The Future Generations Report 2020

Let's create the future together

Chapter 3
Progress against the well-being goals

Future Generations Report 2020

Progress against the well-being goals:
A Resilient Wales

A Resilient Wales

A Resilient Wales

Our natural environment is vital for our well-being. Wild and natural landscapes sustain us; they give us clean water to drink and fresh air to breathe, they store carbon and protect our homes from flooding, and they can help make us happy and healthy. Nature gives us the foundations for our economy, energy system and our food and farming. Pollinators alone, for example, are worth more than £430m a year to UK agriculture. Nature's health is intrinsically linked to our own.

From watching bees and butterflies and absorbing the colours of plant life, to noticing the calming rustle of trees in the wind; nature gives us moments of inspiration and reflection and places we can escape to and relax in. Biodiversity and nature's contributions to people are our common heritage and humanity's most important life-supporting 'safety net'.

However, our safety net is almost stretched to breaking point, and nature is fading away from our lives. We are in the midst of an ecological and biodiversity crisis on par with the climate emergency. We know that 60% of species are in decline and that one million species globally are threatened with extinction; including 40% of insects globally. Without targeted intervention in Wales, lapwings are now at risk of extinction, and red squirrels could similarly be lost.

"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."

The Well-being of Future Generations Act (2015)

It's not just wildlife that's losing out; it's us too. We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide. Nature's health and people's health are linked, and the path to recovery starts with a plan for putting wildlife back in our lives.

"My vision for Wales is one full of wildlife. It is imperative that we preserve the wealth of beauty held in our small nation. I remember my Taid talking about how many birds there used to be over Gwynedd and fish in the rivers. But it's a different story now. I want to see Wales as he saw it. And I want to be able to share that Wales with my son and future generations – one full of nature… A vision for 'Our Future Wales' must prioritise investing in nature."

Iwan Rheon, Actor and WWF Cymru Ambassador
in a letter to me

The vision – A Resilient Wales in 2050

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

Our World-leading legislation and policies, together with the commitment and cooperation of government, public bodies, business and communities, will aim to help protect and restore nature, and the wide range of benefits it provides. (A Prosperous Wales, A Healthier Wales, A Wales of Vibrant Culture and Thriving Welsh Language and A Globally Responsible Wales)

At a landscape scale, cross-sector cultural partnerships will aim to restore Wales' ecosystems; increasing their resilience. (A Wales of Vibrant Culture and Thriving Welsh Language). In communities, people will be working together to help nature's recovery and improve their local areas (A Wales of Cohesive Wales and A Healthier Wales). Wales' peatlands, woodlands and moorlands will slowly be restored; bringing a wide range of benefits to wildlife, carbon storage and reduced flood risk.

Wales will have a World-leading terrestrial and marine nature network, that will be in favourable condition. These sites will be bigger, better connected, and the protected sites network will be completed. (A Globally Responsible Wales)

Targets for increasing organic matter will improve soil health and conservation on farmland, and pollution will be reduced. Wales will produce high-quality, nutritious, sustainably grown food, while also enhancing the natural environment. (A Prosperous Wales and A Globally Responsible Wales)

A report by the RSPB found that nature-friendly hill farms can be more profitable. Looking at the unique challenges upland farmers face, the report uncovered evidence demonstrating that the current business system makes it harder for farmers to turn a profit, which can be improved by taking a lower input, nature-friendly approach, which relies only on the farm's natural assets, i.e. grass available on the farm.

The Nature Friendly Farming Network are uniting farmers who are passionate about wildlife and sustainable farming. They provide a platform for members of the farming community to share their knowledge, attend training and events and spread the benefits of sustainable nature-friendly farming at a UK level.

In Japan, 'Shinrin yoku', which translates as 'forest bathing', means taking walks in woods for both spiritual and physical well-being. There are 48 officially designated trails, and approximately a quarter of the population have tried it.

At Llandough hospital in the Vale of Glamorgan, Ein Berllan (Our Orchard) is a community orchard where the health board is working with partners to establish an ecological community health park that benefits wildlife, plants and people. It is believed to be the first of its kind at a hospital site in the UK. 'NHS Forest' is also promoting biodiverse greenspace in NHS grounds.

Everyone in Wales will be able to access natural greenspace that is nature rich. This will increase physical activity (especially in children); improve mental well-being; reduce exposure to environmental hazards and air pollution; improve air quality; and bring people together in community activities. (A Healthier Wales, A More Equal Wales and A Wales of Vibrant Culture and Thriving Welsh Language)

The diversity of street trees, gardens, green roofs, community forests, parks, rivers, canals and wetlands will be delivering a wide range of benefits to people and wildlife, while providing resilience to a changing climate. (A Wales of Cohesive Communities and A Globally Responsible Wales). Daily contact with biodiverse rich greenspaces will be helping people's physical and mental health. (A Healthier Wales and A More Equal Wales)

Placemaking in Wales will consider future population needs for local areas and wider social, economic, environmental and cultural factors. People will be directly involved in designing and delivering interventions that encourage access to, and use of, available spaces, with a diverse representation of people involved. (A Wales of Cohesive Communities, A More Equal Wales and A Wales of Vibrant Culture and Thriving Welsh Language)

Wales' towns and cities will become pesticide-free – following the example of France, and major cities in the world, such as Barcelona, who have banned the use of pesticides by public bodies in parks and gardens.

The city of London became the world's first 'national park city.'

Sustainable "Foodscaping" in Geneva, Switzerland, where communities have worked together; neighbours consult and plan what each will grow so they can share and trade food.

Cities such as Milan, Melbourne, Berlin and Shanghai, are using nature to tackle policy problems, such as urban greening for city cooling, improving citizen engagement to restore public land and flood prevention.

In Seoul, South Korea, a plant village has been realised on a former inner-city highway transforming it into a public kilometre long park with 24,000 planned plants (trees, shrubs and flowers). The Cheonggyecheon River, covered by transport infrastructure for many years, has been restored into a river park attracting 60,000 visitors a day, driving economic benefits and improving air quality in the city.

Climate education has been added to the national curriculum in Italy, making it the first country to introduce mandatory climate education in state schools.

The benefits of a healthy, biodiverse environment will be understood and appreciated across all areas of work and sectors, with nature embedded in all decision making through plans, policies and developments. (A Prosperous Wales and A Globally Responsible Wales)

Current and future generations will be eco-literate – understanding the balance of natural systems that make up life on Earth and reducing the impact of climate change and biodiversity loss. (A Prosperous Wales and A More Equal Wales)

Time in nature will positively impact on young people's education, physical health, emotional well-being, and personal and social skills. Children will be connected with nature, and as a result, will enjoy working together to improve it. Schools will also have biodiverse green infrastructure. (A Healthier Wales, A More Equal Wales and A Wales of Vibrant Culture and Thriving Welsh Language)

The natural environment will play its part in helping to reduce flooding. Nature-based solutions, based on whole catchments and collaborative cross-sector working, will help prevent flooding, connecting ponds, upland bogs, woodlands, wetlands and species-rich grasslands. (A Globally Responsible Wales)

In urban areas, sustainable urban drainage schemes will be absorbing and holding water and slowing down water run-off into rivers. Trees, green walls and green roofs will improve the feel of towns and cities, while also reducing the risk of surface water flooding. Green bridges will allow wildlife to move safely over our transport networks. (A Wales of Cohesive Communities and A Globally Responsible Wales)

©HarryJBurgess

Black2Nature is an organisation that works to get more visible minority ethnic (VME) people engaged with nature. Its founder, Mya-Rose Craig, has, for example, organised weekend nature and zero-waste camps for VME children and teenagers from inner-city Bristol.

Greener Grangetown is a collaborative project between the Cardiff Council, Dŵr Cymru/Welsh Water and Natural Resources Wales, to better manage rainwater, making Grangetown a cleaner, greener place to live.

New York City passed a green new deal, requiring 'green roofs' on new buildings as part of its 'Green Roofs' Act'. The $14 billion Act is working towards a singular goal: a 40% reduction of NYC's greenhouse gas emissions by 2030, and carbon neutrality by 2050.

The City of London is using green infrastructure to protect people from air pollution. It's also intended to promote healthier living, lessen the impacts of climate change, improve air quality and water quality, and improve biodiversity and ecological resilience.

