure**, there are almost no mechanisms to ensure that farmers and landowners receive money for providing ecosystem goods and services.
- Failure to deliver true **catchment management** such as catchment sensitive farming (which may significantly reduce WFD problems, reduces flood risk, protects and restores biodiversity).
- The environment is seen as a cost, and environmental regulation is seen as a barrier – however, this is fundamentally wrong. A healthy, natural, biodiverse environment is the foundation of our economy and our society - as detailed in the **UK Natural Environmental Assessment** (UK NEA).
- **Sustainable development and climate change principles are not being applied** throughout all Welsh Government departments and by local authorities leading to unsustainable land management decisions being considered such as the;
  - Circuit of Wales development which removes over 200ha of peatland to replace it with a motor track which has a carbon intensive construction and carbon intensive operation.
  - M4 Toll Road which is being proposed over several national and international designated sites at huge economic, social and environmental expense when more sustainable and significantly cheaper options are not being considered (Prof Stuart Cole, pers comm).

## How do we overcome these challenges?

- **Taking an ecosystem approach to land management** - working with nature rather than against it. For example,
  - restoring floodplains rather than building on them such as the Gwent Levels,
  - restoring and managing blanket bogs for carbon sequestration, water retention and filtration rather than draining and/or ploughing them.
  - Implementing the Pollinator Action Plan using land in public ownership to provide for pollinators such as road verges, non-functional amenity grassland etc.
- The overriding objective of the CAP should be to maintain and improve natural ecosystems, as the basis of a **sustainable farming system**. All payments must be based on the principle of **public money paying for public goods and services**. CAP should be *the* example of **Payment for Ecosystem Services**. For example, the sustainable land management should produce food, but also tackle issues of flood management at source through ditch blocking to slow down peak flow flood water.
- Participation of agri-environment schemes should be a precondition of receiving direct payments – this would require Glastir to be adequately funded via a significant transfer of funds from Pillar I to Pillar II via modulation.
- CAP must play its role in meeting UK, EU and global objectives and commitments, to **halt and reverse biodiversity declines** by 2020 and meet ambitious climate change targets. This includes supporting High Nature Value (HNV) farming which is biodiverse and produces significant ecosystem services such as carbon sequestration.
- **Top-up payments** are another potential tool for ring-fencing Pillar I funds and could be used for very specific farming issues such as protecting and maintaining semi-natural permanent pasture, Natura 2000 areas.
- **Small Landowner Grants** could be made available to landowners with biodiversity rich areas that are not eligible for agri-environment funding. An example of this is the **Monmouthshire Meadows Project**<sup>1</sup> and Gwent Wildlife Trusts, **Natural Assets Programme**<sup>2</sup>.
- Welsh Government must ensure greater and more effective **cross-compliance** of CAP. It should be properly enforced through simple but significantly increased checks, and breaches must also be treated seriously and proportionately.
- Well-resourced **advisory services** are a key tool to support farmers and land managers to adopt the most appropriate and beneficial land management options on their farm. This is not just Government officials but trained, and funded, Conservation Officers at organisations such as the Wildlife Trusts, RSPB and the Woodland Trust.
- Promoting and adequately funding **catchment management** throughout Wales including catchment sensitive farming. This includes encouraging Water Companies to do the same.
- Sustainable abstraction regimes should be in place in all catchments so that there is no risk of environmental damage.
- Restore and cherish our protected sites. **Protected sites** are nature's cathedrals are fundamental to sustainable land management, providing the backbone of an ecosystem based approach. However, many are in unfavorable condition.
- We need the science/evidence base to be agreed and codified. This needs to be written into national and European policy in such a way as to drive the new business models such as PES.
- The Welsh Government Estate should be managed to maximize biodiversity and ecosystem services.
- Working with conservation organisations to deliver landscape scale projects that deliver sustainable land management such as the Wildlife Trusts Living Landscapes Schemes (see Annex 2 – 7).
- Work to educate the population, or at least sectors within it, that they are reliant on ecosystem services, green infrastructure and thus nature.

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<sup>1</sup> <http://www.monmouthshiremeadows.org.uk/>

<sup>2</sup> <http://www.gwentwildlife.org/what-we-do/projects/monmouthshire-natural-assets-project>

- Promote green infrastructure for the multiple benefits it provides such as Montgomeryshire Wildlife Trust, Severn Farm Ponds. This reserve, sited within an industrial estate, was originally created to drain the Welshpool bypass and industrial estate – but Montgomeryshire Wildlife Trust created a wetland nature reserve that is the centre point of their educational and special needs work. It is also a great place for the employees of the industrial estate to have their lunch and de-stress. Without this reserve, the industrial estate is not viable and likely to flood – therefore it is a catalyst for economic activity within an urban context.

### **What are the main policy drivers and how can these be shaped to overcome these challenges?**

All policy areas need to change – across all ministerial portfolios. This is not about a bolt on, quick fix. This change needs to be recognised as good for the economy, social justice, health and wellbeing. However, sustainable land management should be included in the forthcoming programme of legislation.

### **How we define the key ecosystems and ecosystem services in a way that makes sense for Wales?**

Ecosystem services, as defined by the UK Natural Ecosystem Assessment (UK NEA) as “*the benefits provided by ecosystems that contribute to making human life both possible and worth living*”.

However, it is essential that Welsh Government (with third and private sectors) start to communicate what ecosystem services are to the general public. Using the marketing expertise of the private sector and the public engagement of the third sector it is possible to communicate in clear, everyday language how this new system works and what benefits they can expect.

