

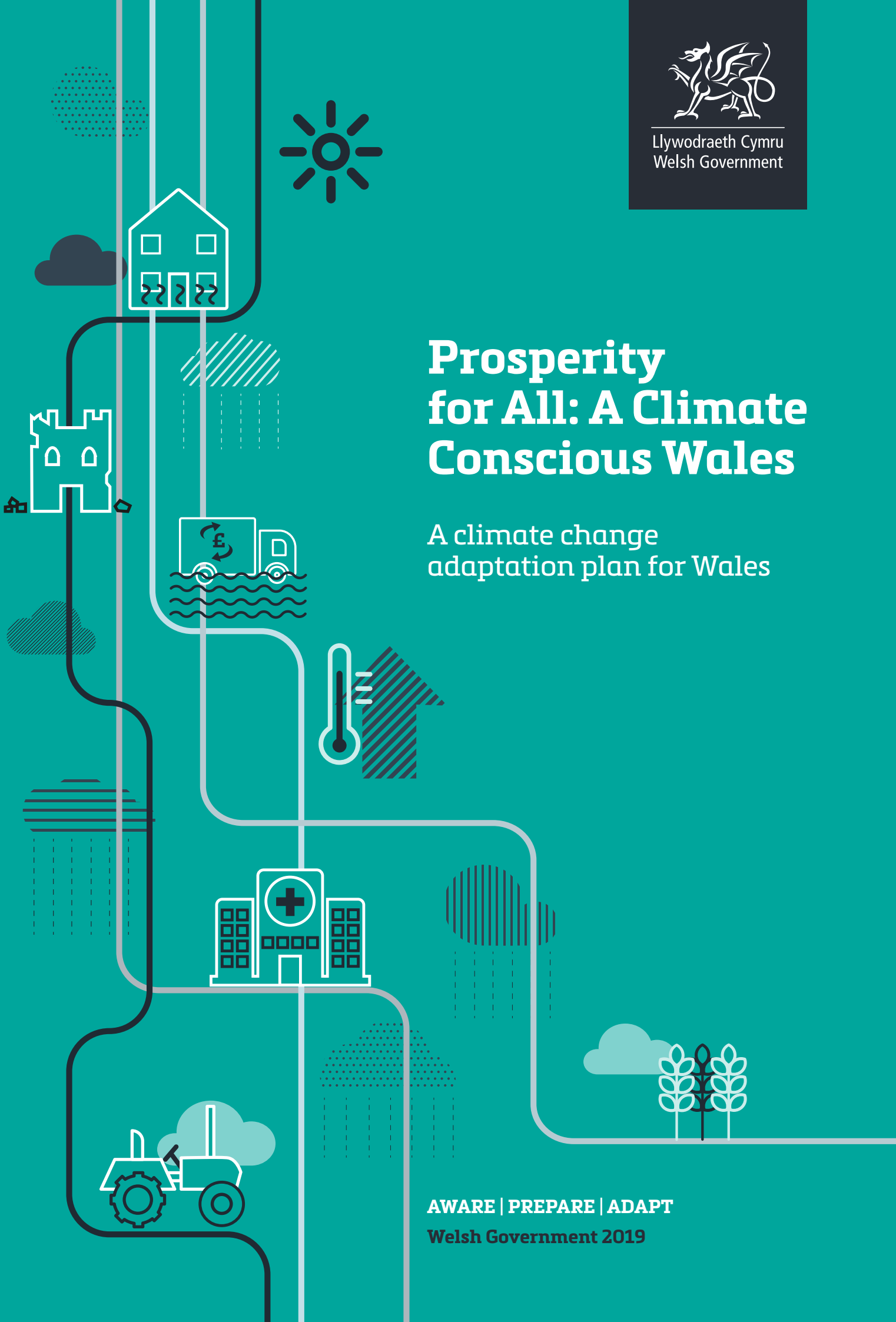


Llywodraeth Cymru  
Welsh Government

# Prosperity for All: A Climate Conscious Wales

A climate change  
adaptation plan for Wales

AWARE | PREPARE | ADAPT  
Welsh Government 2019



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## Ministerial Foreword

The Welsh Government is on the side of people in Wales. We are striving for a more prosperous, equal and greener nation. We will use every day we have, and every lever we have, to make Wales a more equal, fair and just society.

