



Comisiynydd  
**Cenedlaethau'r  
Dyfodol**  
Cymru

**Future  
Generations**  
Commissioner  
for Wales

**A Journey to**

# A Resilient Wales

**1: Biodiversity and Soil:** Maintain and enhance the natural environment through managing land appropriately to create healthy functioning ecosystems

**2: Natural Green Space:** Support social resilience and community well-being

**3: Knowledge of Nature:** Increase awareness of the importance of a biodiverse natural environment with healthy functioning ecosystems

**4: Water and Air Quality:** Support ecological resilience, making the environment healthier for wildlife and people

**5: Using Natural Resources:** Be adaptive to a changing environment where there is a need to use resources efficiently



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In the Well-being of Future Generations Act, this goal is defined as

*“A nation which maintains and enhances a biodiverse natural environment with healthy functioning ecosystems that support social, economic and ecological resilience and the capacity to adapt to change”.*



## Defining the goal

Here in Wales, we are now among the most nature-depleted countries in the world, with 1 in 14 wildlife species facing extinction.

Wales also has some of the worst air quality in the UK, still emits high numbers of greenhouse gas emissions and is now at greater risk of flooding, soil erosion and poorer water quality. Without healthy functioning ecosystems, we cannot resist, recover from or adapt to the changes facing our planet.

Our natural environment here in Wales is vital for our well-being; it provides the air we breathe, our food, 951 million litres of drinking water per day, our clothes, medicine, materials such as timber, as well as green spaces to enjoy. However, we are living in an area of unprecedented change when it comes to our planet. Biodiversity, 'the variety of all life on earth', has seen an overall 60% decline in species across the globe since 1970.

The goal of a resilient Wales is to reverse the decline of our biodiverse natural environment, to develop better awareness of our impacts as individuals and organisations, to ensure we are ecologically resilient, with healthy ecosystems, and to support community well-being.



### Case studies

Throughout the document you will find a number of reports relating to the topic subject. Please read the link if you see this symbol.



## Other statutory requirements in relation to this goal

**The Environment (Wales) Act 2016 introduces the Sustainable Management of Natural Resources (SMNR)** and sets out an approach to planning and managing natural resources to ensure that the benefits they provide for our social, economic, environmental and cultural well-being are available now and for future generations.

**The Natural Resources Policy** sets out national priorities for the sustainable management of natural resources, for us all to contribute towards. The priorities are about mainstreaming action for biodiversity across our urban and rural areas and reducing the pressures on our natural resources.

**Natural Resources Wales' area statements** will be developed by 2020. They help deliver the priorities in the Natural Resources Policy in a place, and will be a valuable tool to support public bodies and others delivering local actions.

Section 6 under Part 1 introduced an enhanced biodiversity and resilience of ecosystems duty (the S6 duty) for public authorities (which includes public bodies in the WFG Act) in the exercise of functions in relation to Wales. More details can be found in the [Welsh Government Essentials Guide](#).

The [State of Natural Resources Report](#) (SoNaRR) sets out the national evidence base on the resilience of ecosystems in Wales so that we can understand the extent to which sustainable management of natural resources is being achieved. The building blocks of ecosystem resilience are – Diversity, Extent, Condition, Connectivity and Adaptability.

**Planning Policy Wales** plays a significant contribution to the improvement of well-being in all its aspects and embeds the spirit of the Well-being of Future Generations Act, through moving us towards a low carbon, resilient society with well-connected environments for everyone in Wales. The planning system can contribute to improving the resilience of ecosystems and ecological networks, halting and reversing the loss of biodiversity, maintaining and enhancing green infrastructure, ensuring resilient choices for infrastructure and built development, moving towards a more circular economy in Wales; and facilitating decarbonisation.

<https://gov.wales/sites/default/files/publications/2018-12/planning-policy-wales-edition-10.pdf>



Some of the suggested steps and actions in this document complement the policies set out in legislation - specific steps and actions that adhere to these are highlighted in orange and with an 'St' symbol.