Without this common understanding it will remain difficult for companies to justify investment, hard for Welsh Government to justify legislation and public spend. Also this general awareness could assist developing markets by allowing consumer choice to select products that will give them multiple benefits such as insurance that gives them financial security but also invests in preventing flooding in the first place.

### **What incentives we can provide land managers to develop sustainable practices, and in particular, any new sources of investment we can attract to support these?**

- **EU funding** should be refocused to promote investment in natural capital this includes CAP and Regeneration – as it benefits all sectors of the economy and society,<sup>34</sup> (see above).
- **Payment for Ecosystem Services** - payments to undertake actions that increase the levels of desired ecosystem services, and can therefore be broadly defined within market-based approaches. PES provides some key opportunities to link up those involved in ‘supplying’ ecosystem services more closely to those benefiting from the same ecosystem services and in doing so, potentially provide cost-effective ways of developing new streams of financing. The **Pumlumon Living Landscape** by Montgomeryshire Wildlife Trust is pioneering this approach in Wales
- **Catchment Management** – A form of PES, where water companies pay for catchment management (ultimately, we pay for via our water bills). For example, ‘Upstreaming solutions’ by South West Water has a strong projected benefit to cost ratios (in the region of 65 to 1 or better over 30 years) and will cost just 60p per customer by 2015. This flagship programme is run alongside Devon and Cornwall Wildlife Trusts Living Landscapes (page 32 DEFRA’s ‘Water for Life’<sup>5</sup>). Water Consumers, like all consumers want value for money and managing the catchments provides multifunctional benefits –more bang for their buck.
- **Tourist and recreation industries** – Visitor Payback Schemes is another form of PES. Examples, include the Lake District where this approach has been very successful. For example, visitors are given the option of adding an extra pound or percentage to their bill. This money then goes towards projects that sustain the local environment and upkeep of paths etc – it’s like a tip for the landscape.
- **Conservation covenants** are voluntary agreements between a landowner and responsible body (charity, public body or local/central Government) to do or not do something on their land for a conservation

<sup>3</sup>DEFRA and Natural England (July 2013) - Green Infrastructure’s contribution to economic growth: a review <http://www.naturalengland.org.uk/ourwork/planningdevelopment/greeninfrastructure/gigrowthfeature.aspx>

<sup>4</sup> Natural England – Health and the Natural Environment – An Evidence Based Information pack [http://www.naturalengland.org.uk/Images/health-information-pack\\_tcm6-31487.pdf](http://www.naturalengland.org.uk/Images/health-information-pack_tcm6-31487.pdf)

<sup>5</sup> DEFRA ‘Water for Life’ - <http://www.official-documents.gov.uk/document/cm82/8230/8230.pdf>

purpose. A similar system is used in Gwent, where **Gwent Wildlife Trust** and **Monmouthshire Meadows** enter into such agreements, however small grant funding is provided for management and capital works (as plots are usually too small to enter agri-environment schemes).

- **Other Ministerial Portfolios** - There is significant peer reviewed evidence that states 'green infrastructure'<sup>6</sup> make significant difference to
  - **Inward investment:** The evidence shows clearly that increasing the attractiveness of an area through investment in high-quality parks, increases inward investment and property values in proximity.
  - **Visitor spending:** The attractiveness of the area and the quality of parks impacts on the number of visitors attracted to, and spending in, the local area. For example, the Montgomeryshire Wildlife Trusts, Dyfi Osprey Project attracts 40,000 visitors a year which brings in £350,000 per year to the local economy.
  - **Environmental cost-saving:** Green Infrastructure provides important regulatory services such as pollution filtration, flood risk reduction and the mitigation of temperature extremes. There is good evidence that green infrastructure can therefore reduce damage costs and is often a more cost-effective way to meet environmental targets than mechanical solutions. Reduced damage and costs should allow greater investment in productive activities.
  - **Health improvements:** Mental ill-health and stress are significant health issues in the UK and there is strong evidence that access to green space has a positive impact on these issues. The UK also suffers from a significant burden of ill-health due to people not meeting recommended levels of activity. The evidence is strongly suggestive of the quality of the outdoor environment being an important factor in encouraging daily exercise. There is also good evidence that health improvements feed through into increased productivity.
  - **Market sales:** There has been a recent upsurge in interest in the production of conservation or niche food. Opportunities like the Wildlife Trust Wales Conservation Branding initiative is a good example of this.
  - **Employment generation:** Developing and maintaining green infrastructure provides jobs. In Wales, the natural environment is big business. A study in 2001 estimated that Wales' natural environment contributes 9% of the country's Gross Domestic Product (GDP), one in six jobs and 10% of all wage and salaried incomes, maintaining the country's leisure and tourism, agriculture, forestry, water resources and waste management sectors. It also found that *'the environment is relatively more important to the Welsh economy than is the case for the other UK nations.'*<sup>7</sup> Biodiversity makes a significant contribution to economic and social prosperity in Wales and wildlife (flora and fauna) based activity generates £1.9 billion in revenue, equivalent to 2.9% of Wales' national output and 3% of employment<sup>8</sup>.

#### **How we ensure that our sustainable land management policies maintain vibrant rural communities and attract new entrants into the land-based sector?**

Using CAP and catchment management/PES to pay for ecosystem services – public money for public good.