We will reduce our contribution and impact on the planet's natural resources, and our workforce will be at the forefront of the green economy. Industries will be innovative and low carbon, with a growing 'green economy' in renewable energy green technologies and nature restoration. (A Prosperous Wales)

Biodiverse green and blue infrastructure will be helping to improve air quality, with trees, hedges, woodlands, parks, and green walls absorbing carbon dioxide; reducing the risk of flooding and providing habitat for wildlife. (A Healthier Wales, A Wales of Cohesive Communities, and A More Equal Wales)

Racing ahead of other counties, Wales will meet its statutory climate change targets. With rural and urban environments adapting, there will be growing interest and investment in areas more resilient to a changing climate. In turn, Wales will minimise the impacts of a changing climate on people and the natural environment. (Prosperous Wales /Globally Responsible Wales)

My contribution to this vision is outlined through my work on my areas of focus and set out in detail in the chapter on My Focus.
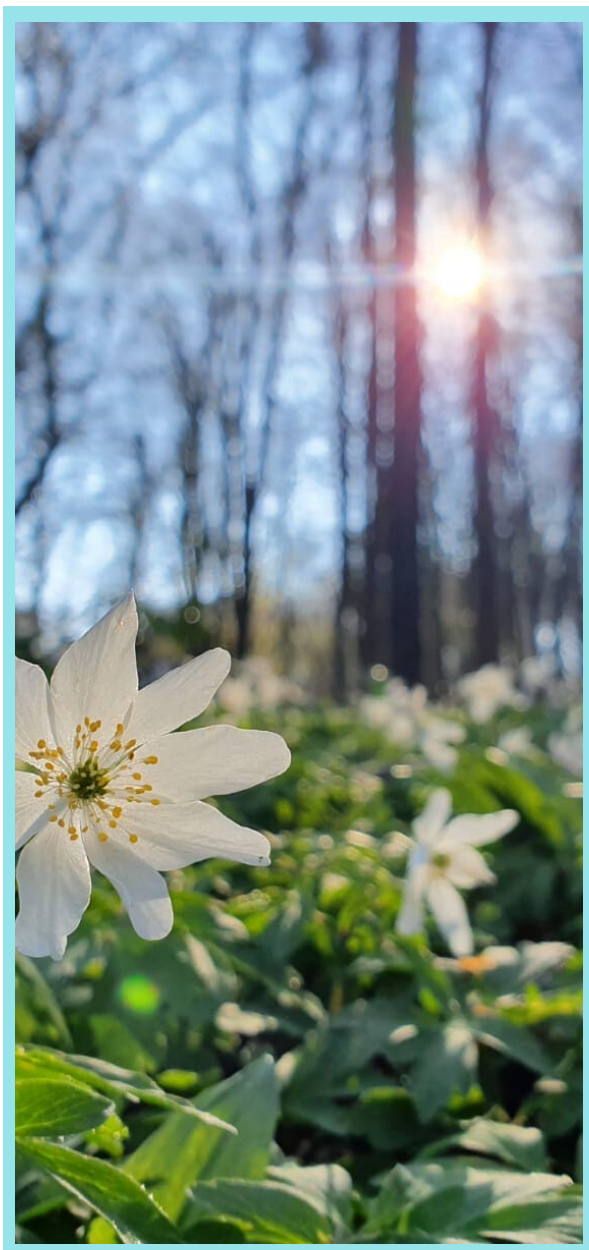

© Jeremy Segrott

The City of Rotterdam is striving to become a circular economy, by factoring circularity into its tendering and procurement processes, employing a firm to help steer companies to think circular, and empowering has entrepreneurs to make innovative products out of rubbish.

People's perception of progress towards this goal

Listening to what people think and believe is an important part of involvement. That is why, in this section, I wanted to give a flavour of what people have told me, since the beginning of my term and in relation to this report.

Approximately a fifth of all responses on the People's Platform related to biodiversity, nature and climate change.

People's views included:

- "There are widespread concerns about the loss of biodiversity in Wales, and recognition that this threatens our species."

- "We need to reverse biodiversity loss so future generations can enjoy nature and the benefits it provides."

- "People are alarmed at the effects of plastic on the environment and marine life, and cite the important role of regulation and retailers reducing/removing their use of it."

- "People would value help with understanding the impact of what they do and buy."

- "We're not always good at recognising or valuing the benefits outdoor spaces bring for physical and mental health."

- "Young people in Wales should be better prepared with skills for a high-tech, circular and restorative economy. And the skills shortage in the green energy sector should be addressed."

- "The threat of climate change is real, but we're still very attached to our way of life, and not everyone will give that up lightly."

- "Farming is essential to the well-being of current and future generations in Wales, and we have an opportunity for it to not only deliver quality food, but also restore nature, delivering wider benefits for people and the environment."
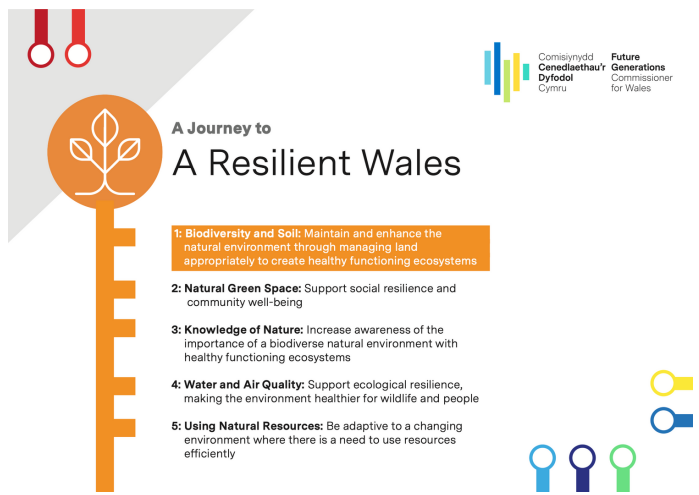
People's perception of progress towards this goal

I would like to say thank-you to the following for their contribution to my work on this goal.

Many organisations and stakeholders provided input into the Journey to a Resilient Wales, and helpful and insightful comments on drafts of this report. I want to thank in particular Natural Resources Wales for the evidence and feedback they provided. Thank you also to RSPB Cymru and Size of Wales for their help in reaching young people through their Wish Book and Mock-Cop events. Finally, I would like to thank WWF Cymru, Oxfam Cymru, Food Policy & Practice Wales, Wildlife Trusts Wales, Coed Cadw - the Woodland Trust, the Marine Conservation Society and other environmental organisations who have continually engaged and contributed to the work of my office.

Alison Colebrook
Goal Convenor for a Resilient Wales on secondment from Wildlife Trusts 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

In addition to this involvement, I have also have carried out my statutory duty to monitor and assess progress by public bodies in meeting their well-being objectives and the requirements of the Act in general, and conducted research. As a result of these activities, I have identified the challenges and opportunities as set out in this chapter.

Your Voice

In engaging with over 5,000 people, the views below are representative of the key issues which have been shared with my office in forming this report:

"Currently 'consumers' have little choice but to bring plastics and other unsustainable materials into their homes - We need legislation that forces suppliers and retailers to reduce or remove plastics."
Our Future Wales conversation Wrexham

"Heavy industry, towards which the skill set in Wales has traditionally been targeted, has vanished. Young people in Wales should be provided with the skillset necessary for a high-tech, green economy. The skills shortage in the green energy sector should be addressed." Diverse Cymru July 2019

"We need engagement helping people understand the impact of what they do/buy."
Our Future Wales conversation Ebbw Vale

The Future Generations Commissioner has an important role in ensuring that protecting and restoring our natural environment is high up on the political agenda and to help remind public bodies of their responsibilities to the natural environment." (The People's Platform)

Wales needs to invest in developing the next generation of horticulturists and ensure that opportunities are created for them to develop successful food businesses."
(The People's Platform)

"Accessible and thriving outdoor spaces that are used responsibly. Recognising their benefits for physical and mental health." Our Future Wales conversation Llandrindod

Challenges and opportunities for change

Biodiversity, 'the variety of all life on earth', has seen an overall 60% decline in species across the globe since 1970. With the global population expected to reach 8 billion by 2030, this will place ever-increasing pressure on our natural resources.

In 2019, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services found that nature is declining globally at rates unprecedented in human history, — and the rate of species extinctions is accelerating (one million species were identified as being at risk of extinction). This is now likely to have grave impacts, on people around the world.

Its report, the most comprehensive assessment of its kind, highlights the main drivers of biodiversity loss. In order of significance, these are: changes in land and sea use, direct exploitation of organisms, climate change, pollution including pesticides, and invasive alien species. It also identifies that 'transformative changes' are needed to restore and protect nature.

"The health of ecosystems on which we and all other species depend is deteriorating more rapidly than ever. We are eroding the very foundations of our economies, livelihoods, food security, health and quality of life worldwide."