## Enablers

Achieving this goal is **more likely to happen** when...

- **There is urgent action at a pace and scale needed to combat the loss of biodiversity.**
- **Events and campaigns raise public awareness (e.g. Blue Planet 2 series) that can 'bring the topic to the political table'.**
- **It is recognised that Green Infrastructure (GI) is an achievable and effective way to alleviate multiple social, economic and environmental challenges.**
- **Organisations, including businesses, understand and work to Environment (Wales) Act, SMNR, SoNaRR report, Natural Resources Policy and Planning Policy Wales.**
- **Community organisations are enabled to drive change in their area, to ensure nature is something that can be accessed and appreciated by all.**



## Disablers

Achieving this goal is **less likely to happen** when...

- **Environmental grants are reduced and restrictive and short-term.**
- **Economic growth, including jobs and business, are prioritised over the natural environment, with environmental damage trade-off for short-term growth.**
- **Failure to plan, design and manage green infrastructure from the start of programmes and projects.**
- **A focus on waste, transport and energy, away from the natural environment.**
- **Lack of knowledge – Green Infrastructure is seen as the role of environment department.**





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**A Journey to**

# A Resilient Wales

## 1: Biodiversity & Soil

Managing land appropriately for  
the creation of healthy functioning  
ecosystems

## Defining the issue

A single area of land can offer multiple benefits provided the habitats within it are in a healthy **condition**. In general, the way habitats are managed has a greater impact on wildlife than changes in the total amount of habitat (State of Nature Report 2016). The **diversity** of these sites (i.e. having a variety of plants and animals, habitats and management practices) will also increase an area's resilience.

**Connectivity** enables ecosystems to function and recover from disturbance (increasing their resilience) but it is reduced through habitat loss and fragmentation, creation of barriers, and erosion of the 'permeability' that allows movement across the landscape. 97% (over 3 million hectares) of flower-rich grassland has been lost in the UK since the 1940's. This loss has contributed towards a serious decline in flower-rich areas that are vital habitats for pollinating insects such as wild bees, hoverflies and butterflies.



## Making Simple Changes

Eg

**Manage road verges and connected green spaces** (such as spaces around the edge of buildings) for wildflowers and pollinators.

E.g. Wildflower area at the **Natural Resources Wales** Maes y Ffynon offices in Bangor  
<https://naturalresources.wales/about-us/news-and-events/blog/public-places-natural-spaces/?lang=en>

<https://youtu.be/a3HFU51b24k>

**Engage people and community groups** you work with to 'Adopt a Path' to help manage it for Biodiversity (for example through raking grass cuttings to reduce fertility).

Eg

E.g. **Ceredigion Council**  
Adopt a Path Scheme  
<https://www.ceredigion.gov.uk/resident/coast-countryside/public-rights-of-way/getting-involved/>

**On land you own or work with**, reduce intensive management (such as cutting) of churchyards, allotments, waterways, parks etc. to leave areas for biodiversity.

Eg

E.g. **Living Churchyards Project**  
example in Abergavenny  
<https://www.stteiloschurch.org.uk/churchyardproject.htm>

**Use native**, and where possible, local provenance seed mixes where re-sowing of an area is needed (connect with local organisations who may be able to facilitate seed collection from local wildflower rich meadows).

Eg

**Use peat-free compost** in planting schemes and planters across cities, towns and villages.

E.g. **National Botanic Garden** is now peat-free  
<https://botanicgarden.wales/wp-content/uploads/2017/01/Peat-free-Compoist-leaflet.pdf>

**Provide spaces for wildlife** such as bird boxes, insect homes, ponds, and bat boxes.

## Making **Simple** Changes

**Reduce your use of pesticides and fertilisers**, especially on road verges and in urban green spaces.

Eg

E.g. In **Wrexham's Caia Park** ward, the Councillor successfully got the Council to restrict the spraying of herbicide.