#### **The most appropriate geographical scale(s) at which we should be delivering sustainable land management policies and practices in Wales?**

It will vary on site specific issues, but catchment scale would be a good place to start.

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<sup>6</sup> Natural Environment White Paper (Defra, 2011) defines 'green infrastructure' as "a term used to refer to the living network of green spaces, water and other environmental features in both urban and rural areas. It is often used in an urban context to cover benefits provided by trees, parks, gardens, road verges, allotments, cemeteries, woodlands, rivers and wetlands."

<sup>7</sup> Valuing our Environment, Valuing the Environment Partnership (2001)

<sup>8</sup> Wildlife Economy Wales: An Economic Evaluation Scoping Study, Mabis Ltd (2007)



## If there are key actions we can take to deliver short-term 'quick wins' and the actions we should be taking for the long-term?

- Welsh Government estate including Local Authority land should be managed for multiple benefits including pollinators, carbon and water storage and restoration of important habitats and species. Recently Montgomeryshire Wildlife Trust was successful in bidding for money, from an independent source, to undertake habitat restoration work on NRW forestry land. While, this shows the value of third sector organisations, this project should have been funded by Welsh Government and/or NRW.
- The Forest and Water Guidelines should be reviewed and strengthened to protect and benefit the water environment, including discontinuing forestry pesticide (*cypermethrin*) spraying and large scale clear felling.
- Any scheme receiving planning approval or grant funding from the Welsh Government or local authorities should deliver for the environment or, at a minimum, not erode or degrade ecosystem services such as the Circuit of Wales, or the M4 Toll Road.
- Adequate funding to projects that deliver multiple benefits at a landscape scale such as the Living Landscape Projects (See Annex 2-7) such as the Pumlumon project.

## Identification of good examples of sustainable land management

1. The **Pumlumon Project** is led by the Montgomeryshire Wildlife Trust, pioneering an upland economy built around wildlife, ecology and long-term sustainability across 40,000 hectares of the Cambrian Mountain range in mid Wales. It is an official PES scheme, looking to attract investors in flood control, carbon sequestration and water purification. It aims to demonstrate the viability of new, more sustainable business models for farmers, forestry owners and tourism businesses. A suite of land management actions tailored to local conditions (ditch-blocking, tree-planting, alteration of grazing regimes and grazing species) are being piloted across several landowners' holdings as well as those of the Wildlife Trusts. These actions are designed to improve water quality, reduce peak run-off in storm events, safeguard carbon, increase biodiversity and engage local communities. Collaborative investigations by the Centre for Hydrology has shown that the water table has risen by 5cms.
2. **Source to Sea Living Landscape** - Montgomeryshire Wildlife Trust (MWT) are working with working our partners to restore and recreate wetland habitats and floodplains across the whole catchment. In turn, this should help vital ecosystem services such as reduction of flooding, improved drinking water quality and rebuilding the beautifully interconnected biodiversity of the river and its catchment.
3. **Usk to Wye Living Landscape** – This Living Landscape includes a number of discrete projects which have land management and habitat creation at its heart such as the **Natural Assist Programme** and the **Monmouthshire Meadows Project**. The Trust's volunteer task force has put in over thousands of days of work to help create and manage grassland and woodland sites. The Trust has also provided more than £70,000 of capital funding manage meadows outside their reserves - installing fencing and water supplies and support the use of cut and collect machine for both seed collection and scrub cutting. The Trust's experienced advisors have provided free advice to landowners, held events and road shows and carried out grassland management demonstrations in the project area. The project has enabled local people to be involved in managing their landscape and to understand how wildlife, food and farming are fundamentally connected. The involvement of local communities volunteers and particularly farmers, working in partnership has enabled the enhancement of habitats for wildlife and the production of food in ways that help manage and mitigate against the continuing pressures facing the countryside.
4. **Pontbren** - The Pontbren Group comprises a group of farmers in the upper Severn valley who have worked together to develop a more sustainable way of farming. It covers almost 1000 hectares of farmland. Restoration of woodland area and hedgerows by this group, supported by Coed Cymru, resulted in a reduction in surface flows after heavy rain. Collaborative investigations with a number of universities quantified the substantial benefits of planted trees in reducing surface water flows and flooding, as well as allowing banks and streambeds to consolidate and thus aiding the recovery of streamside vegetation. Stream widths have narrowed significantly and pools and riffles have developed on stretches which were previously shallow and uniform. The group wanted to combine elements of

woodland and landscape management, marketing and cost reduction through better resource management. This did not fit within a standard agri-environment scheme so they sought different funding including the CAP's LEADER fund. By demonstrating the positive environmental impacts, Pontbren has now become an agri-environment scheme tailored to its particular catchment, combined with co-operative marketing projects and is run from the bottom-up.

