



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 are business, 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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## 4: Water and Air Quality

Supporting ecological resilience,  
making the Welsh environment  
healthier for both wildlife and people

## Defining the issue

Air pollution is the biggest environmental risk to health. Within the UK, poor outdoor air quality is linked to 50,000 deaths each year with children, the elderly, or those with existing medical conditions most at risk. Over 74% of Welsh habitats are receiving damaging inputs from air pollution. The design of urban infrastructure – e.g. trees, hedges, woodland, parks, and green walls – determines where air pollution is produced, and how it disperses. In addition, the **diversity** of native trees and shrubs play a part in providing

shade, absorbing carbon dioxide, providing timber, mitigating floods and providing areas for wildlife and humans.

The natural environment can also play a part in helping to reduce flooding. Across Wales, approximately 12% of former floodplain and coastal levels habitats have now been built on, and a significant proportion of the rest has been heavily modified by years of fertiliser use, reducing the **extent** to which they can absorb excess water.

Natural solutions that look at the whole catchment area rather than a specific point of flooding can help prevent flooding, with the **connectivity** of ponds, upland bogs, woodlands, wetlands and species-rich grasslands as well as Sustainable Urban Drainage schemes acting as giant sponges, absorbing and holding water and slowing down water run-off into rivers.

### Synergies and connections to other journeys



#### Journey to a healthier Wales

**Topic 3:** Community health and well-being



## Making **Simple** Changes

**Procure and plant only native trees** and shrubs as a first choice or ensure that every tree and plant that is planted has a 'value to nature' (i.e. for shelter, food, nectar sources, shade, nesting or breeding sites etc).

E.g. **Merthyr County Borough Council** have developed a list of trees that are suitable for planting in the area.

**Support people** you work with to care for local trees, with a particular focus on children and young people.

**On land you own, manage or work** with identify, assess and map existing important trees for protection.

**Take guidance on planting,** felling and replanting of trees from professionals.

**On land you own, manage or work** with: where traditional hedge-laying techniques are not feasible, consider [wildlife hedgelaying](#).

**Carry out [i-Tree surveys](#)** to understand the public benefit of a tree.

**Support the creation** and protection of community woodlands and community orchards.

Eg

E.g. Llynfi community woodland on **Natural Resources Wales** managed land (near Bridgend), promotes health and well-being, innovation, community engagement and delivery of landscape scale actions with multiple, social, economic and environmental benefits.

Eg

E.g. **Llyn Parc Mawr** – community woodland group on Anglesey: 50 acres of woodland managed by the community for the community, building pathways, planting trees, countryside management, training.

## Making **Simple** Changes

**Eg**

E.g. **Golygfa Gwydyr** – Social enterprise based in Llanrwst, works on Natural Resources Wales managed land, non-profit organisation, established in 2004, enhances social, environmental and economic resilience. Promotes and develops forestry skills.

**St**

**Incentivise and promote** the importance of natural gardens and driveways (for example through competitions).

**Ensure all your landholdings** are compliant with environmental legislation, to reduce potential for water pollution issues and minimise their local and global impacts.

**Install water efficient fixtures** in your buildings, such as toilets, water-less urinals and water butts on buildings. supply them to communities to conserve and utilise rainwater.

**Eg**

E.g. **Welsh Government** first installation of waterless urinals at the Rhyd-y-Car office, Merthyr Tydfil in February 2016. The pilot was exceptionally well received so further units are being installed at other offices.

HOME

## Being More **Adventurous**

**Identify and map areas** for future tree planting – target 20% tree cover in urban areas – with a diverse range of species, suitable for the climate, soil and giving a 'value to nature'.

**Eg**

E.g. **Denbighshire County Borough Council** are seeking to increase tree canopy in Rhyl (five year ambition of 18,000 trees planted), are working with NRW and the community on this with planting days etc. (p37 [Annual Report 2017/18](#))

**Plant, manage and/or restore connecting habitats** like hedges, trees and linear blocks of woodland. Facilitate natural regeneration (when seeds fall from trees and grow in situ) where appropriate.

HOME

**On land you own, manage or work** on ensure there is mandatory introduction of hedgerow management practices to eliminate 'flailed stumps', including rotational cutting and avoid fruiting and bird nesting.

**Work with others** to combat health threats to trees: planting strong seeds and saplings, maintaining the diversity of age and species, combatting invasive plants, infections and pests.

**St**

**Explore natural solutions** to local flooding such as [Sustainable Urban Drainage \(SuD's\)](#) systems which are multifunctional, and ensure there is provision for pollinators. There is new legislation on use of SUD's in all new developments <https://gov.wales/topics/environmentcountryside/epq/flooding/drainage/?lang=en>

## Being More Adventurous

**Create Rain Gardens**, ponds and wetlands to increase water retention and manage surface water entering sewers, in order to reduce flooding.