*“As Councillor for the Caia Park Ward, I became aware of the serious health concerns being raised by many experts around the world over the use of glyphosate based herbicides (GBH). In particular, the excessive spraying around the Caia Park area (including children's play parks, water drains, under people's windows etc) and other areas of Wrexham. I researched and presented my findings to the*

*Homes and Environment Scrutiny Committee of Wrexham County Borough Council and asked that GBH use be suspended until it's proved to be safe or otherwise (this has not been achieved yet). I also referenced the Well-being of Future Generations Act in this report. I informed the committee of the European Union recommendations to member states to follow the rules in the EU's Sustainable Use Directive, including that they must pay particular attention to the risks in “places such as public parks and gardens, sports and recreational grounds, school grounds and children's playgrounds, and in the close vicinity of healthcare facilities”.*

*The directive says risks from exposure to pesticides are high*

*in these areas and pesticide use should be minimised or prohibited. By raising awareness of the risks in local media, local residents also wrote to the Council to complain about the use of GBH in their community. Wrexham Council agreed to adopt the EU's Sustainable Use Directive as a result of my campaign and now use alternatives, such as strimming weeds, where possible, to minimise spraying of pesticides.” - Ronnie Prince, Councillor for the Caia Park ward of Cartrefle.*

<http://www.wrexham.com/news/councillors-to-scrutinise-councils-glyphosate-use-after-eu-advises-to-minimise-use-in-public-spaces-142000.html>

## Being More **Adventurous**

**When you consider new developments,** ensure that planning conditions create pollinator friendly spaces – for example in new buildings, business parks and car parks.

**Play your part** in helping bees and other pollinators to thrive through applying for and achieving [Bee Friendly accreditation](#).

Eg

E.g. **Twyn School, Caerphilly** working towards Bee Friendly status

*“Nature and natural ecosystems are under severe stress around the world due to climate change, habitat loss, chemical use and a host of others factors. In Wales, we have the world’s first national accreditation scheme specifically designed to help pollinator species such as bees and butterflies to thrive once again by encouraging communities and others to get active in their local areas to provide new food sources and habitat for pollinators, reduce and eliminate the use of harmful chemicals and help*

*inform others about what they can do to help. The Bee Friendly scheme is open to schools, communities, businesses, places of worship, universities, colleges, land owners and public bodies and is accredited by the Welsh Government. By helping bees and other pollinators in this way, we can help reduce and reverse species and habitat decline and help nature to thrive again in urban and rural areas all around Wales.”*

-

<https://www.foe.cymru/bee-friendly-wales>

## Being More Adventurous

**Develop a Pollinator Policy** and monitor the actions you take.

Eg

E.g. **Monmouthshire County Council** Pollinator Policy and [Green Infrastructure Action Plan for Pollinators in South East Wales](#)

**Where you have reduced** the intensive management of your land to create space for nature, use the opportunity to tell people that you have provided habitats, through educational signage

Eg



**Purchase/Share a 'Cut and Collect'** machine to remove cuttings so that the fertility of the soil is reduced to benefit wildflowers.

E.g. **Rhondda Cynon Taf County Borough Council** have a cut and collect machine to reduce the fertility of verges.

*"On wider verges and larger grassy areas, there is greater capacity to use Cut*

Eg

*and collect machinery to undertake an autumn/winter biodiversity cut. Where verge areas are large enough there is the opportunity to implement staggered management (not all grass cut in one year) which increases the value of the habitat for invertebrates. For health and safety reasons narrow, regularly mown edges are usually maintained against the carriageway and these can also help to 'frame' the grassland management areas in a way which is more appealing to the general public. Where possible the verges should include composting areas which can receive cut material (and provide additional habitat for reptiles)"*

## Being More Adventurous

**Use a mixture of ways** of managing a site to create diverse habitats for wildlife.

**On your own estate** or in other areas you work, aim to secure significant areas to be managed for biodiversity as part of providing public open space and enhancing the habitats within it.