5. **The Clettwr catchment survey** - A survey of the Clettwr catchment in 2012, conducted by volunteers within the Teifi Rivers Trust, established a variety of impacts from farming. This included riparian habitat degradation due to overgrazing, organic pollution from inadequate waste management systems and sedimentation of river gravels caused by soil erosion. The Trust has worked with farmers and Environment Agency Wales to address these issues through schemes aimed at habitat improvement, reduction of soil erosion and improvements to waste management systems. As well as benefiting the river the project has helped farmers to improve the working farm environment.
6. **Upper Conwy Partnership Project** - Peat drainage as a result of the extensive drainage ditching (moorland gripping) in the Migneint area of the upper Conwy has led to peat drying, acidic "flushes" and highly variable flows; resulting in channel and gravel instability, washout of eggs and fry and downstream flooding issues. Approximately 125km of ditches were blocked by peat dams and were re-profiled during 2011 through projects involving RSPB Cymru, National Trust and Afonydd Cymru. Results show this work has reduced the risk of flash floods, as more rainfall is being retained within the bog. The moderation of flash floods achieves multiple benefits by preventing the discharge of acid 'spikes', lessening the erosion damage to the river channel and reducing the scouring of spawning gravels.
7. **Reducing bacterial input to rivers** Research has demonstrated that preventing stock access to watercourses whilst providing alternative stock drinking facilities can have major benefits in reducing bacterial runoff to rivers. The fencing and buffer strips that are being created as a result of the habitat improvement work carried out by River Trusts in Wales will limit stock access to streams. This work could be combined with provision of alternative stock watering facilities to achieve major reductions in bacterial input to rivers and in turn help to achieve bathing water standards.

# Alun and Chwiler Living Landscape

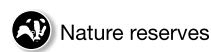


The Alun and Chwiler (Alyn and Wheeler) catchments flow through the Clwydian Range and Dee Valley Area of Outstanding Natural Beauty (AONB) and Halkyn Mountain Special Area of Conservation (SAC). The area has been recognised as a biodiversity hotspot for many years.

The area supports a range of important habitats including ancient woodland, unimproved grassland, heathland and wetland habitats. The area contains a number of notable species such as dormice, water vole, otter, lesser horseshoe bat, lesser spotted woodpecker and a wide range of plant species.

However, this area has a number of significant challenges. **Invasive Non Native Species** have gained a substantial foothold in these catchments. For example, if allowed to remain, Himalayan Balsam can out-compete native plant species, greatly reducing biodiversity and negatively impacting on the native ecosystems. By exposing bare soil when it dies back in winter, it causes soil erosion leading to sediment entering the river that can silt up spawning grounds. Also, following rainfall, the bare soil allows pollutants to run into rivers and thus degrade the chemical status of the water.

Controlling invasive species will help to maintain ecological diversity and health throughout the river system. However, there are other issues these catchments face such as grazing pressures and significant gaps in riparian habitat connectivity.

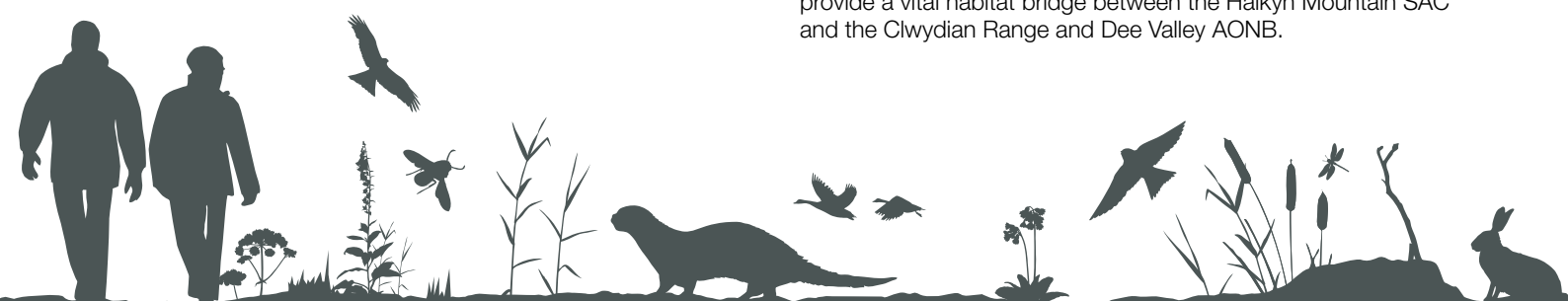


By working within the catchments to restore, recreate and reconnect important habitats, the North Wales Wildlife Trust (NWWT) will improve the:

- essential **ecosystem services** that these habitats provide such as flood alleviation
- water quality and therefore delivery of the **Water Framework Directive** objectives
- **river corridor habitats** for European, UK, and Welsh protected species

This area is also close to significant urban populations, parts of which suffer from multiple deprivation. To counter this, the project will continue to train and encourage the involvement of volunteers from local groups to help deliver action. The NWWT and partners will give people access to the countryside and greenspace, increasing their confidence and transferable skills, encouraging healthier habits and future **job prospects**.

Therefore, this Living Landscape, offers an excellent opportunity to take a more holistic approach to large-scale land management. With proper enhancement and management, the project area would provide a vital habitat bridge between the Halkyn Mountain SAC and the Clwydian Range and Dee Valley AONB.



# Alun and Chwiler Living Landscape



By linking the Halkyn Mountain SAC to the Clwydian range this project would create a continual corridor for wildlife from the north of Flintshire to the south of the Berwyn Range and beyond.

Habitats	Species
Rivers and ponds	Wale vole and otter
Lowland meadows and calcareous grassland	Deptford pink
Lowland mixed deciduous woodland	Dormouse
Wet woodland	Lesser horseshoe bats
Hedgerows and arable field margins	Lesser spotted woodpecker
Limestone pavement	Adder
	Freshwater fish

## Vision

The natural, healthy river corridors of the Alun and Chwiler river catchments will be interconnected with the Halkyn Mountain SAC and the Clwydian Range and Dee Valley AONB. These corridors will be alive with abundant native wildlife that expands into the surrounding environment. Local communities, farmers, businesses and schools will prosper and be enthused and inspired to value and conserve their unique and wildlife rich environment.