Sir Robert Watson, Chair of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

Similarly, WWF's Living Planet Report 2018 provides the scientific evidence that shows how unsustainable human activity is pushing the planet's natural systems that support life, to the edge. For example, the latest index shows an overall decline of 60% in population sizes between 1970 and 2014. Furthermore, in the recent 'Global Risks Report 2020', the World Economic Forum stated that for the first time in the survey's 10-year outlook, the top five global risks, in terms of likelihood, are all environmental.

The evidence is overwhelming: we're living in an area of unprecedented change when it comes to our planet. Research is demonstrating the natural world's incalculable importance to our health, wealth, food and security. It shows that goals for conserving and sustainably using nature and achieving sustainability cannot be met by current trajectories, and may only be achieved through transformative changes across economic, social, political and technological factors.

However, while we can easily feel downhearted about the state of our natural environment, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services also highlight that it is not too late to make a difference; and identify solutions including policy tools, options and exemplary practices.
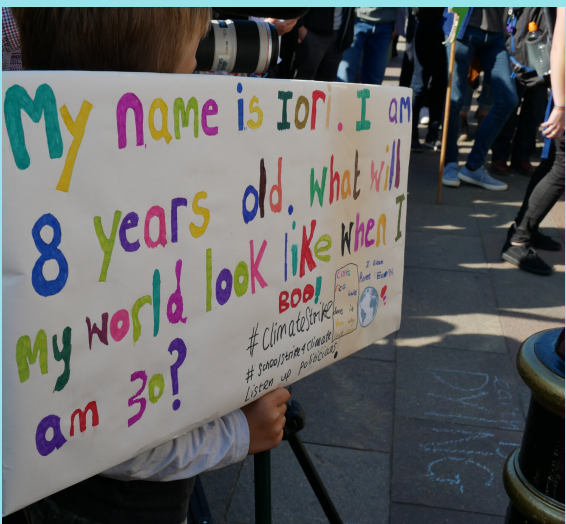
In Wales, we have the legislation and policies in place to protect and restore nature and take a more integrated approach. However, we must understand that reversing biodiversity loss is not a 'nice to have'. It is essential if we are to survive as a species ourselves. It is not too late to make a difference, but only if we start taking action now, at every level.

Maintain and enhance the natural environment through managing land and sea appropriately to create healthy functioning ecosystems

What future generations need

When natural resources flourish, society and the economy thrive as well. We need to improve the resilience of our ecosystems, enhancing the benefits they provide and reversing the loss of biodiversity. Given the scale of this challenge, we need to act with urgency.

Where we are now

Biodiversity - the variety of all life on earth - has seen an overall 60% decline in species across the globe since 1970

The State of Nature report is a health check on how the UK's wildlife is faring, with conservationists and researchers from over 70 organisations, including government agencies, working together to produce the respective reports. It describes the UK as "among the most nature-depleted countries in the world".

The Summary for Wales highlights that losses have been caused by a combination of woodland management, farm and fisheries management, pollution from fertiliser and plastic, increasing urbanisation, climate change and invasive species. It also points to reductions in funding; constraining the ability of public sector organisations to act:

- 73 species of the 3,902 assessed have been lost, with turtle doves and corn buntings gone from Wales' skies
- Numbers of butterflies have fallen by 52% since 1976
- Wales is in the worst 25% of countries for biodiversity loss, of the 218 countries assessed globally

The State of Natural Resources Report, produced by Natural Resources Wales, shows that no ecosystem in Wales is currently showing all the attributes of resilience. Most of Wales' protected site network is in unfavourable condition. The last review of favourable condition of Sites of Special Scientific Interest in 2006 highlighted that 68% were in unfavourable condition and 71% of assessed habitat features were judged to be in unfavourable condition. Approximately 75% of internationally important Special Areas of Conservation habitats in Wales are in unfavourable condition today.

Despite this, I am encouraged by the State of Nature report saying there is "room for cautious hope" relating to the increase of woodland cover across Wales, otters recovering from the brink of extinction and the range of conservation initiatives aiming to help nature restoration.

We have an opportunity in Wales to work together and restore our natural environment through the Environment (Wales) Act 2016 which introduces the sustainable management of natural resources

The State of Natural Resources Report sets out the national evidence base on the resilience of ecosystems in Wales, and the Natural Resources Policy sets out the national priorities:

- Delivering nature-based solutions
- Increasing renewable energy and resource efficiency
- Taking a place-based approach

The Natural Resources Policy also states that to build resilience into our ecosystems, we need to:

- proactively develop resilient ecological networks to maintain and enhance the wider resilience of Wales' ecosystems;
- improve the condition of our ecosystems;
- and reduce and better manage the pressures and demands on ecosystems and natural resources

Natural Resources Wales' Area Statements will aim to help deliver these across Wales, and Section 6 of the Environment (Wales) Act introduced an enhanced biodiversity and resilience of ecosystems duty for public authorities in Wales.

There are 68 well-being objectives or steps (out of a total of 295), set by 33 public bodies, that broadly relate to the natural environment. Within these, there are some examples where biodiversity and nature is explicitly referenced. For example:

Brecon Beacons National Park's step to 'Work with Local Nature Partnership members to develop nature recovery delivery plans'.

Swansea Council's step to 'Undertake a preliminary biodiversity audit of Council owned land and where possible, manage our corporate assets for the benefit of biodiversity and natural resources'.

Carmarthenshire Council's step to 'demonstrate its compliance with the Biodiversity & Resilience of Ecosystems Duty'.

At a strategic scale, I'm excited by the potential of:

The Gwent Green Grid Partnership, where representatives from 5 Public Services Boards are working together to improve the health of Gwent's natural assets, maximising the well-being benefits that they provide now and in the future.

At a more local scale, there are examples like:

Pembrokeshire, who have agreements for 38 hectares of hay meadow management and restoration in place, forming a chain of land managed for wildlife, and at an office/building scale, Natural Resources Wales demonstrating the difference to nature reduced grassland management makes at their offices in Bangor, resulting in a rich grassland and a large number of orchids
.

Well-being objectives and steps relating to the 'environment' set by many public bodies do not reflect the definition of the 'resilient Wales' well-being goal, and/or are reliant on other strategies, duties or plans

While it is important that well-being objectives are connected to other statutory and policy requirements, I have found that a specific focus on meeting other duties can result in public bodies missing opportunities to connect thinking and planning on objectives relating to a Resilient Wales to other well-being objectives. They are rarely integrated with other objectives, and often focus on areas such as recycling, flooding, cleanliness, fly-tipping, and reducing emissions.

While these are all important areas, it demonstrates a lack of understanding of the definition of each of Wales' 7 well-being goals. For example, using resources efficiently, which includes minimising and reducing waste, is more aligned within the definition of a prosperous Wales.

With the exception of Wales' 3 National Parks, Natural Resources Wales and a few other examples, this both explains and demonstrates a lack of progress in helping achieve 'a biodiverse natural environment with healthy functioning ecosystems' in Wales.

A focus on meeting the resilient Wales well-being goal, alongside requirements of the section 6 duty of the Environment (Wales) Act, may also be driving different approaches amongst some public bodies.

The Environment (Wales) Act requires public authorities to seek to maintain and enhance biodiversity so far as consistent with the proper exercise of their functions and in so doing, promote the resilience of ecosystems. They are required to produce a plan and report on what they have done to comply with the duty, with the first submission due at the end of 2019 (and then at the end of every third year after 2019). From the information currently available, it appears (at the time of writing: April 2020), only a handful of public bodies have submitted reports and even fewer published plans.

It is therefore difficult to understand and assess where public bodies are on embedding the consideration of biodiversity and ecosystems into their day to day activities, policies, plans, programmes and projects.

I understand Welsh Government will be reviewing Section 6 reports. I would like to see more clarity on how and when this is likely to take place, and assurance it will consider the governance and decision-making processes, and not just the actions being taken, that is, how biodiversity is being integrated. Welsh Government should work with my office to ensure there is guidance and an effective accountability mechanism on the reporting of the section 6 duty and the resilient Wales well-being goal.

Public bodies should set well-being objectives and steps that clearly align with the definition of the resilient Wales well-being goal and section 6 duty of the Environment Act.

There has been a marked change in political commitment and leadership towards meeting the aspirations of the Act in the last year, including on the M4 relief road and declaring a climate emergency, but this needs to filter down to all the actions of Welsh Government

The climate crisis has clearly risen up the agenda amongst the public and politicians. Still, it is also encouraging to see Welsh Government being increasingly proactive over the last year in recognising the interconnected nature crisis, which also demands an emergency response.