**Create and implement a Pollution Action Plan** which includes no longer using pesticides and herbicides.

**Control non-native invasive species** (which have been introduced to areas where they would not naturally be found, potentially damaging the environment, economy, and our health) as soon as identified.

**On your estate, create areas** for composting food and green waste to make your own compost and encourage your staff to do the same at home.

**Create green roofs and walls** on all new developments or identify retrofitting opportunities on existing buildings.

E.g. Village Bakery on **Wrexham Industrial Estate** has a Green Wall  
<https://www.dailypost.co.uk/news/local-news/wrexham-bakery-unveils-largest-living-9353795>

Eg

**Welsh Government's** Cathays Park office has a (moveable) roof garden of wildflowers, which also enables roof repairs to still happen.

**Create or input** into a Local Nature Recovery Map to identify areas where the greatest benefit for wildlife and people can be achieved by increasing the extent and quality of natural habitats in your area.

## Being More **Adventurous**

St

**Engage with [Natural Resources Wales' Area Statement](#)** process to help inform the state and trends of natural resources in your area, the pressures on them and how to use them efficiently, whilst enabling community cohesion and resilience.

Eg

E.g. **Natural Resources Wales** Opportunities maps for how to improve resilience of a range of ecosystems as part of the Area Statement process.

**Explore cultural landscape partnerships** (i.e. between cultural and environmental organisations), with innovative approaches developed to mitigate key issues identified.

## Owning your **Ambition**

### Collaborative or national actions

**Target contributions** from developers, future farm payments and other funds for maximum wildlife benefit.

**Create cultural landscape partnerships** between the cultural and environmental sectors with innovative approaches developed to mitigate key issues identified.

E.g. **Dyfi Biosphere Reserve** explores locally how sustainable livelihoods, vibrant cultures and robust economies can be based on healthy environments.  
<https://www.dyfibiopshere.wales/>

**Put in place a Wales-wide ban** on domestic use of pesticides, and education about alternatives.

E.g. <https://www.gardenorganic.org.uk/news/france-declares-public-spaces-pesticide-free>

**Put in place** an [Integrated Pest Management](#) strategy for all public land.

**Targets are set for the reduction** of the use of chemical pesticides and fertilisers on public and private land.

**Targets are set for increased** organic matter in UK arable and horticultural soils to aid fertility, water and reduce compaction where needed, instead of using artificial chemicals.

### Organisational actions

**There are actions** for nature recovery embedded in all of your major programmes and projects, with your leadership team tracking and communicating progress.

St

Eg

HOME

## Owning your **Ambition**

**St**

You have completed Green Infrastructure Assessments (up to date inventories and maps) available for all existing green infrastructure and ecological assets and networks (Planning Policy Wales)

**Eg**

The Wrexham Industrial Estate is situated to the east of Wrexham town in North Wales. At around 550 ha in size it is the largest industrial estate in Wales and one of the largest in Europe. It is home to approximately 300 businesses and provides employment for around 7000 people, whilst also being home to many species including badgers, barn owls, polecats, otters, great-crested newts and toads, rare plant species such as Dyer's Greenweed and pollinators such as Small Heath and Dingy Skipper. The Living Landscape Project launched in 2014 as a long-term partnership between the North Wales Wildlife Trust, Wrexham County Borough Council, Natural Resources

Wales and the local business community with funding from the Welsh Government's Resilient Ecosystem Fund (REF). The Living Landscape aims to integrate the needs of the economy, environment and society in a genuinely mutually beneficial way through engagement with businesses and other stakeholders, habitat surveys and mapping and practical activities such as wildflower meadow management, hedge creation, nest box placement, road verge management, habitat creation, and restoration of footpaths.