## Environment

Priority areas for habitat creation and enhancement have been identified. NWWT are undertaking active habitat management in these areas such as creating and restoring wetlands, erecting bankside fencing, planting trees and undertaking woodland management and conservation grazing. NWWT and their partners are:

- Advising local landowners on measures to promote better land and river management
- Improving the ecological status of these rivers thus contributing to WFD objectives
- Establishing projects to remove or control non-native invasive species within these catchments



## Society

This Living Landscape will engage local communities and disadvantaged groups by offering training and volunteering opportunities. NWWT have developed relationships with schools and community groups, encouraging and supporting the use of the outdoors for **health, wellbeing and education**. They are also improving access to wild areas thus allowing more opportunities for people to engage with local wildlife.

## Economic

NWWT aim to undertake cost effective and sustainable management of water catchments to create beneficial economic outcomes.

By working with partners to prevent contaminants entering the river we can reduce the impact upon economically important fishing grounds and help alleviate flooding further downstream. NWWT aim to bring local communities and tourists into previously unexplored areas. NWWT are working with Visit Wales to increase the numbers of visitors to the area by using wildlife reserves as tourist 'honeypots'. In turn, this will increase opportunities for local B&Bs, hotels, restaurants and more.

By offering skill development to the local long-term unemployed, NWWT aim to increase the economic and social wellbeing of the local communities.

**Key Partners:** AONB, NRW, Visit Wales, Flintshire and Denbighshire County Councils and local groups.

### Join North Wales Wildlife Trust

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# Cwm Marteg Living Landscape



 Nature centre  Nature reserves

## The Hidden Jewel in the Welsh Heartland

Radnorshire Wildlife Trust's (RWT) Cwm Marteg Living Landscape is based around the 6,000ha catchment of the River Marteg, a tributary of the River Wye.

This Living Landscape encompasses the scenic valleys and open hills of the eastern Cambrian Mountains near Rhayader in Mid Wales. It is an area of **wild natural beauty**, scattered family farms and small rural communities, alive with rivers and streams like the Marteg, the Wye and their tributaries.

To the west of the Cwm Marteg Living Landscape lies the Elan Valley with its expansive uplands, wooded slopes and drinking water reservoirs. To the north-west is the Pumlumon Living Landscape. Drawing these areas together is the River Wye, rising on Pumlumon and collecting water from all these hills, connecting this landlocked landscape with the sea.

A large area of the upland habitat of the Living Landscape is both nationally and internationally protected, particularly for its birdlife. Away from this are the family farms with their semi-improved grasslands and acres of commercial forestry plantations, interspersed with patches of marshy grassland, pockets of peat bog and hillsides of upland oak woodland.



### Habitats

- Rivers and ponds
- Scrub and ffridd
- Dry dwarf shrub heath
- Upland oak woodland
- Rhos pasture and wetlands
- Lowland meadows

### Species

- Small pearl bordered fritillary
- Water voles
- Atlantic salmon
- Welsh clearwing moth
- Pied flycatcher
- Bullhead

At the heart of the Living Landscape is RWT's **Gilfach nature reserve**, a 410 acre hill farm with a mosaic of wildlife habitats including rock-strewn scrubby hillsides, oak woodland, wet flushes and unimproved pasture. The reserve and the visitor centre is the hub of the Trusts work to **inspire, educate and engage local communities and visitors** with wildlife.





RWT recognise that wildlife cannot be restricted to nature reserves if it is to survive. Therefore, they have been working with local landowners to help them manage and restore habitats so that wildlife populations can be safeguarded and move more easily through the landscape in response to climate change.

By working within the catchment to restore, recreate and reconnect important habitats, RWT will improve the essential **ecosystem services** that these habitats provide.

For example, RWT are supporting the retention of rainwater by allowing the vegetation and soil to release it more slowly into the rivers, so helping to reduce the severity of future flood incidents further down the Wye. This habitat restoration will also intercept and thus reduce pollution entering the rivers, thus contributing to **Water Framework Directive** objectives.

By maintaining a diverse range of habitats throughout the catchment, RWT are supporting a huge variety of invertebrates which benefit pollination and food chains.

## Vision

The river valleys, pastures and uplands of the Cwm Marteg Living Landscape will be alive with abundant native wildlife, moving easily through connected habitats and expanding into the surrounding environment. Communities, landowners and businesses will prosper and enjoy living in a high quality environment. Both local people and visitors will be inspired to value and conserve this unique and wildlife-rich area.

## Environment

The Living Landscape will continue to work to restore, recreate and reconnect important habitats and the species which rely on good habitat connectivity for survival, such as water voles, small pearl bordered fritillary and Welsh clearwing moth. RWT are also working with partners to control non-native species such as American skunk cabbage and Himalayan Balsam. These species can have devastating impacts on native wildlife and ecosystems.

## Society

RWT are inspiring local communities to get involved, stay active and get fit. This is being done by improving access to wild areas, encouraging visits to nature reserves, celebrating iconic species and involving people in surveying wildlife. RWT are working in partnership to encourage both community groups, schools, local people and visitors to use the outdoors for health, wellbeing and education.

## Economic

RWT will work with partners and landowners, improving and safeguarding ecosystem service provision by protecting watercourses and supporting wildlife friendly farming businesses.