Welsh Government is beginning to take action to address the climate and nature crises together

Recognition of these connections was apparent in the First Minister's decision on the M4 relief road, the First Minister's budget allocation for 2020-21 (which included an increased focus on biodiversity restoration and decarbonisation), and several recent policies and initiatives. For example, 'Prosperity for all: A Low Carbon Wales' and Planning Policy Wales are a clear indication of positive change in the level of priority nature is being given by the Government.

It is encouraging to see this leadership and political commitment towards meeting the aspirations of the Act in the last year. However, implementation will be crucial and this commitment needs to filter down to all the actions of Welsh Government.

Welsh Government should also aim to increase spending year on year in line with the recommendations of the UK Committee on Climate Change, and as set out in my 10 Point Plan on the climate emergency. (See the section on Decarbonisation in Chapter 5 for more information).

WWF Cymru call for a package of measures and policies on how Welsh Government can take immediate action to tackle the nature crisis. It identifies ten key steps, including the need to significantly increase spending on the environment to meet the needs of future generations.

This also provides a practical framework for action and aligns with some of the key themes in this report around the need for leadership and ambition, innovation, collaboration and knowledge/evidence.

Planning Policy Wales plays a significant role in moving us towards a low carbon society which supports healthy functioning ecosystems

I expect to see the implementation of Planning Policy Wales demonstrate how the planning system is:

- Maintaining, enhancing and creating biodiverse green infrastructure

- Improving the resilience of ecosystems and ecological networks

- Halting and reversing the loss of biodiversity

- Requiring biodiversity net benefit
- Ensuring resilient choices for infrastructure and built development

- Facilitating decarbonisation

In late 2019, the Welsh Government Planning Division wrote to every planning authority, reminding them "that development should not cause any significant loss of habitats or populations of species, locally or nationally and must provide a net benefit for biodiversity", in accordance with the duty to enhance biodiversity under the Environment Act. This is a positive step in the right direction.

"The purpose of this letter is to clarify that in light of the legislation and Welsh Government policy outlined above, where biodiversity enhancement is not proposed as part of an application, significant weight will be given to its absence, and unless other significant material considerations indicate otherwise it will be necessary to refuse permission."

Welsh Government

There is growing recognition at a local and national level of the benefits of increasing tree cover

It is encouraging to see that the value and benefits of tree canopy cover is increasingly recognised by some public bodies.

Some local authorities have started using i-tree assessments to quantify these benefits in their areas (see results in the table below). I would like to see these being used regularly across all of Wales.

Denbighshire County Council is seeking to increase tree canopy in Rhyl. Their five-year ambition is for 18,000 trees to be planted. They are working with Natural Resources Wales and developed community planting days managing to plant 3,000 by the end of 2017/18. The steps they are taking not only seek to enhance nature but also recognise the importance of connecting communities to nature, particularly the benefits to well-being it provides.

Public Body	Impact	Estimated Value
Wrexham County Council	60 tonnes/year air pollutants removed	£700 000 in health damage costs avoided
	Intercept 270,000 m3 of rainfall per year	£460 000 / year in sewerage charges avoided
	Store 65,773 tonnes of carbon to date	worth £14 million
	Remove 1,329 tonnes of carbon/year from atmosphere	worth £ 278,000/year
Bridgend	61 tonnes/year air pollutants removed	£326,000 in damage costs avoided
	Intercept 124,000 m3 of rainfall per year	£163,790 / year in sewerage charges avoided
	Store 53,500 tonnes of carbon to date	worth £12.1 million
	Remove 2,080 tonnes of carbon each year	worth £461,000/year
Tawe catchment	136 tonnes/year air pollutants removed	£715,500 in damage costs avoided
	Intercept 252,000 m3 of rainfall per year	£333,900/year in sewerage charges avoided
	store 102,000 tonnes of carbon to date	worth £23.1 million
	3,000 tonnes of carbon/year from the atmosphere	worth £671,000/year
Cardiff	190 tonnes/year air pollutants removed	£940,000/year in terms of NO2, SO2 and PM2.5 only
	Intercept 355,900 m3 of rainfall per year	£476,800 / year avoided
	321,000 tonnes of carbon to date	£76.6 million
	7,950 tonnes of carbon/year from the atmosphere	£1.9 million/year

Source: Woodland Trust - draft tree-planting report for Wales.

Protecting natural assets like trees in urban areas is also an issue of growing importance amongst communities. Whilst it is not possible for my office to be involved in assessing every attempt by public bodies to remove trees, it is clear that there is a disconnect between what people want in terms of protection of local trees, and what is being done by public bodies.

From a planning perspective, the protection and enhancement of nature and biodiversity is a material consideration for every planning application and therefore, any planning decision should clearly set out how this has been considered (see the letter from Welsh Government on biodiversity duty, above).

I would like to see Welsh Government commit to ensuring a minimum of 20% urban tree canopy cover in every town and city in Wales by 2030, working with public bodies and Public Services Boards to help deliver this through local well-being plans/objectives and Area Statements. This was also a recommendation in the Climate Change, Environment and Rural Affairs Committee's report 'Branching out: a new ambition for woodland policies' in 2017.

Public bodies and Public Services Boards should be using evidence such as i-tree assessments to support their decision making. Refer to the section on 'Urgent need for a better knowledge of nature' (below) and the section on Planning in Chapter 5, for more information.

"There are too many issues that I care about relating to my town (Wrexham), to Wales, to the UK and to the World to mention here. However, one of the issues that I have been trying to highlight is the lack of tree cover in Wrexham (and, of course, in general)."

People's Platform

There is recognition of the role unsustainable agricultural management plays in the lack of biodiversity in our natural environment. However, there are key policy developments in progress which support sustainable land management

Well managed soils have high biodiversity content, safeguard food production, support habitats, help manage flood risk and reduce water treatment costs. However, the State of Nature 2019 report identified unsustainable agricultural management as the single largest driver of biodiversity decline in the UK.

Welsh Government's 'Sustainable Farming and our land' report presents revised proposals for consultation, following the 'Brexit and our Land' consultation. In it, Welsh Government propose to pursue an overall objective of sustainable land management. The ambition is to have sustainable farms produce both food and public goods in a system which enhances the environment, creates new habitats and encourages wildlife. It will also support the well-being of farmers, communities and all the people of Wales.

This approach is a welcome development which, if implemented correctly, could make a significant contribution to meeting the goal of a resilient Wales.

Therefore, while the current timetable remains unclear due to the uncertainty of Brexit, Wales should transition to this new system within the next ten years. We also need to ensure Wales' farmers have the resilience they need to thrive and are front and centre in efforts to help restore the natural environment.

A recent report published by the Sustainable Places Research Institute, commissioned by WWF Cymru, highlights the food system in Wales as a vital component of our economic, environmental, social and cultural well-being. However, it states: "There are systematic problems that need addressing urgently. Many people in Wales cannot afford access to a healthy diet. The food system has negative impacts on the environment, public health and economic well-being. This hinders our ability to prosper as a nation both now and in the future."

This is a complex issue that demands an integrated approach across the food system from farm to fork.

One of the effects of COVID-19 crisis has also been to raise awareness of our food system and the key roles performed by food industry workers.

I, therefore, support one of the report's key recommendations for Welsh Government to "Lead in the development of a food system strategy for Wales. This strategy would help link together different parts of the food system, all the way from farm to fork, which in turn could help drive a more integrated food system."
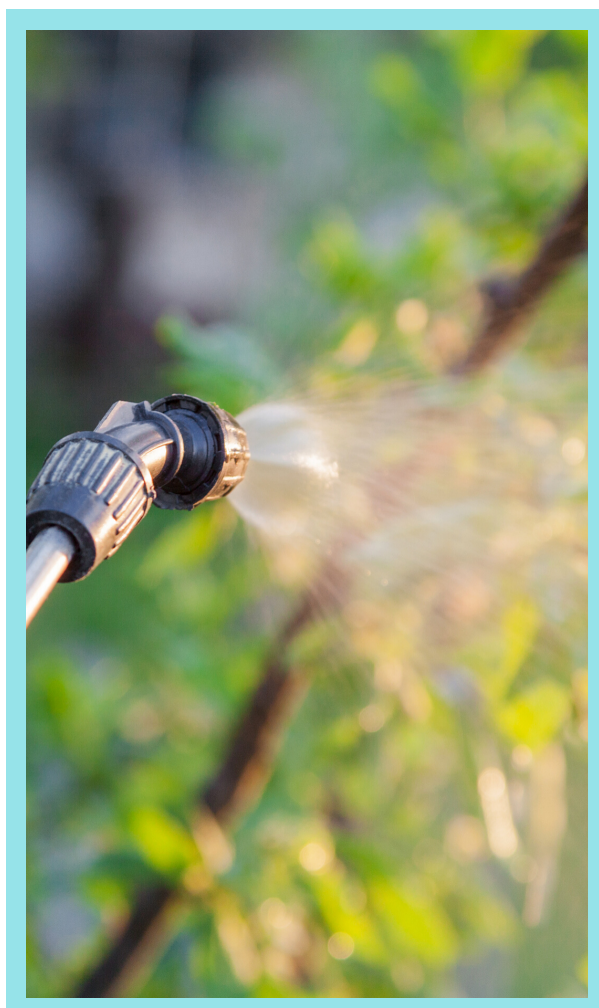
A focus on food could deliver multiple benefits to health, the economy and environment, and there are significant opportunities to address this, not least through better procurement of food by public services in line with the Well-being of Future Generations Act.