Climate change goes to the core of this ambition. There is no greater challenge facing Government, public bodies, businesses and third sector organisations and communities across Wales. We need to respond now to the consequences from climate change which we know are to come. This is why I declared a climate emergency in April of this year, to galvanise action across Wales and to accelerate plans to adapt to climate change.

Climate change adaptation requires us to understand the risks arising from climate change and how they might impact upon the people of Wales, our communities, our places of work the length and breadth of Wales. We need to take action now to prepare and adapt to these changes before the full effects are felt, to ensure Wales continues to prosper.

We also know, if we do not take appropriate action the impact of climate change will be most acutely felt by the most vulnerable in our society. It is therefore imperative we take additional steps to protect communities most at risk, to demonstrate our commitment to a more equal Wales.

When it comes to protecting our future generations, we have much to be proud of in Wales. We have put our commitments to protect our country into law<sup>1</sup>, ensuring the Wales we leave behind is enjoyed by all, for many generations to come. This is especially relevant when planning for climate change adaptation.

In response to these challenges, I am proud to publish *Prosperity for All: A Climate Conscious Wales*, our second climate change adaptation plan for Wales. Our plan responds to the risks which require most urgent action, identified in the *Climate Change Risk Assessment for Wales* and details tangible actions to reduce the risks of climate change to Wales over the next five years; however, it doesn't stop there. We understand our knowledge of the impacts of climate change is ever changing; therefore, this plan will continue to evolve – we will commit to a continual review of adaptation needs including the addition of any further actions required.

Delivering our plan will be a challenge, but we must all adapt and we must all commit to protect our nation for current and future generations. Success will mean Wales is a climate conscious nation, aware of the risks facing us, whilst being prepared and ready to adapt to the impacts before they occur.



A handwritten signature in cursive script that reads "Lesley Griffiths".

**Lesley Griffiths AM**  
Minister for Environment,  
Energy and Rural Affairs.

1. Well-being of Future Generations (Wales) Act 2015

## Introduction

By developing and publishing this plan, the Welsh Government aims to demonstrate that as a Government we understand and take seriously the impacts arising from climate change and take steps to prepare for and adapt to these changes. This plan also seeks to communicate what action we are already taking across a wide range of topics to make change happen, under the theme of climate change adaptation.

*Climate change adaptation* is about anticipating the risks and impacts arising from climate change and making sure we carry out the work required to ensure we are well prepared. The details set out below in this plan describe how we will adapt to climate change from 2020–2025.

This plan however is not seeking to address the wider climate change agenda, including mitigation and prevention. The terms mitigation and adaptation are often confused, however both require different interventions to achieve their intended outcomes. An example of climate change mitigation could be the of planting of trees to absorb more carbon emissions, whilst an adaptation example would be planting a particular species of tree on a hillside that is at risk in future of flash floods due to climate change with the aim of slowing the rate of water flow and to bind the soil.

In March 2019 the Welsh Government published Prosperity for All: A Low Carbon Wales. This is our first statutory climate mitigation plan, which sets out 100 policies and proposals which will enable us to comply with our first carbon budget and create the foundations for further emission reduction.

That plan also sets out how we will do this in a way which strengthens our economy and creates a more equal society. Although it deals with adaptation rather than mitigation, Prosperity for Wales: A Climate Conscious Wales cross-refers to A Low Carbon Wales, where relevant.

We are also seeking to use Prosperity for Wales: A Climate Conscious Wales to influence our partners in Wales to take action, by raising awareness of climate adaptation and sharing knowledge and best practice. A measure of our success will be a more resilient Wales by 2030 which has taken action in three key areas, increasing our knowledge, our capacity and our resilience as we respond to climate change risk.

There are things we can do now and must not hesitate; however, there are also things that we need to know more about before we can adapt to the risks. The *Climate Change Risk Assessment*<sup>2</sup> has identified key research priorities for Wales. This plan is underpinned by a comprehensive technical annex which sets out the actions and policies linked to adaptation in more detail.



