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**Natural
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Wales

Introducing Sustainable Management of Natural Resources



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Wales' natural resources provide our basic needs; the air we breathe, the water we drink, and the food we eat. They give us energy, prosperity and security; they protect us and make us healthier and our lives better.

By unlocking the potential that lies within the natural resources of Wales, by managing them and using them in a more joined up way, they can help us face the challenges ahead.



The Challenge

Wales faces many challenges, such as securing energy and fuel supply, creating jobs and income, tackling poverty and inequality, tackling the threats of climate change and flooding, and improving people's health and well-being.

Meeting these challenges needs fresh ideas, a radical new way of thinking and doing things. This includes how we maintain, improve and use our natural resources.

A poorly managed environment increases the long-term risks to our well-being and ultimately makes these challenges worse.

A healthy and resilient environment helps sustain people and our economy. We need to look for ways that our natural resources can provide multiple benefits for people and nature, now and into the future, whilst ensuring we continue building their resilience.

When our environment is working at its best, society as a whole thrives.



The Opportunity

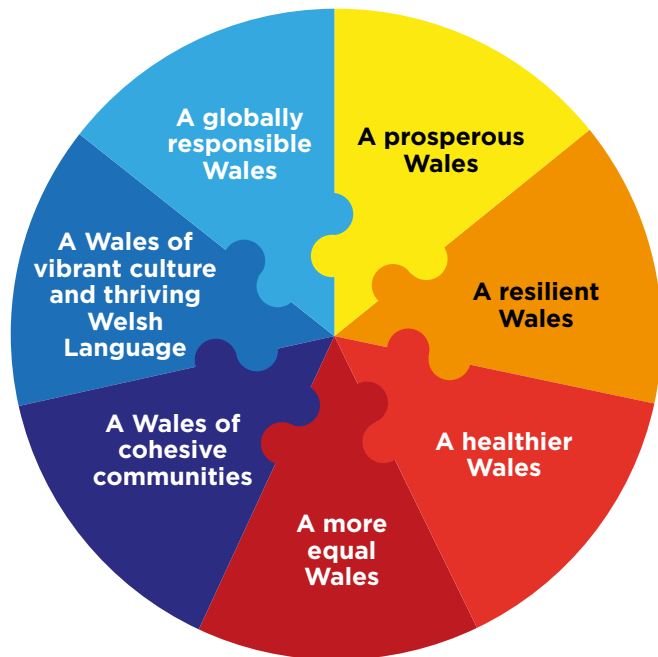
The Environment (Wales) Act and the Well-being of Future Generations (Wales) Act together create modern legislation for managing Wales' natural resources and improve the social, economic, environmental and cultural well-being of Wales. They will help us tackle the challenges we face and to take better advantage of the potential opportunities for Wales. The Environment Act focuses on building resilience into our ecosystems and recognising the benefits that they provide if we manage them in a smarter way.

What is sustainable management of natural resources?

Sustainable management of natural resources is defined in the Environment Act as:


“using natural resources in a way and at a rate that maintains and enhances the resilience of ecosystems and the benefits they provide. In doing so, meeting the needs of present generations of people without compromising the ability of future generations to meet their needs, and contributing to the achievement of the well-being goals in the Well-being of Future Generations Act.”

Well-being goals



Natural Resources Wales' purpose is to pursue sustainable management of natural resources. We will apply a specific set of principles while maximising our contribution to the well-being goals.

What are the principles?

Principles of sustainable management of natural resources		
	Adaptive management	manage adaptively by planning, monitoring, reviewing and where appropriate, changing action
	Scale	consider the appropriate spatial scale for action
	Collaboration and engagement	promote and engage in collaboration and cooperation
	Public Participation	make appropriate arrangements for public participation in decision-making
	Evidence	take account of all relevant evidence, and gather evidence in respect of uncertainties
	Multiple benefits	take account of the benefits and intrinsic value of natural resources and ecosystems
	Long term	take account of the short, medium and long term consequences of actions
	Preventative action	take action to prevent significant damage to ecosystems
	Building resilience	take account of the resilience of ecosystems, in particular the following aspects: <ul style="list-style-type: none"> (i) diversity between and within ecosystems; (ii) the connections between and within ecosystems; (iii) the scale of ecosystems; (iv) the condition of ecosystems (including their structure and functioning); (v) the adaptability of ecosystems

The principles and the well-being goals will change the way we work.