RWT acted as a catalyst, and are supporting local wildlife tourism initiatives aiming to make Rhayader the "wildlife centre of Wales". They are encouraging people to visit nature reserves and bringing tourists into previously unexplored areas. RWT are working to restore wetland habitats so the flow of rainwater is regulated and flooding prevented further downstream.

**Key Partners:** Powys County Council, local Community Councils, Visit Wales, Natural Resources Wales and Rhayader Angling Club.

### Join Radnorshire Wildlife Trust

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# The Pumlumon Living Landscape



## Delivering Ecosystem Health for People and Nature

Led by the Montgomeryshire Wildlife Trust (MWT), the Pumlumon Living Landscape Project is a flagship project of the Wildlife Trusts, built around amazing wildlife, ecology and long-term sustainability across 40,000ha of the Cambrian Mountain range.

This region of the Cambrians supports the largest watershed in Wales and is the source of the nationally important and vibrant Wye, Severn, and Rheidol rivers. At the core of the project is the 5000ha Pumlumon SSSI, but the entirety of the project area supports a mosaic of locally, nationally and internationally important habitats and species including blanket bog and dwarf shrub heath.

The natural beauty of these landscapes also has considerable aesthetic appeal, with the wide horizons and open spaces lending visitors a sense of freedom and tranquillity.



before



after



© Vision 2020

 Nature centre  Nature reserves

Over the past century, changing land use practises (e.g. draining of blanket bog) have resulted in a decline in the quality of these important habitats, and as a consequence the wildlife has suffered. In turn, this decline in biodiversity has a damaging effect upon the level of essential societal benefits, known as 'ecosystem services', which these habitats provide.

For example our upland blanket bogs help to;

- **reduce flood risk** by retaining rainwater and slowly release it into the rivers
- **improve drinking water quality** by filtering impurities from rainwater
- **soak up carbon from the atmosphere**

The Project demonstrates that by managing the natural environment on a large scale, we can deliver a sustainable future for the people and wildlife of Montgomeryshire – 'win-wins'. Working in partnership with other organisations, landowners, communities, schools and businesses, the Wildlife Trust and partners are piloting the delivery of essential outcomes such as for; wildlife, water quality, flood risk reduction, carbon safeguarding, upland farming communities, and parts of the tourism industry.



# The Pumlumon Living Landscape



## Vision

To revitalise Pumlumon's important habitats and amazing wildlife by enhancing key ecosystem services. This exemplar project will pioneer a new, sustainable upland economy for Wales.

## Environment

The Project will develop healthy, robust habitats which will benefit **iconic wildlife**. By undertaking sustainable management on partners and MWT's landholdings (such as Glaslyn Nature Reserve), the Project will deliver;

- 5,050ha of species rich habitat under positive management
- 10 priority bird, mammal and/or invertebrate projects
- Large-scale hydrological management of upland Montgomeryshire delivering a number of Water Framework Directive objectives

To complement the above, MWT will work alongside the Welsh Government and statutory agencies, to assist farmers and landowners with agri-environment applications.

## Society

The Project aims to reconnect **upland communities** with the natural environment through a vested economic and social interest in the health of their surrounding ecosystems. The Project will:

- Establish community led environmental and 'sense of place' projects
- Develop skills and training
- Create a volunteer task force for wildlife surveys and monitoring
- Improve the health and wellbeing of local communities

## Economy

The Project will deliver **economic benefits to the local communities** and further afield by;

- Carbon Safeguarding – storing 2,565,750 tonnes of carbon by appropriately managing 3,730ha of land
- Floodwater storage – storing 41.9 billion litres of water by appropriately managing 3,730ha of land
- Providing capital grants towards soil, nutrient, water and habitat management works
- Creating high quality, added-value products for local markets such as 'Conservation Beef'



- Providing a suite of access, tourism, and people engagement points
- Showing how modern farming can be sustainable, maintain upland traditions and make money

MWT will champion new sustainable 'Payment for Ecosystem Service (PES)' markets required to support the delivery of ecosystem services. These new markets will support the future of the upland farming community through access to alternative income streams as a result of sustainable land management.

Habitats	Species
Wet dwarf shrub heath	Red and black grouse
Dry dwarf shrub heath	Hen harrier
Blanket bog,	Curlew
Unimproved acid grassland	Short eared owl
Upland, low nutrient lakes (oligotrophic)	Sundew

**Key Partners:** TWT, NRW, WG, Waterloo Foundation, J Paul Getty JNR, Charitable Trust and Biffaward

### Join Montgomeryshire Wildlife Trust

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# Upper Tawe Valley Living Landscape



## Creating a healthier future for wildlife and people in the Upper Tawe Valley



**Lying on the southern edge of the Brecon Beacons National Park, the Upper Tawe Valley is an area of great potential for wildlife with many priority habitats and species.**

One such species is the marsh fritillary butterfly. It breeds in rhos pasture which contains both its food plant, (devil's bit scabious) and thick tussocks of grass that shelter the caterpillars over winter. This area holds a key population of the butterfly and is one of the best sites in Wales.

Marsh fritillaries require extensive habitat networks for their long term survival. However, with the continued fragmentation of this habitat, this species has become scarce, suffering a severe decline in its distribution over the last century.

In parallel to this, large areas of the valleys are identified as areas of multiple deprivation. Local communities often seem disenfranchised from nature and see wildlife as remote and inaccessible.

Led by Brecknock Wildlife Trust (BWT), the Upper Tawe Valley Living Landscape Project is working to restore, recreate and reconnect wildlife rich spaces. They also aim to bring local communities closer to the wonderful wildlife on their doorstep.