2. ASC (2016) UK Climate Change Risk Assessment 2017 Evidence Report – Summary for Wales. Adaptation Sub-Committee of the Committee on Climate Change, London. <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Wales-National-Summary.pdf>

## Climate Change Adaptation and the Law

The Climate Change Act (2008) requires the UK Government to publish a Climate Change Risk Assessment every five years. The UK Government commissions the UK Committee for Climate Change to undertake this task and the most recent version was published in 2017, with national summaries for England and each of the devolved administrations, including Wales<sup>3</sup>. The primary purpose of the Climate Change Risk Assessment is to assess the risks to the UK from the current and predicted impacts of climate change. The UK Government will publish the next risk assessment in June 2021.

There are specific requirements which are placed upon Welsh Ministers in the Climate Change Act (2008), with regards to climate change adaptation. Section 80 of the Act places requirements on Welsh Ministers to produce a report from time to time on the Welsh Government's objectives, actions and future priorities regarding the impacts of climate change.

In Wales, two important pieces of legislation guide Welsh Government policy development in relation to climate change and developing policy more generally.

Firstly, the Environment Act (Wales) 2016 provides a legal framework to manage Wales' natural resources and aims to position Wales

as a low carbon and environmentally sustainable economy, ready to adapt to the impacts of climate change. Parts 1 and 7 of the Act are a key interest for climate change adaptation.

The objective of Part 1 of the Environment (Wales) Act 2016 is to maintain and enhance the resilience of ecosystems so they support the benefits to our well-being, including the ability to adapt to climate change. In addition, Part 7 establishes the Flood & Coastal Erosion Committee and clarifies the law for other environmental regulatory regimes including flood risk management and land drainage.

Secondly, the Wellbeing of Future Generations (Wales) Act 2015 aims to improve the social, economic, environmental and cultural well-being of Wales, protecting our country's assets for the future and sets out the 7 well-being goals. The Act also details five ways of working (long-term, integration, involvement, collaboration, prevention) which public bodies must follow in developing policy and delivery of services. The *technical annex* to this document illustrates how the goals relate to climate change adaptation in further detail. The legislation also requires Welsh Ministers to publish a Future Trends Report after an Assembly election.



3. ASC (2016) UK Climate Change Risk Assessment 2017 Evidence Report – Summary for Wales. Adaptation Sub-Committee of the Committee on Climate Change, London. <https://www.theccc.org.uk/wp-content/uploads/2016/07/UK-CCRA-2017-Wales-National-Summary.pdf>

## Climate Change Risks in Wales

The UK Committee for Climate Change's climate risk assessment identified the key trends and patterns which have been observed in the UK and Wales, where the data can be broken down:-

- › Similar to the UK trend as a whole, average temperatures over land have warmed in recent decades in Wales.
- › At the UK level daily maximum and minimum temperature extremes have increased by just over 1 °C since the 1950s.
- › There are no significant recorded changes in number of days of air frost in Wales.
- › Average annual rainfall over Wales has not changed significantly to date.
- › There is some evidence however that heavy seasonal rainfall events have also increased across the UK.
- › There has been a significant decrease in the number of days people need to heat their homes, whilst the number of days for cooling has remained unchanged.
- › Sea level trends are difficult to break down for Wales. But UK-scale best estimate of  $1.4 \pm 0.2$  mm/yr for sea level rise since 1901.



The Climate Change Risk Assessment presented data for projections from 2009, however, since publication, the UK's climate projections have been updated by the Met Office and presented at a UK level, referred to as the UK Climate Projections 18 (UKCP18). The projections model different scenarios reflecting differing levels of greenhouse gas emissions.

UKCP18 was established to deliver a major upgrade to the range of UK climate projection tools designed to help decision-makers assess their risk exposure to climate. UKCP18 provides updated observations and climate change projections out to 2100 in the UK and globally, to provide the most up-to date assessment of how the climate of the UK may change over the 21st century.

UKCP18 sets out the weather the UK can expect to experience in a warming climate. The impacts can be summarised as wetter winters, warmer summers, increased incidence of storms and extreme weather and rising sea levels. The Welsh Government will publish an updated version of our 'Climate Change: Its impacts for Wales' in 2020 to reflect the new projections from the Met Office.

The Climate Change Risk Assessment summary for Wales identifies key risk areas, where more action is needed:-

- › Risks to infrastructure (from all sources of flooding).
- › Risks to public water supplies from drought and low flows.
- › Some land management practices exacerbating flood risk.
- › Risks to ecosystems and agriculture businesses from changes in climatic conditions.