Pesticides are heavily linked to both human health problems and the decline in insects. Figures from 2016 show that the total area of agricultural land treated with pesticides in Wales that year was 723,299ha.

Pesticides are also used by other sectors including the forestry sector; public bodies (on public roads and paths, public open spaces, parks); the construction and maintenance industry (on buildings and roads); the transport sector (along motorways, railways; businesses (golf courses, sports and amenity areas); and the general public in their homes, gardens and allotments.

France has taken steps to ban pesticides from all green public spaces and the use of pesticides by gardeners in 2019. Cities such as Copenhagen, Vancouver, Toronto and Barcelona have also taken similar steps.

I would like to see Welsh Government commit to prohibiting the use of pesticides by public bodies and set annual targets towards phasing out the use of chemical pesticides on land.

I welcome the announcement in March 2020 by the First Minister for funding to create a National Forest, with £5 million allocated in 2020-21 to create areas of new woodland and help to restore and maintain some of Wales' unique and irreplaceable ancient woodlands. A further £10 million of Glastir Woodland creation and restoration funding will be available to increase tree planting across Wales.

Funds like this, as well as schemes such as the 'Enabling Natural Resources and Well-being in Wales' grant, play an important role in improving natural resources and well-being.

However, Welsh Government should implement accessible, longer-term funding programmes to restore the natural environment that go beyond single government terms in Wales.

The publication of Wales' first National Marine Plan is an important milestone for our seas, but implementation will be key

The sea area around Wales (now managed by Welsh Government) dwarfs the size of the land area, with 32,000km2 of sea compared with 20,735km2 of land. And 60% of people living in Wales live or work on the coast.

Our seas are an incredible natural asset and support an abundance of diverse and vibrant species, habitats and ecosystems. 69% of the inshore Welsh waters are designated as part of the network of 139 Marine Protected Areas. They also contribute to our well-being, contribute millions to our economy, support thousands of jobs and offer a rich, distinctive heritage. However, our seas are not in good shape.

For example:

- Recent evidence suggests that marine ecosystems are not fully resilient, and there is a lack of confidence in the conservation status of many protected features.

- Wales is failing in 11 of 14 indicators of Good Environmental Status (GES), a requirement of the EU Marine Strategy Framework Directive. The target for achieving GES was 2020, which Wales, as part of the UK, has now missed.

- Some of Wales' seabirds are mirroring the trends seen in our neighbouring counties. For instance, there has been a severe decline in Wales' breeding kittiwakes of 35% since 1986.

The UK Marine Climate Change Impacts Partnership also demonstrates the effects climate change is having on UK seas and coastlines. Evidence shows increased sea surface temperature, and ocean acidification levels are causing major issues for marine ecosystems. Some southern marine species are becoming more commonplace in UK waters, and the future distribution of seabirds is uncertain as sea temperatures rise and extreme high-water events become more frequent. The recovery of our marine bird populations remains key in creating a resilient marine environment.

Following extensive consultation, Welsh Government published its first ever Welsh National Marine Plan in November 2019, setting out the policy for the next 20 years for the sustainable use of our seas.
Marine planning will guide the sustainable development of our marine area by setting out how proposals will be considered by decision-makers. It is intended to be used by applicants to shape proposals and licence applications, by public authorities to guide decision making, and other users to understand Welsh Government's policy for the sustainable development of the Plan area.

Alongside this, Natural Resources Wales will publish its first Marine Area Statement in 2020 which, based on the 'Area Profile', will set out what success would look like and the actions identified to get there.

I understand this is the beginning of a long-term, iterative process. However, key to its success will be Welsh Government and Natural Resources Wales continuing to work with and involve the key organisations and communities.

Make the most of natural green and blue space to support well-being

What future generations need

Everyone in Wales should be able to live in a healthy, wildlife-rich natural world, and have a voice in helping shape how they can access and use outdoor spaces.

We have an opportunity in Wales for using one of our greatest assets - our natural environment - to tackle one of our biggest challenges - our health and well-being.

Where we are now

Public bodies and Public Services Boards are recognising the important role green and blue space plays in people's health and well-being, but need to go further to ensure these areas are biodiverse and resilient, so we do not lose the preventive role they play

We're facing an obesity crisis in Wales, an increasingly physically inactive population, growing mental health challenges, and we've declared a climate emergency. Yet we have almost 21,000 miles of footpaths and a third of a million hectares of land over which we can roam freely, which offer us an emissions-free option for everyday travel and leisure.

The National Survey for Wales 2018-19 shows that green spaces are readily accessible for most people in Wales, and the perceived quality of these spaces appears to be stable. However, recent data from the Green Space Index suggested that over 236,000 people in Wales do not live within a ten-minute walk of green space.

We know access to green spaces can have a positive influence on people's health. For example, it can contribute to increased physical activity, improved mental well-being, and reduce exposure to environmental hazards such as air pollution.

Spending time in nature also provides protection against a range of diseases, including depression, diabetes, obesity, attention deficit hyperactivity disorder, cardiovascular disease, cancer and many more. And yet, people's connection to their natural environment has substantially declined in recent years, a modern phenomenon known as 'Nature Deficit Disorder.'

Children are also losing their connection to nature. RSPB research 'Every Child Outdoors' found in 2010 that only 21% of 8 to 12-year-olds in the UK have a level of connection to nature. Studies such as the 'Every Child Outdoors' report show that nature can have positive impacts on young people's education, physical health, emotional well-being, and personal and social skills. Everyone has a role to play in putting nature back into childhood.

If children are connected with nature, they are more likely to enjoy it and want to save it.

However, there are some excellent examples across Wales where public bodies are recognising the importance of green space in improving people's health well-being.

"We would like to see the value of green spaces being fully appreciated (e.g. health/mental health and educational benefits) and appropriate partnerships formed to ensure appropriate funding going forward."

Our Future Wales response

For example:

Torfaen County Borough Council's step on 'Preparing an Open Spaces Recreation Strategy to support and further develop opportunities for active lifestyles in Torfaen, which will form part of future planning policy'.

Brecon Beacons National Park Authority have examples of getting people outdoors and taking part in physical activity, through geocaching (over 180 geocaches in the national park), the 'Glyn-Neath Gunpowder Works' and ambassador schools, for example.

Bridgend County Borough Council developing their green spaces as early years learning spaces, providing activities and facilities aimed at experiential learning of children outdoors.

Amgueddfa Cymru/National Museum Wales' community-focused schemes: wildlife-friendly gardens at St Fagans with Hafal, the Wallich and Innovate Trust; a public garden at the National Waterfront Museum in Swansea with horticultural courses for volunteers; and the Coity Tip Trail at Big Pit providing short walks and supporting natural habitats.

Glanrhydd hospital (Swansea Bay Health Board) becoming the first hospital in Wales to gain a green flag award.

While this is encouraging, less evident is public bodies recognising the need to ensure their public spaces are nature rich, biodiverse and resilient. This is important not only for wildlife but also because studies have shown that the psychological benefits increase with the richness of species and diversity. This means green and blue spaces should be rich and biodiverse.

It's therefore positive to see examples like Swansea Council who are planting trees, shrubs and grassed areas on the Kingsway and Orchard Street, and developing a new strategy in partnership with Natural Resources Wales requiring more city centre greenery.

I expect to see public bodies and Public Services Boards making the connections between their well-being objectives and steps on the environment, to areas such as adverse childhood experiences, physical and mental health and community cohesion. I also expect to see evidence of how they're investing in these spaces to ensure they are nature rich and resilient for current and future generations to use and enjoy.