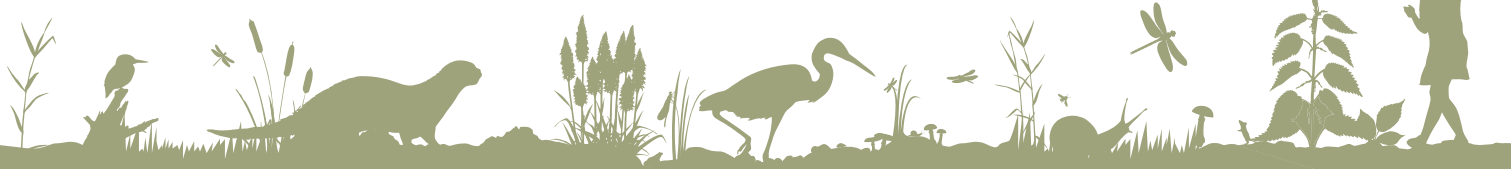
Nature reserves

This project brings together the management of several nature reserves which form the cornerstone of this Living Landscape. But wildlife cannot be restricted to nature reserves if it is to survive. Therefore, BWT is working with neighbouring landowners to enhance their land for wildlife, allowing populations to be safeguarded and adapt to climate change.

They aim to restore uplands habitats to fulfil their important ecosystem services such as water regulation, flood prevention and pollution control.

Restoring the River Tawe and tributaries to act as wildlife corridors will help engage local people to take care of nature in their patch. In turn, this will equip those communities with the confidence and skills to avail of new employment opportunities such as increased wildlife tourism.

Species	Habitats
Marsh fritillary	Rhos pasture
Harvest mouse	Blanket bog
Grass snake	Marshy/Wet grassland
Common lizard	Acid and limestone grassland
Redstart	Heathland
Green and great spotted woodpeckers	Oak woodland
Marsh orchid	
Devils bit scabious	



# Upper Tawe Valley Living Landscape



## Vision

The Upper Tawe Valley Living Landscape project aims to create a healthy and resilient landscape for both wildlife and people. Wildlife populations will be safeguarded and able to expand and colonise new areas, adapting to climate change. People will be inspired by wildlife and re-connected to it, empowered to take action to conserve it and benefit from the economic, social and health opportunities it can provide.

## Environment

The Upper Tawe Valley Living Landscape will **restore, recreate and reconnect a fragmented landscape**. BWT are working with partners to bring forward a selection of rhos pasture sites into appropriate management for marsh fritillary and create new wetland habitats for amphibian and reptile species.

This work will contribute to **Water Framework Directive** objectives and help bring designated sites into 'favourable conservation status'. BWT aims to manage limestone grassland to benefit rare wildflowers and restore urban and upland river habitats, improving their ecological connectivity. This in turn will allow animals to adapt and be resilient, to the effects of climate change.

## Social

By using iconic species, the Upper Tawe Living Landscape will inspire, empower and re-connect local communities and disadvantaged people to nature. BWT aim to work with local health initiatives to provide fun outdoor recreation, health walks and voluntary work for people with mental health issues who frequently suffer from isolation and **social exclusion**.

BWT aim to offer opportunities and training to **disadvantaged young people** who are long term unemployed. They will look to offer training in wildlife conservation, practical conservation skills, management plans, grant funding, sponsorship and community fundraising. This will benefit participants confidence and improve their social skills.

BWT are continuing to develop relationships with schools and community groups. They encourage and support the use of the outdoors and nature for **education, health and wellbeing**. They are also continually **improving access** to wild areas to allow more opportunities for engagement with local wildlife.

## Economic

BWT are working with partners and landowners to inspire a new economic vision for the Upper Tawe. BWT aims to harness the potential within the uplands to sequester carbon and prevent flooding further downstream thus improving and safeguarding critical **ecosystem service** provision.

BWT are working alongside Visit Wales and Brecon Beacons National Park to utilise wildlife reserves as tourist 'honeypots', bringing tourists into previously unexplored areas.

BWT are also creating new jobs by employing Wildlife Apprenticeships and Community and Wildlife Education Officers, recruited from the local community.

**Key Partners:** WREN, Visit Wales, Natural Resources Wales and Brecon Beacons National Park.

### Join Brecknock Wildlife Trust

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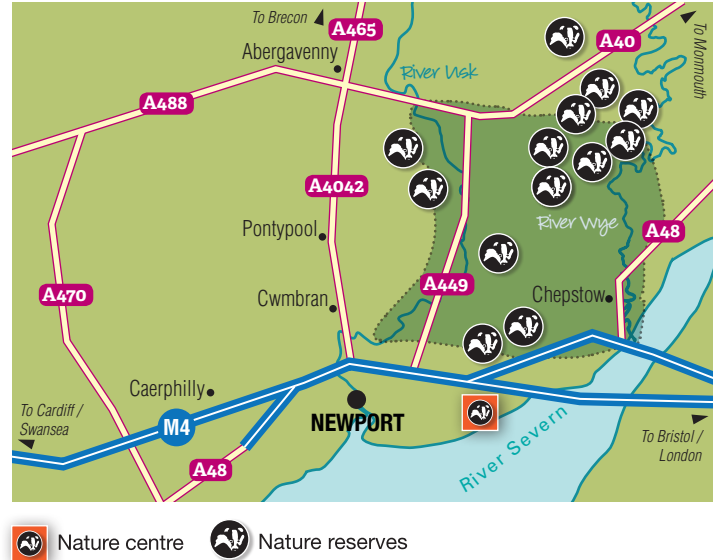
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# Usk to Wye Living Landscape