## Research Priorities for a Resilient Wales

An important purpose of the *Climate Change Risk Assessment* is also to highlight to Governments the areas requiring further research. This is so we can fully understand the scale and the nature of the risks predicted to face us, as a result of climate change. In total, 21 risks were identified by the UK Committee for Climate Change in the summary for Wales as ‘research priorities’.

Significant progress has been made to understand complex issues and how climate change will affect them, to help us develop an informed response through adaptation. However, there are still a number of areas of risk which require detailed research to better understand the challenges which lie ahead. Without this vital research there is a danger of responding in a way which could be damaging to our ecosystems, wasteful of public money or cause other unforeseen consequences.

The Welsh Government will work with the UK Committee for Climate Change, Met Office and other experts to make sure that the research priorities are carried out in a timely manner and our efforts to address knowledge gaps are co-ordinated and consistent across a range of cross-cutting areas.

The research priorities for Wales can be summarised under the following broad headings which describe the types of climate change risks we need to gain more knowledge about:-

- › Risks to communities from all sources of flooding and sea level rise.
- › Risks to infrastructure, businesses and buildings from high river flows, erosion and extreme weather.
- › Risks from changes in agriculture and forestry productivity.
- › Risks to people’s health and well-being and associated service delivery from high temperatures, flooding and extreme weather.

Analysis of specific research priorities for Wales is difficult to do. When the evidence allowed the UK Committee for Climate Change to make distinctions between UK nations, separate urgency scores are presented for Wales. However, in most cases the urgency score for Wales was the same as for all UK nations, or there was insufficient evidence to distinguish between countries. There is one research priority which is specific to Wales only, namely a risk to passengers from high temperatures on public transport. Welsh Government with Public Health Wales will develop our policies for transport as part of the development of the new Wales Transport Strategy. This strategy will be published in late 2020 and will contain our policy interventions to mitigate and adapt to climate change.

Further detail on the research priorities for Wales are set out in the technical annex to this plan, along with a summary of the gaps for each sector, which we will be addressing over the next five years.





## What action are we taking?

Our vision for climate change adaptation in Wales is...

*In 2030, Wales is a country which has the **resources** and is prepared, has the **knowledge** to understand the risk and challenges ahead and has the **capacity** to adapt to the impact of climate change.*

**We will achieve this by...**

### **Increasing our knowledge**

Together with our partners, the Welsh Government will continue to develop our understanding of the risks, challenges and crucially the impact from climate change on all sectors in Wales.

### **Increasing our capacity**

We will manage the risks and work with partners to support and build capacity in our villages, town and cities across Wales, to empower communities to adapt to impacts of climate change. This will involve developing tools that help understand the complex science of climate change and how it could impact in certain settings, such as our homes or workplaces, or locations across Wales, including our rural, urban and coastal areas.

### **Building our resilience**

By taking direct action to adapt early to the impact of climate change, we will reduce vulnerability and lessen the threats posed by the known climate change risks, especially in our most disadvantaged communities. Supporting the development of individual and community level resilience is a primary objective for climate change adaptation in support of creating a more equal and prosperous Wales.

### **Responding to the risks for Wales**

Our approach to this adaptation plan has been to focus on those risks given in the UK Climate Change Risk Assessment summary for Wales, as 'more urgent'. The risks requiring more urgent action for Wales, are grouped under the following key headings:-

- › Risks to people, communities, buildings and infrastructure from flooding.
- › Risks to public water supplies from drought and low flows.
- › Some land management practices exacerbating flood risk.
- › Risks to ecosystems and agriculture businesses from changes in climatic conditions.

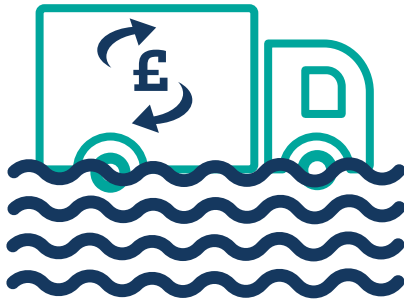
The Welsh Government has already taken action in a number of areas, since the risk assessment was published in 2017 and these steps are described in full in the technical annex to this plan. Our plan of action includes over 30 commitments to support adaptation efforts across all sectors and details a number of areas of work that are under development and due to be launched during the early stages of this plan.

The nature and scale of the risk varies across Wales, depending on a range of factors. These factors vary depending on where a person lives in Wales, what life stage they are at and what resources individuals and communities have to respond to known risks. Protecting people and communities and the infrastructure that supports them is paramount.