Why are they important?

We must apply the principles to fulfil our purpose. Applying all of the principles will help us to understand the root causes of the challenges facing our natural resources, to recognise the unique characteristics of a place and its people, and to develop nature-based and joined up solutions.

How are they different?

The principles are different because:

- they require us to think about the complex relationships between nature and people over the long term.
- they help us to think about the benefits that we get from natural resources now and in the future, recognising the ways they support our well-being.
- they encourage us to think about ways of making our ecosystems more resilient.

And perhaps most important of all,

- they mean involving people in tackling these challenges from the start to identify the connections and opportunities to manage things better.

We accept we don't have all the answers and we're open to new ideas.

What will change?

Whilst many of us will already be striving to deliver in this way, these principles will mean some new ways of working for us and the organisations we work with.

To help us prepare for the new legislation, in 2014 we set up three natural resource management trials to test what works and doesn't work, and then apply the learning across our organisation.

Area Trials – sustainable management of natural resources in practice

The purpose of the trials was to:

- investigate what sustainable management of natural resources means within a local context.
- think about how we apply our new duties under the Environment Act and the Well-being of Future Generations Act.
- inform changes to NRW's ways of working in line with the new legislation.

The trials were an opportunity to explore how we apply the principles in practice to shape the implementation of our new duties in the Environment Act. Working closely with the people who live and work in the areas we wanted to identify priorities, risks, and opportunities for sustainable management of natural resources, and develop projects to implement new ideas.



Where were the trials?

The three trials were in the Rhondda and Tawe in South Wales, and Dyfi in Mid Wales. These areas were chosen to represent a variety of places and interests. Each trial was based on a catchment, but was chosen because of its different environmental, economic and societal circumstances.



Dyfi



Tawe



Rhondda

What did the trials do?

- We deliberately took an open approach to investigating priorities, risks and opportunities in each of the trial areas.
- We were flexible and adaptive, taking advantage of opportunities and trying out new ideas.
- We involved local people, partners and businesses throughout the trials to test ideas, gather evidence, and agree priorities.

As the trials preceded the Natural Resources Policy Statement and the Environment Act they did not have the benefit of a national policy steer on sustainable management of natural resources. We used a similar set of principles to the ones that are now in the Act.

How did the trials do?

The trials demonstrate that applying the principles makes a difference. It encourages more rounded and integrated approaches to tackling environmental, economic and societal issues, seeking solutions that deliver multiple benefits whilst building resilience.

Not enough time has passed to determine whether the projects within each trial have delivered the outcomes they were designed to achieve. But we're continually learning and monitoring progress and will adapt accordingly.

- We've received positive feedback from our partners about the approach. They feel more engaged with us, and welcome the opportunity to play a role in finding solutions.
- Learning is being used to assess our own business processes, and whether they can be changed to better suit these new ways of working.
- The approach has allowed us to work with our partners on big societal issues, which in the past were considered too challenging or not within our remit.

A snapshot of case studies follows. Further information about the trials, the nature of the work undertaken, and the way the principles were applied, is also available.

Case study

Healthy Hillside: partnership approach to help tackle wildfires in the Rhondda

Healthy Hillside is a collaborative approach to better manage the Rhondda's natural resources to help minimise the impact and severity of wildfires.

Wildfires deliberately caused by arson affect the South Wales valleys every year.

When we spoke to local people, tackling this problem was a priority for them.

The risks associated with wild fires are broad and as well as environmental damage include potential damage to life, property, livelihoods and health.

The **opportunity** was to implement proactive land management techniques, which can help reduce the extent of wildfires and prevent them spreading across whole hillsides, devastating local wildlife and endangering communities.



In spring 2015, there were 513 deliberate fires in Rhondda Cynon Taf. 244 of these were in the Rhondda.



Adaptive management

The partnership approach influenced the Fire and Rescue Service's way of working in the Rhondda to include pro-active wildfire training, incorporate land management techniques such as controlled burns and cutting of fire breaks, and purchase new machinery. This is in addition to their education and awareness raising work with communities on the impacts of wildfires on people and wildlife.