## A natural health service

**Gwent Wildlife Trust's (GWT) Usk to Wye Living Landscape covers some 40,000ha of breath-taking countryside. It is a rolling patchwork of farmland, meadows, hedgerows, woodland, brooks and streams. It lies between the banks of the River Usk and the River Wye.**

This Living Landscape includes the beautiful Wye Valley AONB, and the Trellech Plateau that rises above the River Wye with its mosaic of small landholdings, woodland and riparian habitats. The wider landscape of Usk to Wye is notable for its species-rich meadows and two significant areas of ancient woodland centred around Wentwood and along the Wye Valley. The Usk and Wye rivers themselves are both highly prized because of their **economically important migratory fish populations** and other wildlife wonders.

The unique qualities of this corner of Wales makes it an inspirational place to live and work. And the area's wildlife and landscape attracts thousands of tourists each year. The region's biodiversity and habitats play their parts in a wider sense too - performing **important ecological functions** including floodwater management and carbon storage.

However, the natural bounty of the Usk to Wye Living Landscape is under threat. Over the last 50 years there has been increasing pressures from commercial forestry, agricultural intensification, land abandonment, economic development and urbanisation. Once widespread, wildlife rich, habitats have significantly declined and are now increasingly fragmented and isolated across the landscape.



Damage has not been limited to terrestrial habitats. Usk and Wye rivers, and their various tributaries, have suffered declines in water quality and habitat functionality as a result of pollution and nutrient loading from surrounding land uses. Added to this, the invasion of exotic species has caused the decline of many of the area's most charismatic native species such as water vole. For wildlife, the future influences of climate change will only exacerbate these problems, with knock-on effects on the ecological functionality that we all rely on in this corner of Wales.

In order to address these threats to wildlife, habitats and ecosystems within the Usk to Wye Living Landscape, GWT is working with its local conservation partners on the development of an effective landscape scale programme to protect our rich natural heritage, and to make the most of opportunities this affords for people and wildlife.



# Usk to Wye Living Landscape



## Vision

The Usk to Wye Living Landscape will support wildlife-rich patchworks of interconnected habitats between the Usk and Wye Rivers. Well managed habitats, and healthy rivers and streams will function as wildlife highways allowing species to move freely through the landscape. In turn, this will support the aspirations of local communities through enhancing sustainable agriculture, tourism, and ecosystem functions such as natural flood protection.



Habitats	Species
Woodlands	Dormouse
Hedgerows	Water vole
Wildflower meadows	Bats
Traditional orchards	Otters
Lowland heath	Farmland birds
Rivers, streams and water bodies	Shrill carder bee
	Grassland fungi
	Salmon and trout

## Environment

GWT itself manages a dozen nature reserves within the Usk to Wye Living Landscape. These perform an increasingly important role as examples of best practice for habitat management. They help to inform and advocate 'best practice' for land managers and owners in the area and beyond. Also, as local wildlife 'hotspots', they act as refuges and important stepping stones, enabling wildlife to repopulate the landscape as habitat improvements are rolled out.

This Living Landscape aims to increase the size and ecological connectivity of fragmented habitats. GWT will look to re-establish iconic species back into the countryside such as water voles, dormice and shrill carder bees.

This will be achieved by increasing the amount of land within conservation management as well as providing surveys, grants and advice to landowners to encourage habitat creation and restoration, and uptake of agri-environment schemes.

GWT aim to undertake management on a number of key habitats such as management of woodlands, meadows, hedgerows, river corridors and orchards.

## Social

Greater involvement, empowerment, and engagement of local communities within landscape conservation initiatives are imperative for conservation success. GWT's nature reserves will therefore play an increasingly important role in community engagement and outreach for the Usk to Wye Living Landscape. GWT is committed to the development of local 'People and Wildlife' activities that will facilitate a wider understanding of the true values of biodiversity, wildlife and ecology.

Such activities will range from traditional education/outdoor education approaches on their own nature reserves, to wider engagement with local artists, the farming community, landowners and employers. The fullest possible range of social and mainstream media will be utilised in support of these vital efforts. They will also;

- Support landowners, community groups and schools in managing land for wildlife.
- Run wildlife based events including nature walks to enhance people's connection to nature and stay active.
- Work with local health initiatives such as providing outdoor voluntary work for those people with mental health issues who frequently suffer from isolation and social exclusion.

## Economic

GWT will work with partners to improve and safeguarding ecosystem service provision such as flood risk management, water purification and carbon sequestration. They will demonstrate best practice showing that economically viable farming and wildlife can co-exist.

GWT use local contractors thus keeping money in the area and promoting rural jobs. They also run habitat management courses to increase participant's skills, confidence and chances of employment.

**Key Partners:** The Usk and Wye Rivers Association, Visit Wales, Natural Resources Wales

### Join The Gwent Wildlife Trust






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-  Gwarchodfa Natur yr Ymddiriedolaeth Bywyd Gwyllt  
Wildlife Trusts Nature Reserve
-  Canolfannau Ymwelwyr/Addysg yr Ymddiriedolaeth Bywyd Gwyllt  
Wildlife Trusts Visitor Centres
-  Ardal Prosiect y tirlun byw  
Living landscape Project Area
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