## Protecting people, communities, buildings and infrastructure from flooding

Various forms of inequality have been shown to adversely affect the levels at which individuals and communities are impacted by climate change. A recent report by the Intergovernmental Panel on Climate Change pushes for urgent, ambitious climate action that puts vulnerable people first. Through our adaptation plan, we aim to create safer homes and places which are more resilient to the anticipated impacts from climate change.



The UK Committee on Climate Change explain that while there may be a reduction in health implications associated with colder winters in Wales, more action is needed to manage current risks to people from cold temperatures through addressing fuel poverty. The most effective way in which the Welsh Government can tackle fuel poverty is to improve the energy efficiency of homes and we are doing this effectively through the Welsh Government Warm Homes programme.

Under the programme, our two schemes Nest and Arbed have been designed to achieve three social, economic and environmental objectives. We have committed to installing energy efficiency measures in up to 25,000 homes between 2017 and 2021. We will also complete research to evaluate the impacts of both schemes on health outcomes by 2021. As part of this programme, the Welsh Government will be launching its *Tackling Fuel*

*Poverty 2020–2035: A plan to support people struggling to meet the cost of their domestic energy needs* for consultation in late 2019, with a subsequent launch of the full plan in 2020.

Current estimates<sup>4</sup> show over 245,000 properties in Wales are at risk of flooding from rivers, the sea and surface water. The Welsh Government already invests an average of over £54 million per annum in flood and coastal risk management until 2020, but a longer term settlement would help for the strategic planning and adaptation. The Welsh Government has also committed to reviewing policy and putting in place new guidance and tools to increase Wales' capacity to manage coastal flooding and erosion. In September 2019, consultation on the future *National Strategy for Flood and Coastal Erosion Risk Management* closed and the Welsh Government will publish a new strategy in 2020. The primary goal of the strategy will be to ensure the risks to people and communities from flooding and coastal erosion are effectively managed.

Sea level rise caused by climate change, along with increased incidence of storms, means the risk of erosion and flooding of coastal communities is increasing. There are a number of communities which are already vulnerable to spring tides and coastal surges. With the projected sea level rises in the long term, some of those communities may become unsustainable.

Natural Resources Wales oversees the shoreline management plans on behalf of the Welsh Government, in partnership with coastal groups representing the communities affected. These plans set out the preferred management approach for dealing with this risk over the next century. We intend to include a measure for coastal groups to report annual progress on their action plans to the

4. Source: Flood Risk Assessment Wales (2019) Natural Resources Wales

<https://naturalresources.wales/evidence-and-data/research-and-reports/reports-evidence-and-data-on-flooding/flood-and-coastal-erosion-risk-in-wales/?lang=en>

Welsh Government through the Wales Coastal Group Forum in the new national strategy.

The Welsh Government wants to ensure that new developments, homes and communities are protected from flood risk, take climate risks into account and encourage climate change adaptation. Nature itself is known to be a cost effective measure to adapt to the risks caused by flooding and drought and increasingly evidence is demonstrating the positive role nature has in adapting to the consequences of climate change. Known as ‘nature based solutions’, the Welsh Government will increase the role of these solutions in flood and water management over the next five years,

through the implementation of our river basin management plans and flood prevention strategies. With our partners, we will maintain, enhance and restore floodplains and groundwater management to reduce flood risk and improve water quality and quantity.

In January 2019, new legislation came into force which requires all future developments in Wales<sup>5</sup> to be designed and built in accordance with mandatory sustainable drainage systems standards. These systems are important to adaptation as they help with the management of surface water to prevent flooding, but also control water quality and encourage wildlife and plants to flourish.