Collaboration and engagement

Nine core partners with support from local farmers and volunteers who were engaged from the outset. Prior to our engagement this was not a significant priority for NRW in the Rhondda.



Building resilience

Restoring the hillside habitat to reduce fire risk enhances the resilience of the ecosystem and improves resilience to climate change.



Multiple benefits

Improving the area for wildlife, savings to the local economy, improvements to air and water quality, better access for recreation, innovative working between partners.



Scale

Initial focus on the Rhondda was due to the high number of fires, and as a good opportunity to develop a collaborative approach. If successful, it can be up-scaled across the South Wales valleys.



Long-term

The new approach to introduce sustainable land management options and joined up working between organisations will ensure the long term success of the project.

Well-being goals

Sustainable management of the landscape to restore habitat for wildlife and improving access to the hillsides will make the Rhondda a more resilient, healthier and prosperous place to live. We will need to continue to consider how working to the well-being goals can help improve the wider benefits of this project.

Case study

Swansea Eastside connections

The project was to explore opportunities to connect people to the natural resources of the eastside of Swansea to maximise benefits for health and well-being in particular.

Kilvey Hill is a prominent feature on the Swansea landscape, situated close to the east of the city, or “Eastside”. It’s flanked by other fantastic, but overlooked natural resources: Crymlyn Bog Special Area of Conservation/Ramsar site, the Tennant Canal and the River Tawe. All these areas are currently isolated and local people told us that Kilvey Hill especially was under-utilised as issues such as fires, illegal off-roading and poor access had given it a poor reputation.

We manage some of the land in this part of Swansea. The **opportunity** therefore was to consider this area as a whole, and to use the principles to explore different options for the management of Eastside, building collaborative approaches to rejuvenating the landscape and contributing to health, well-being and economic benefits.



Evidence

By mapping deprived areas alongside distance to accessible green spaces, we’re able to see which communities have both a deficit of green-space and poor health, and therefore can focus on connecting these communities to their natural resources.



Long Term

The project provides the foundation for future work to maximise the benefits provided by the area’s natural resources. We took into account some of the proposed long term changes to Swansea to help us identify potential opportunities that would deliver for the future.



Scale

The scale has been chosen to reflect both the communities at greatest risk of poor health, and the ecosystems that will benefit from this approach. We increased the scale to include other important green and blue spaces that enables us to think about how to improve the connections between them.



Multiple benefits

The project will deliver multiple benefits by improving health and well-being of local people, biodiversity, providing opportunities for tourism, recreation, access to green spaces and restoring the natural beauty of the area.



Building resilience

This project will better manage the woodland areas of Kilvey and make it more diverse and resilient. Improving access routes for people between green spaces may also provide useful wildlife corridors.

Well-being goals

The project will ultimately lead to initiatives that will improve health by encouraging outdoor recreation, provide potential employment through tourism, and targeting certain communities to create a more equal Wales. Going forward the project will need to continue to consider the well-being goals for example, through designing initiatives that help improve health.