<https://www.northwaleswildlifetrust.org.uk/wrexham-industrial-estate-living-landscape>

**St**

**Have a Landscape scale** area-based approach that involves working in collaboration with other organisations across all sectors and working at a larger scale - often around a catchment or other recognisable landscape unit - instead of isolated small sites. With the aim of making links for wildlife between areas of habitat to increase resilience.



## Owning your **Ambition**

Eg

E.g. There are 11 **Wildlife Trust Living Landscape** projects in Wales

<https://www.wtwales.org/living-landscapes/living-landscape-schemes-wales>

**Adhere to environmental standards** such as

[Wildlife Trusts Biodiversity Benchmark/](#) [Groundworks Green Dragon/](#) [Green Flag /](#) [Blue Flag](#) , and you encourage and require where possible all organisations you work with to do the same.

Eg

E.g. **Bangor University, Arts Council Wales and a number of Councils** have achieved Green Dragon Status

<https://www.groundwork.org.uk/Sites/greendragon/news/case-study-bangor-university>

Eg

E.g. **Glanrhyd Hospital** is the first hospital in Wales to achieve Green Flag status  
<http://www.wales.nhs.uk/sitesplus/863/news/48940>

**Have a certified Environmental Management System (EMS)** in place and demonstrate you are working to the next level (ISO14001/EMAS)

## Owning your **Ambition**

**On your estate** and land you work with, stop the drainage of soils, such as bogs, that can absorb water and reduce run-off whilst protecting them from drought and flood to reduce peatland damage.

Eg

E.g. **Green Bridges in UK, Europe and America**

<https://www.gov.uk/government/news/green-bridges-safer-travel-for-wildlife>


Eg

E.g. **Natural Resources Wales**  
Anglesey and Llŷn Fens restoration project


**Restore peatlands**, working to the Welsh Governments Peatlands for the Future Programme.

**Consider opportunities** to develop green bridges which will allow wildlife to move safely over our transport network.


## Other examples and resources




**'Wild Pathways'**: connecting people and wildlife' research project by **Bangor University, Anglesey & Gwynedd Public Services Board and North Wales Wildlife Trust** to explore how working together to enhance road verges can benefit health, social cohesion, and the local economy.




**Monmouthshire County Council** Nature Isn't Neat Project  
<https://www.monmouthshire.gov.uk/2018/06/project-targets-awareness-of-pollinators-in-monmouthshire/>




**Buglife B-Lines programme** series of 'insect pathways' running through our countryside and towns, where a series of wildflower-rich habitat stepping stones are created and restored.  
<https://www.buglife.org.uk/b-lines-hub>



**Enhancing biodiversity** and well-being across the Welsh Government Administrative Estate (see page 18)  
<https://gov.wales/docs/hrd/publications/171115-state-of-the-estate-1617en.pdf>



**Healthy Hillsides** example, taking a collaborative approach that delivers multi-benefits.  
<https://cdn.naturalresources.wales/media/679661/rhondda-case-study-healthy-hillsides.pdf?mode=pad&rnd=131503023880000000>



**Swansea City Council** joined-up approach to green infrastructure in future city centre regeneration work.  
<https://www.swansea.gov.uk/article/48023/Public-to-have-their-say-on-Swansea-city-centres-green-future>

## Other examples and resources



**Clwydian Range and Dee Valley Designated Landscape** Management Plan – An Ecosystem Approach example is;  
<http://www.clwydianrangeanddeevalleyaonb.org.uk/files/979717185-Clwydian%20Range%20and%20Dee%20Valley%20AONB%20Mgt%20Plan%202016.pdf>



**Conwy County Council** carried out a biodiversity audit across its service areas, identifying current practice that impacts on biodiversity



**Plantlife 'The Good Verge Guide'**

<https://www.plantlife.org.uk/wales>



**NRW Managing the Grounds of Public Buildings for Pollinators**

<https://cdn.naturalresources.wales/media/681904/managing-the-grounds-of-public-buildings-for-pollinators>



**Pesticide Free Town Campaign**

<http://www.pan-uk.org/pesticide-free/>