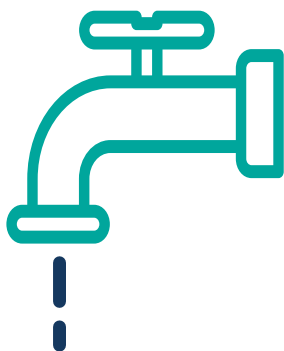
## Summary Action Table

Protecting people, communities, buildings and infrastructure from flooding	
<b>Actions taken already</b>	New legislation to require sustainable drainage system standards in all new developments in Wales.
	Launched the Warm Homes Programme.
	NRW has produced Shore Management Plans.
<b>Short term actions</b>	25,000 homes fitted with energy efficiency measures by 2021.
	Launch fuel poverty plan for consultation
	Increase the use of ‘nature based solutions’ through the implementation of the river basin management plans and flood prevention strategies.
<b>Medium term actions</b>	Implement <i>Tackling Fuel Poverty 2020–2035: A plan to support people struggling to meet the cost of their domestic energy needs</i> in 2020.
	Implement the <i>National Strategy for Flood and Coastal Erosion Risk Management</i> in 2020.
	Include a measure for coastal groups to report annually in the new national strategy for flood and coastal risk management in 2020.

5. with the exception of single dwellings with areas less than 100m<sup>2</sup>

## Protecting public water supplies from drought and low flows

In addition to flood, drought is another significant risk from climate change, as identified in the risk assessment summary for Wales. The Welsh Government and Natural Resources Wales are responsible for the management of water resources, including the regulation of water abstraction. Water abstraction is the process of removing water from natural sources like rivers, lakes and aquifers and is how we meet most of our water supply needs in Wales.



The Welsh Government's *Water Strategy for Wales*<sup>6</sup>, which was published in 2015, covers a 25 year period and aims to maintain high levels of water quality and protect the health of our people. The strategy identifies the risks from climate change and is underpinned by an all Wales action plan.

Identifying and mitigating the effects of climate change on water resources in Wales is deeply embedded in the development of Welsh Government policy, the regulation of the industry and planning and investing for the future. For these reasons, the long-term goals of the water sector include continuous adaptation to climate change and reducing the industry's carbon footprint. Wales is not forecast to have a water supply deficit over the next 30 years. Policies are in place to safeguard the continuity of public water supplies during droughts and from burst pipes in cold weather.

Water companies have duties to develop robust plans to ensure effective management, maintenance and development of our water resources and supply systems. These plans include:

- › Water Resource Management Plan every five years to set out how the water company intends to maintain the balance between supply and demand for water over the next 25 years. The next plans will be published by 2020.
- › Drought plans setting out how they will continue, during a period of drought, to discharge its duties to supply adequate quantities of wholesome water

The Welsh Government will publish new guidelines for Water Resource Management Plans by 2025.

The Welsh Government welcomes the good work done by Dwr Cymru's 'Let's Stop the Block' campaign and Water UK has now launched its "Fine to Flush" standard to identify which wet wipes can be safely flushed down toilets.

In addition to the work by the Welsh Government and water providers in Wales, Natural Resources Wales has a statutory duty for long-term water resources planning and is a statutory consultee in the development and review of drought plans by water companies. Through our national leadership role, the Welsh Government has pushed for a robust line on reducing leakage. As a result Ofwat has set water companies a minimum target to reduce it by 15% by 2025.

The Welsh Government is aware of the particular risk faced by those reliant on private water supplies in Wales. In response to this risk, we are part-funding research to increase our understanding of the impacts of climate change on water availability,

6. <https://gweiddill.gov.wales/docs/desh/publications/150521-water-strategy-for-wales-en.pdf>

including private supply. This research will support the UK Committee on Climate Change’s development of the next risk assessment for Wales.

The climate change risk assessment also provides evidence that drought conditions from climate change are likely going to damage these peatlands, leading to a reversal of this process and emission of carbon dioxide. Peatlands are an important asset to Wales as they represent a nature defence against climate change, if managed well. Climate change adaptation is essential here to ensure peatlands retain their moisture and are sustainable as carbon sinks and stores. Welsh Government has tasked Natural Resources Wales with developing a costed national action plan for a five year period to restore our peatlands.

The use of ‘nature based solutions’ is also proven to be effective in preventing drought. Maintaining and enhancing existing semi-natural habitats and restoration of floodplain grasslands to help slow, store and filter floodwaters and reduce the effects of drought, soil and nutrients on rivers and lakes.

Our ‘River Basin Management Plans’ are updated on a six yearly cycle and will help ensure access to water for everyone. The plans are a requirement of the Water Framework Directive which aims to achieve good status in our inland waters by 2027. The plans consider the pressures facing Wales’ water environment. Our rivers, lakes, wetlands, ground-waters, estuaries and coastal waters, including those in protected areas, all fall under these plans. The current plans cover 2015-2021 and are prepared in consultation with a wide range of organisations and individuals.