Elsewhere in this report, I have recommended that budgets should be top sliced to create a prevention fund.

"Social prescribing has allowed people to put a name on the facts that getting out and getting into green spaces helps, that joining a group, meeting new people, is helpful for mental health."

Diverse Cymru event
(July 2019)

The benefits to both human and planetary health, which nature based solutions can deliver, would provide an excellent example of how this fund could be spent to contribute towards multiple well-being goals.

Welsh Government should work with public bodies and other key stakeholders to set standards in Wales to ensure people have access to natural green space within 300 metres of their home.

Making the most of natural green and blue space to support well-being is also an area I believe Public Services Boards should drive real change.

It's encouraging to see Public Services Boards setting clear objectives and steps relating to green infrastructure, green spaces, and ways of encouraging communities to take more responsibility for the natural environment.

For example:

Torfaen Public Services Board's step to: "Develop a shared Green Infrastructure strategy which maximises the well-being benefits that sustainably managed quality greenspace can provide."

Newport Public Services Board's 'Green and safe spaces' well-being objective, where partners have collaborated on shaping a Newport wide vision (the 'Newport Green and Safe Offer'), funding an engagement officer helping drive progress on the ground.

There are opportunities for public bodies and Public Services Boards to work together and integrate on large scale/regional initiatives like The Valleys Regional Park, a distinct model seeking to maximise the potential of the South Wales Valleys' natural and cultural heritage assets.

At a national scale, the 870 mile Wales Coast Path is also a fantastic example of Wales making the most of one of its greatest natural assets, benefitting both people living in Wales and visitors who travel from all over the world to walk it. For example, in 2014, there were an estimated 43.447 million visits to the Welsh coast for walking.

There is a need for programmes and approaches which help ensure everyone can live in and access a healthy, wildlife-rich natural world

It is concerning that the most deprived communities are less likely to live in the greenest areas, and yet, we know time spent in nature has an impact on indicators such as social contact, cohesion and integration, crime levels and education.

The Cydcoed initiative in Wales, which ran between 2000-2008, aimed to increase community involvement in local woodlands in areas of either poor access or high deprivation. The evaluation of this project found that there had been an increase in social contact, trust, and active engagement, along with a reduction in antisocial behaviour.

The First Minister's commitment to developing an 'environmental growth plan' is an opportunity to enhance nature in local communities across Wales. For example, the 'Local Places for Nature' scheme is a new initiative that aims to create, restore and enhance hundreds of habitats across Wales.

"All people of Wales need to have a voice to help shape how people access and use outdoor spaces but especially those from minority protected characteristic groups. We need to make sure that we actively seek people's opinions and listen well."

Our Future Wales response
Natural Resources Wales

I welcome this recognition of nature and the important role local communities can play in helping reverse its decline. However, it's unclear to what extent deprived communities, and those with relatively poor access to natural green and blue spaces, will benefit, and what the overall impact will be on nature given that it is a short-term, annual funding scheme. This should be addressed if the programme is to reach its full potential, alongside clear identification of where the projects are located across Wales, particularly in relation to areas of high deprivation.

Brecon Beacons National Park's 'Easy access in the Brecon Beacons' is a great example of suitable places to visit for people who are either disabled, less mobile, visually impaired, elderly or parents with children in pushchairs, who want to enjoy the countryside.

Technology also has a role to play in connecting people to nature. For example, the Sensory Trust use nature and the outdoors to improve the health and well-being of people living with disability and health issues, their families and carers. Organisations such as the National Trust have developed a range of virtual tours.

During the COVID-19 outbreak, Dr Ruth Allen, an outdoor therapist based in the Peak District who has previously written a blog post for my office on social prescribing, produced a series of guided 10 minutes walks in nature in the Peak District, using just a hand-held camera. These were uploaded to youtube and allowed people a 'daily dose' of nature, while isolated at home, to help reduce anxiety. Examples like this are also beneficial for people with a disability or limited mobility.

Examples like this demonstrate how relatively straightforward it can be to use technology and help connect people, including those with a disability and/or health issues, with nature. I would like to see public bodies and Public Services Boards identifying ways, including the use of technology, they can help connect people of all ages, abilities and backgrounds with nature.

Urgent need for a better knowledge of nature

What future generations need

Investing in our natural environment is cost-effective and critical to bringing prosperity to the whole of Wales. When natural resources flourish, society and the economy also thrive as well.

Where we are now

There is a growing focus on the benefits of developing an understanding amongst children and young people of the value and importance of nature

Our current and future generations will need different skills for a future that will rely on halting and preventing the impacts of climate change, biodiversity loss, and dealing with major socio-economic change. This means we need to ensure our children are developing knowledge and connection to nature from an early age.

The Curriculum for Wales 2022 provides an opportunity to give more focus to environmental well-being in the education system. Already, there are programmes which encourage children and young people to learn skills for the future that will help them meet environmental, social and economic challenges.

For example, Cymbrogi Futures, based in Pembrokeshire, are providing residential courses for children, young people, teachers, entrepreneurs and businesses based on learning the skills needed to build a sustainable Wales.

Eco-Schools is a global programme engaging 19.5 million children across 68 countries, making it the largest educational programme on the planet. In Wales, the programme is run by Keep Wales Tidy, and over 90% of schools are registered on the programme which has helped pupils learn about sustainable living and global citizenship for 25 years. There are many examples of good practice in schools.

In Merthyr Tydfil 23 schools (in 2018-19) had a Green Flag award, with four schools achieving platinum status - platinum schools are ranked among the best in the world on the Eco-Schools programme.

In Ruthin, Denbigshire, children from Rhos St Primary School were granted access to a protected piece of land adjacent to their school, as an 'outdoor classroom'. The children help monitor endangered species (using GoPro cameras and other technology), carrying out practical tasks, and selling items such as weaved willow baskets at the school fair.

Skills is an area of policy where I have sought to drive real change, and I want to see Wales become the most eco-literate country in the world, with a workforce equipped with skills fit for the future.

(Please refer to the section on Skills for the Future in Chapter 5, for more information and my recommendations)

There is increasing awareness and expectation from the public around the nature and climate crises which provides public bodies and Public Services Boards with an opportunity and imperative for increasing their level of ambition relating to nature and the environment

The climate and nature crises have risen significantly up the agenda amongst the general public in Wales.

In a survey in June 2018, 64% of those polled in Wales stated they want measures to protect the environment to be strengthened when we leave the EU. And membership of conservation and environmental charities representing one of the largest group within civil society, e.g. WWF Cymru has 4,129 members and over 37,000 supporters.

It is, therefore, positive to see examples of public bodies working to increase the awareness and understanding of the value of the natural environment with their staff.

Neath Port Talbot County Borough Council - running biodiversity training for Elected Members and raising awareness with the public.

Ceredigion County Council - running monthly lunchtime biodiversity seminars open to all staff, members and guests.

Pembrokeshire County Council having seminars on the Environment Act and what staff can do in their respective services to support it.

With the growing public recognition, I recommend public bodies declare a nature and climate emergency, and work with citizens to develop their objectives and steps to help accelerate the scale and pace of change needed to meet these challenges. I would also like to see public bodies replicating the examples above of increasing awareness and understanding amongst their staff across Wales.

The State of Natural Resources Report ([2016](#) and [2020](#)), the [Natural Resources Policy](#) and Natural Resources Wales' [Area Statements](#) are intended to help public bodies and Public Services Boards coordinate their work on the environment (with Natural Resources Wales and others) to help build the resilience of Wales' ecosystems, and enhance the benefits they provide us.

Outside of Wales, there are good examples of public bodies developing their knowledge of the environment. For example, in Northern Ireland, [Derry City and Strabane District Council](#) used a natural capital accounting approach which showed its 223 greenspaces bring more than £75 million in benefits to residents each year.

Natural capital refers to the elements of the natural environment which provide valuable goods and services to people. For example, a woodland can be regarded as a natural capital asset, from which flows valuable benefits, or ecosystem services, such as flood risk reduction and carbon capture.

Using this approach, Derry City and Strabane District Council demonstrated that it only costs £1 to deliver over £22 of benefits, and its green spaces provide over £500 of benefit per adult resident per year. Between 2019-2032, its greenspaces will provide £1 billion in benefits, which could increase if parks are enhanced to encourage more visits.

Thinking long-term, Natural England have used a 'Horizon Scanning Analysis' to give them a forward look at external changes which could affect the natural environment and how they deliver their work. Their strategic summary focussed on three clusters of change (extreme weather-related wildfires; increasing corporate climate change accountability; and using emerging technologies), and two emerging issues (xenobots – the first living machines; and CF6 - the most potent greenhouse gas known).