E.g. Wildlife Trust Rain Garden in **Swansea Vale Resource Centre** <https://www.welshwildlife.org/pressreleases/rain-gardens-for-people-and-wildlife-in-swansea/>

**Install Grey water recycling technology** in your buildings to reduce the use of drinking quality water for non-drinking needs such as flushing toilets.

Eg

E.g. **Denmark Farm** Water Sustainability Policy - having systems in place that save water and treat waste water using natural processes  
<https://www.denmarkfarm.org.uk/water-sustainability/>

**Increase areas** of innovative permeable outdoor surfaces for driveways, car parks and other developments which allow rainwater to filter through the surface into the soil below rather than run-off into drains or cause flooding.

Eg

E.g. **Singapore** - two-thirds of the city's surfaces - like roofs and sidewalks - are able to capture rainwater and deposit it to 18 reservoirs.

<https://www.smartcitiesdive.com/ex/sustainablecitiescollective/will-urban-green-infrastructure-help-mitigate-megadroughts/1047571/>

**Re-nature rivers and streams** (enabling them to hold more water and therefore alleviate flooding), using them as biodiversity corridors and as walking/bike paths.

Eg

E.g. **The Canal and River Trust** work across the UK maintaining waterways. <https://canalrivertrust.org.uk/enjoy-the-waterways/canal-and-river-wildlife/canal-habitats-for-nature>

## Owning your **Ambition**

St

### Collaborative or national actions

Be part of a **Clean Air Plan** for Wales.

**Prioritise** the restoration of Protected Ancient Woodland Sites to a more natural state, and the protection and management of ancient trees, in order to benefit the native wildlife and plants that rely on them.

Eg

E.g. **Natural Resources Wales'** Wentwood forest near Newport which has just been accredited under The Queen's Commonwealth Canopy initiative.

St

**Set targets** for stopping damaging Land Management Practices on floodplains and peatlands, in order to improve the capacity of these habitats to reduce flooding.

**Be part of** effective flood response and resilience plans at national and local levels, delivered in collaboration through multi-agency working.

Eg

E.g. **Mid and West Wales Fire and Rescue Service** were the lead for the All Wales Inland Water Group and planned a large-scale multi-agency flood response exercise which included a range of partners from Local Resilience Forums in Wales, and provided responders with a unique opportunity to test resilience plans and operational procedures in a challenging environment.

## Owning your **Ambition**

### Organisational actions

#### Collaborate with others

to ensure that the largest possible species of street trees are planted in urban areas, to maximise benefits to biodiversity at maturity, with 'right tree in right place' considering factors such as climate, soil and value to nature.

**Identify opportunities** for Payments for [Ecosystem services](#).

**Avoid being part of developments** in flood risk areas, to reduce the need for expensive flood management systems.

#### Prioritise catchment-

based solutions to flooding, including community flood groups in their planning and implementation, instead of a localised view.

E.g. Greener Grangetown collaborative project between **City of Cardiff Council, Dŵr Cymru Welsh Water and Natural Resources Wales.**

to better manage rainwater by catching, cleaning and diverting rainwater directly into the River Taff instead of pumping it over 8 miles through the Vale of Glamorgan to the sea.

<https://greenergrangetown.wordpress.com/about/>

E.g. Dwr Cymru Rainscape **Llanelli** Project: developing and using new, innovative solutions to manage the amount of surface water entering sewers

<https://www.dwrcymru.com/en/My-Wastewater/RainScape/RainScape-Llanelli.aspx>

E.g. Montgomeryshire Wildlife Trusts Severn Farm Ponds,

#### **Welshpool**

<https://www.montwt.co.uk/nature-reserves/severn-farm-pond>

## Other examples and resources

### Natural Resources Wales

Urban Trees

<https://naturalresources.wales/about-us/what-we-do/green-spaces/urban-trees/?lang=en>

In 2008 the **Welsh Government** made a pledge to plant a tree for every child born or adopted in Wales

<https://gov.wales/topics/environmentcountryside/forestry/plantatree/?lang=en>

Valuing **Bridgend's** Urban Trees

<https://cdn.naturalresources.wales/media/679644/eng-penarbontarogwr-bridgend-i-tree-infographicv2.pdf?mode=pad>

### Charter for Trees, Woods and People

<https://treecharter.uk/pdf/Charter-for-Trees%2CWoods-and-People.pdf>

### Trees and Design Action Group:

First Steps in Urban Air Quality  
<http://www.tdag.org.uk/first-steps-in-urban-air-quality.html>

### Woodland Trust Free Tree Packs

<https://www.woodlandtrust.org.uk/plant-trees/free-trees/>

### Forest Research Improving Air Quality

<https://www.forestresearch.gov.uk/tools-and-resources/urban-regeneration-and-greenspace-partnership/greenspace-in-practice/benefits-of-greenspace/improving-air-quality/>