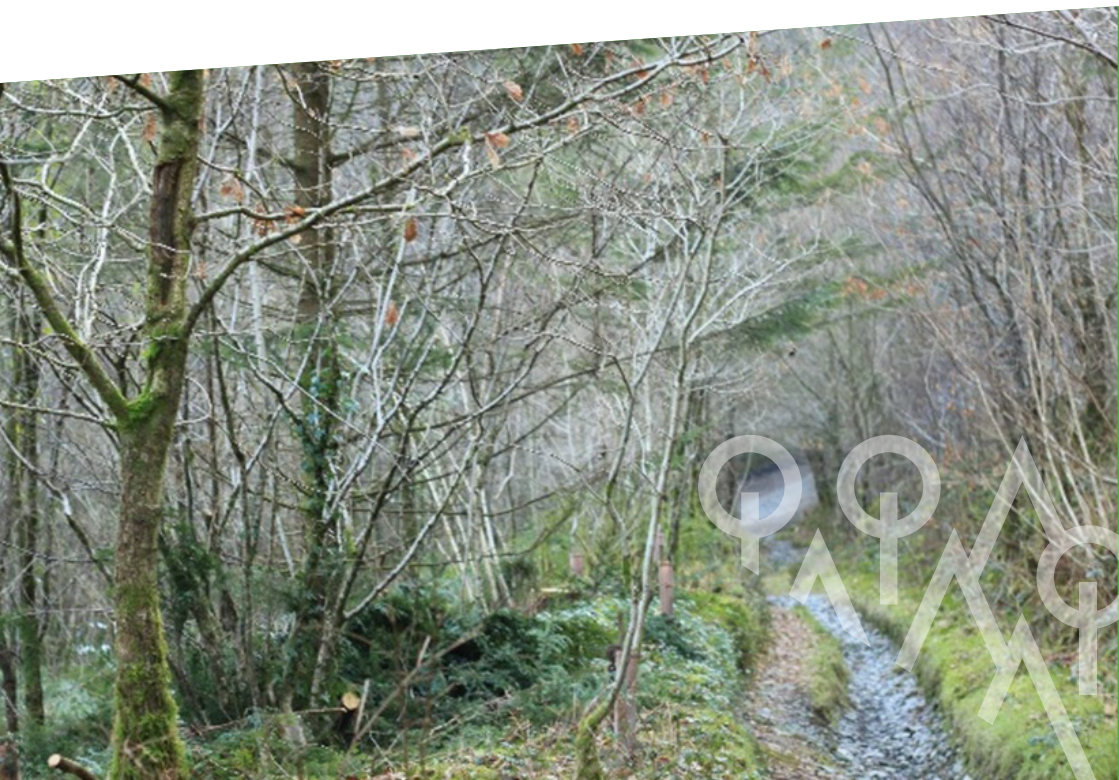
Case study

Restoring an ancient woodland site in the Dyfi

The project used a mix of mapping and modelling tools, and local knowledge to identify the best sites for restoring plantations on ancient woodland back to mixed broadleaved woodland within the Dyfi.

Over the years fragmentation and planting conifers on broadleaved woodland sites has created risks to the long-term resilience of species that rely on them, as well as their wider benefits. Woodland provides flood protection, controls soil erosion by slowing surface water run off, and stores carbon. Whilst both types of woodland deliver a range of benefits, broadleaved woodland is considered more suited to our native wildlife than conifers, offering greater biodiversity benefits.

In early 2015, contractors removed Western Hemlock and Rhododendron (non-native species) from the site at Cwm Gleswrch. This **opportunity** significantly opened up the canopy allowing species such as Oak, Ash and Birch to be re-established.



Evidence

Several sites were initially identified by the modelling but the final site was chosen by speaking to local people and taking account of site conditions and scale.



Long Term

The work has reduced the threat to the future of the ancient woodland. Further work in the area will ensure the site thrives as part of a resilient woodland network.



Scale

The scale was chosen based on the extent of land that we manage in the area, and the potential benefits for connectivity.



Multiple Benefits

The work has created good conditions for biodiversity to thrive, and created a better environment for visitors, and has already been used for educational field visits. As the site will no longer be clear felled, there may also be benefits to water quality in the future.



Building Resilience

This was central to the aim of the project - to build a more resilient broadleaved woodland network in the Dyfi.

Well-being goals

Wales' woodlands makes us healthier, vibrant and globally responsible by providing a space for recreation and education and employment. They're also a source for fuel, reduce flooding and store carbon. These were important considerations in the design of the project.

What did we learn?

- We need to work and engage at a scale which is both right for the issue, and is meaningful to our stakeholders.
- We need to consider the root causes of issues rather than reacting to the immediate and visible problems (treating the symptoms).
- We need to be ambitious and challenge existing practice if it is not delivering the right outcomes for natural resources, for people and for the economy.
- We need to be better networked and involve people earlier and more often.
- We need to talk to people outside of our normal circles.
- We need to involve experts and local people to fully understand what the evidence is saying about a problem or issue.

Next steps – embedding the learning

We are committed to embedding sustainable management of natural resources and the learning from the trials throughout the organisation. It will take time for us all to adapt to these new ways of working but we want to share our experiences with others.

The lessons from the trials also help shape how we prepare to develop Area Statements, which is a requirement of the Environment Act. In the future Area Statements will help deliver the Welsh Government's Natural Resources Policy, by identifying priorities, risks and opportunities for sustainable management of natural resources, and help us plan and prioritise working in collaboration at a local level.

If you'd like to know more, contact smnr@naturalresources.wales