I want to see public bodies and Public Services Boards using sound evidence, such as Natural Resources Wales' Area Profiles, i-tree assessments and natural capital accounting, to inform their decision making and development of plans and policies, demonstrating how they are investing in nature in their area.

Given the scale of the challenge, regional growth deals and businesses (and others) all have an important role to play

Looking at Wales' regional growth deals, I'm encouraged by the focus on low carbon energy, public transport and nurturing skills.

For example, Swansea Bay City Deal's portfolio of major projects totalling £58.7 million aimed at tackling climate change and building regional excellence in renewable energy.

However, growth and city deals need to better demonstrate how their investments are driving progress towards the seven well-being goals and well-being objectives set in their area, including maintaining and enhancing biodiversity.

I have advised elsewhere in this report that any public money allocated needs to demonstrate how it is contributing to local well-being objectives and the seven well-being goals.

Similarly, businesses are increasingly recognising that their bottom line will be affected if they do not embrace sustainability, and there is an opportunity to bring responsible and social businesses in Wales together on a shared mission to meet our national well-being goals.

There are many opportunities for businesses to get targeted help to start their journey towards being more responsible and contributing to a more sustainable and inclusive economy.

For example, BITC Cymru and Cynnal Cymru both run membership support programmes for businesses and organisations in Wales.

Clean air and water for wildlife and people

What future generations need

A biodiverse natural environment is not only good for wildlife, it also provides our most basic needs, including clean air and water, food, energy and security. Managed effectively, it can also help us adapt to change and reduce the impact of incidents such as flooding.

Delivering nature-based solutions can help tackle some of the significant challenges we face such as water security, climate change, human health, disaster risk, food security, and social and economic development. They provide cost-effective and efficient ways to transform those challenges into opportunities for innovation.

Where we are now

Public bodies need to recognise healthy resilient ecosystems are fundamental to our health and well-being, and working with nature is an important part of the solution to addressing many of the significant challenges we face

Water is one of Wales's greatest natural assets and an integral part of Welsh culture, heritage and national identity. It provides us with 951 million tonnes of drinking water per day.

According to Natural Resources Wales, the quality of our rivers has generally improved over the last 25 years. The third annual 'Well-being of Wales: 2018-19' report states that water quality – whether in seas, rivers, streams or stored in the ground – is generally improving. Latest data shows some improvement in the quality of our surface water bodies, but the share achieving the European standard is still relatively low. For example, approximately 40% achieved a good or high overall status in 2018, compared to 36% when they were classified in 2015.

The Welsh National Marine Plan now consists of around 32,000km2 of sea (compared with 20,735km2 of land). Welsh Government has a requirement to achieve Good Environmental Status of its coastal and marine waters under the EU Marine Strategy Framework Directive. Wales is failing in 11 of 14 indicators and missed the target for achieving this by 2020. With regard to bathing waters, all 104 bathing water sites around Wales' coast met European quality standards for quality in 2018.

69% of inshore waters are now designated as Marine Protected Areas, and 50% of all Welsh seas are in some form of protection, highlighting just how important Welsh seas and coasts are to internationally important wildlife and habitats. The most recent report by Natural Resources Wales (released in 2018) highlights that: "Recent evidence suggests that marine ecosystems are not fully resilient and that there is a lack of confidence in status of many protected features".

The designation of Marine Conservation Zones in Wales has also been delayed, and Wales is now behind England, Scotland, and Northern Ireland in identifying and designating such areas to support national important marine habitats and species.

The Marine Conservation Society has highlighted to me the following areas where improvements could be made by public bodies with marine management responsibilities:

- Fisheries management
- Marine protected area management
- Designation of new marine reserves marine protected area monitoring
- A reduction in terrestrial pressures such as litter and agricultural pollution.

As we, unfortunately, witnessed in the winter of 2019-20, homes and business in Wales are at risk of flooding from seas, rivers and surface water. The latest flood risk assessment (2019) shows that:

- 34,800 properties in Wales are at high or medium risk of flooding from rivers
- 7,700 properties are at high or medium risk of tidal flooding
- 54,000 properties at risk from surface water flooding

Evidence tells us droughts and flood events may become more common in Wales. For example, by 2050, average river flows in the winter may rise by 10-15%, but reduce in the summer and early autumn by over 50% and as much as 80% in some places.

In November 2019, Welsh Government published its first climate adaptation plan, which sets out how Wales will protect our environment and adapt our homes, communities, businesses and infrastructure to deal with the impact of climate change. Areas in Wales such as Fairbourne, for example, are at significant risk of large-scale displacement.

The plan provides a focal point for adapting and protecting our homes, communities and businesses. However, Welsh Government need to show greater leadership and support to ensure public bodies have the resources, legislation and policy to enable them to implement the actions locally to protect our nation for current and future generations.

Public bodies will also need to demonstrate how they are understanding and implementing this plan locally.

Nature-based solutions that look at the whole catchment area, rather than a specific point of flooding, can help prevent flooding, as well as bring other benefits.

Dwr Cymru's 'Brecon Beacons megacatchment' project, and work to restore the active blanket bog in the Berwyn and Migneint Special Areas of Conservation are examples of catchment scale, collaborative approaches that seek to restore and connect a variety of habitats.

"Our Future Wales needs: an integrated and participatory catchment management to engage communities in delivering sustainable improvements to water quality and quantity and adapt to a changing climate; sustainable land management incentives and regulation to tackle rural pollution; sustainable drainage and nature-based solutions in rural and urban areas to deliver sustainable water management issues and multiple benefits."

Our Future Wales response
Natural Resources Wales

In urban areas, sustainable drainage schemes are designed to mimic natural drainage by managing surface water run-off as close to source as possible. Since January 2019, all new developments in Wales are required to include SuDS features that comply with national standards. This is a progressive development by Welsh Government, which has the potential to increase green infrastructure across urban areas if implemented well. However, it needs to take a long-term and holistic view of all potential impacts of flooding. (see chapter on Decarbonisation for more information)

'Greener Grangetown', Cardiff is an excellent example of a sustainable drainage scheme which not only removes more than 40,000m³ of rainwater each year from entering the combined sewer network, but that has been designed to transform the quality of the street environment and improve cycling and pedestrian infrastructure across a city centre neighbourhood.

Poor air quality impacts people and wildlife, and public bodies should seek ways to reduce air pollution to meet Wales' climate change commitments and ensure clean air for current and future generations

In the UK, poor outdoor air quality is linked to between 28,000 and 50,000 deaths each year with children, the elderly, or those with existing medical conditions most at risk. Public Health Wales estimates that the equivalent of 1,600 deaths are attributed to PM2.5 exposure each year, and around 1,100 deaths to NO2 exposure in Wales. Air pollution also harms the natural environment, with 74% of Welsh habitats receiving damaging inputs from air pollution.

While the decline in heavy industry has resulted in a reduction in emissions of some pollutants, such as particulate matter, other sources of air pollution, such as transport, agriculture and domestic heating, have become more of a concern.

© Cardiff Council

The highest concentrations of nitrogen dioxide emissions are found near busy roads, reflecting the contribution of traffic and transport planning to poor air quality. Studies have also identified how nitrogen from agricultural ammonia is affecting biodiversity. While some farmers are making progress on capturing ammonia and reducing the overall output, it isn't clear what steps are being taken in Wales to address this.

With regard to transport, there are several good examples of public bodies looking at the way their staff travel and focusing their efforts on reducing emissions from commuting, through incentivising sustainable travel options and through the use of electric and hydrogen vehicles. However, moving towards a low-carbon society will require a dramatic shift in the way we move ourselves and our goods.

We need a transport system designed in a way that reflects Wales' commitment to tackle climate change as a matter of urgency, in turn helping improve air quality. This means rapid and intensive action to support a modal shift from cars to public transport and active travel, increasing uptake of electric vehicles and implementing vehicle and fuel efficiency measures.

Public bodies also need to consider how they deliver their services, for example, ensuring they are easily accessible by public transport and by considering transport-related emissions in the context of how they procure goods and services

A Clean Air Act for Wales should help ensure clean air in Wales for people and the environment

I note the Climate Change, Environment and Rural Affairs Committee's inquiry into air quality and Welsh Government's 'Clean Air Plan for Wales' have both recently closed for consultation, and a Clean Air Act for Wales is expected to be published before the end of this Assembly term.

I expect to see this plan provide Wales with a robust legislative and regulatory air quality management framework that ensures clean air in Wales for people and the environment, including promoting the necessary shift from the private motor vehicle to active travel and public transport and increasing public awareness about air pollution and behavioural change.

How we design our urban environments can help improve air quality, and bring many other benefits

Green infrastructure is a term used to refer to high quality natural and semi-natural areas. This consists of a living network of green spaces, water and other environmental features in both urban and rural areas. Examples include trees, parks, gardens, road verges, allotments, cemeteries, amenity grassland, woodlands, rivers and wetlands.

The design and diversity of green infrastructure can play a significant role in removing air pollution. Trees, for example, absorb pollutants and intercept harmful particulates from vehicle emissions - in Wrexham, trees were found to remove 60 tonnes of pollutants each year.

Other benefits include:
- Increases property values, occupation rates and inward investment
- Reduces flooding and removes water pollution
- Reduces urban heating and helps capture greenhouse gases
- Provides people with places to play, relax and unwind
- Increases people's health and well-being
- Creates high-quality landscapes teeming with wildlife

It's positive to see public bodies and Public Services Boards increasingly taking action to develop and implement green infrastructure in their areas.

For example:

Swansea Council's step to 'Prepare a Green Infrastructure Strategy for the City Centre'.

Torfaen 'Developing a single green infrastructure strategy to support a consistent approach to managing land across the Public Service Board partner organisations, whilst taking account of local cultures.'

The Gwent Green Grid Partnership established to develop a more consistent approach to Green Infrastructure management across Gwent, helping create healthier citizens, stimulates business opportunities and provides community benefits (cohesion, skills development and volunteering) – a great example of regional collaboration.

Pembrokeshire County Borough Council's step to look at 'how we manage our land to enhance green infrastructure...'

I am encouraged by examples like this but want to see all public bodies and Public Services Boards go further in this area, delivering year on year increases in biodiverse green infrastructure and tree canopy cover in their areas and land.

Ensure we use natural resources efficiently

A Resilient Wales

Recommendations for Welsh Government

Key Recommendation

Welsh Government should commit to large-scale habitat restoration, creation and connectivity throughout Wales, which includes setting statutory targets for nature recovery and specific species recovery measures to help prevent extinction.

Policy Recommendations

Welsh Government should:

- Work in cohesion with the Office of the Future Generations Commissioner for Wales to ensure there is guidance and effective accountability mechanism on the reporting of the Section 6 duty and the well-being goal of a Resilient Wales.

- Commit to prohibiting the use of pesticides by public bodies and set annual targets towards phasing out the use of chemical pesticides on land.

- Aim to increase spending year on year in line with the recommendations of the UK Committee on Climate Change and as set out in my 10 point plan on the climate and nature emergency (also a recommendation in Chapter 2).

- Develop a food system strategy for Wales linking together all parts of the food system from farm to fork.

- Work with public bodies to deliver 20% tree canopy cover in every town and city in Wales by 2030.

- Set standards to ensure people can access natural green space within 300 metres of their home.

A Resilient Wales

Recommendations for Welsh Government

Process Recommendations

In their day to day actions Welsh Government should stop:

- Prioritising economic growth over the natural environment with environmental damage seen as 'collateral damage' for short-term growth.

- Implementing short-term grants for environmental initiatives.

- Funding programmes which cannot clearly demonstrate that they are maintaining or enhancing biodiversity.

- Seeing green infrastructure as only relevant to 'environment' departments.

- Permitting development within the protected site network.

- Failing to plan and design for biodiverse green infrastructure at the start of programmes and projects.

In their day to day actions Welsh Government should start:

- Assessing opportunities for biodiverse green infrastructure in all policies and across all departments.

- Putting in place mechanisms so all policy officials understand and implement the Environment (Wales) Act 2016, Sustainable Management of Natural Resources (SMNR), State of Natural Resources Report 2016 (SoNaRR), Natural Resources Policy and Planning Policy Wales.

- Implementing accessible, longer-term funding programmes to restore the natural environment that go beyond single government terms in Wales.

- Ensuring a transition to sustainable land management, as proposed in 'Sustainable Farming and our land', while ensuring Wales' farmers have the resilience they need to thrive, and are front and centre in efforts to help restore the natural environment.

Process Recommendations (continued)

In their day to day actions Welsh Government should start:

- Fully implementing the Sustainable Use of Pesticides Directive in Wales.

- Completing and protecting the protected site network.

- Analysing the provison of and access to nature by socio-economic disadvantage, particularly in respect of nationally funded programmes.

- Taking steps to raise public awareness about the impact of consumption on climate and nature, and promote sustainable community and individual action.

- Increasing investment in nature based solutions to alleviate flooding and other challenges.

- Taking urgent action at a pace and scale to combat the loss of biodiversity.

A Resilient Wales

Advice on setting well-being objectives for all public bodies and boards covered by the Well-being of Future Generations Act (including Welsh Government)

Please refer to the chapter on Setting Good Well-being Objectives, but in setting their objectives specifically in relation to this goal all public bodies and boards covered by the Well-being of Future Generations Act (including Welsh Government) should:

- Clearly demonstrate the connections between their well-being objectives and steps on the environment, and other areas such as adverse childhood experiences, health and community cohesion.

- Clearly set out how they understand the definition of the goal 'A Resilient Wales'.

- Align their actions and reporting on this goal with their commitment under section 6 duty of the Environment (Wales) Act (2016).

In setting their steps, public bodies and boards covered by the Well-being of Future Generations Act (including Welsh Government) should focus in the following areas and should:

- Declare a nature and climate emergency and rapidly accelerate the scale and pace of change to help tackle these challenges.

- Seek to maintain and enhance the natural environment through managing land and sea appropriately to create healthy functioning biodiverse ecosystems and encourage others to do the same.

- Invest in and value the important role biodiverse green and blue space plays in supporting people's health and community well-being.

- Develop your knowledge of nature and increase awareness of the importance of a biodiverse natural environment with healthy functioning ecosystems, and prepare people with skills fit for the future.

- Seek to improve water and air quality, making the environment healthier for both wildlife and people.

- Use natural resources sustainably - being adaptive to an evolving environment.

A Resilient Wales

Recommendations for all public bodies and boards covered by the Well-being of Future Generations Act (including Welsh Government)

Process Recommendations

In their day to day actions they should stop:

- Failing to plan and design for biodiverse green infrastructure at the start of programmes and projects.

- Permitting development which does not maintain or enhance nature.

In their day to day actions they should start:

- Delivering year on year increases in biodiverse green and blue infrastructure and tree canopy cover in their areas and land.

- Using their land holdings to maximise its biodiversity value, for example, implementing ambitious biodiversity and green infrastructure action plans and becoming pesticide free.

- Using sound evidence, such as Natural Resources Wales' Area Profiles, i-tree assessments and natural capital accounting, to inform their decision making and development of plans and policies, demonstrating how they are investing in nature in their area.

- Demonstrating how planning and infrastructure decisions jointly benefit people and nature.

- Demonstrating how they are understanding and implementing Wales' Marine Plan and the marine Area Statement (this is only applicable to public bodies with marine management responsibilities).

- Empowering communities to manage land (including publicly owned) for projects that use nature based solutions to restore local biodiversity and the resilience of ecosystems.

- Identifying ways, including the use of technology, they can help connect people of all ages, abilities and backgrounds with nature.

- Demonstrating how they are understanding and implementing Wales' Climate Adaptation Plan in their areas.

Process Recommendations (continued)

In their day to day actions they should start:

- Increasing awareness and understanding of the natural environment amongst their staff.

- Working in collaboration with other public bodies and environmental NGOs, ensuring they have access to ecological specialists to help carry out their legal duties.

- Increasing the proportion of funding spent on nature based solutions.

- Taking urgent action at a pace and scale to combat the loss of biodiversity.

Resources / Useful Information

Future Generations Commissioner for Wales

- [Journey Towards a Resilient Wales](#)

- [Future Generations Framework](#)

- [Future Generations Framework for Scrutiny](#)

- [Future Generations Framework for service design](#)

Welsh Government

- [WG Future Trends Report](#)

- [Well-being of Wales 2019](#)

- [Marine Protected Area Network Management Framework for Wales](#)

Other

- [Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#)

- [WWF: Don't Forget Nature, say Welsh Public](#)

- [World Economic Forum, Global Risks Report 2020](#)

- [An evaluation of Cydcoed: The social and economic benefits of using trees and woodlands for community development in Wales.](#)

- [Natural Resources Wales: Area Statements](#)

- [RSPB: State of Nature Report 2019](#)