## Summary Action Table

Protecting public water supplies from drought and low flows	
<b>Actions taken already</b>	Published Welsh Government’s <i>Water Strategy for Wales</i> in 2015.
	Dwr Cymru’s ‘Let’s Stop the Block’ campaign.
	Water UK has launched its “Fine to Flush” standard.
	Drought plans have been produced by water companies in Wales.
<b>Short term actions</b>	New Water Resource Management Plans in 2020.
	Research to increase our understanding of the impacts of climate change on water availability to inform the climate change risk assessment in 2021.
	Natural Resources Wales to produce a costed national action plan for a five year period to restore our peatlands.
<b>Medium term actions</b>	The Welsh Government will publish new guidelines for Water Resource Management Plans by 2025.
	Ofwat has set water companies a minimum target to reduce water leakage by 15% by 2025.
	Produce new river basin management plans by 2021 and achieve ‘good status’ in our inland waters by 2027.

### Tackling land management practices that increase flood risk

The promotion of good environmental, agricultural practice to increase resilience of soils and water which includes good soils and nutrient management plans is a priority for the Welsh Government.

Changes in agricultural and forestry productivity and practices in response to climate change may lead to increased or changing use of pesticides. Increased occurrence of winter floods and summer droughts is likely to lead to a greater volume of pesticides being lost to watercourses as well as a higher risk of erosion occurring on exposed soils.

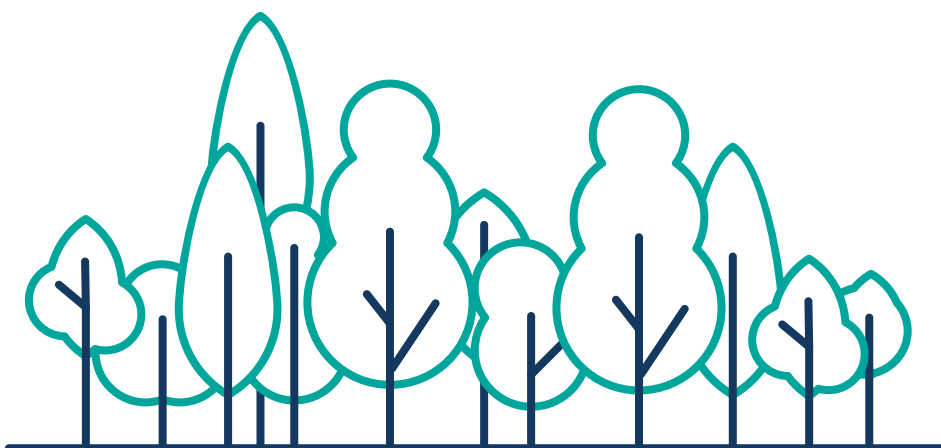
The Welsh Government will continue to work with stakeholders to meet our policy aim of reducing to the lowest possible

level the effect of pesticide use on people, wildlife, plants and the environment while making sure pests, diseases and weeds are effectively controlled. We do this by promoting requirements for appropriate training and certification; regular inspection of application equipment; and promoting the use of Integrated Pest Management (IPM) and of alternative approaches or techniques all aimed at protecting human health, water and biodiversity.

Dwr Cymru has been awarded almost £1m by the Welsh Government to deliver a ‘PestSmart Project’. The project will work with farmers, growers, landowners and gardeners across Wales, to help people and communities to consider the way they manage their land to help safeguard raw water quality. It will include advice on user best practice, investigate new technologies and undertake a wider pesticide amnesty.

### Summary Action Table

Tackling land management practices that increase flood risk	
<b>Actions taken already</b>	Dwr Cymru has been awarded almost £1m by the Welsh Government to deliver a ‘PestSmart Project’.
<b>Short term actions</b>	Continue to work with stakeholders to meet our policy aim of reducing to the lowest possible level the effect of pesticide use.
<b>Medium term actions</b>	Promote good environmental, agricultural practice to increase resilience of soils and water which includes good soils and active nutrient management.



## Risks to ecosystems and agriculture businesses

Making sure our plans to increase tree cover in urban and non-urban areas will significantly help address the risks arising from climate change, for example by providing shaded areas as temperatures rise. Woodlands are an important asset to adaptation, for example to improve air quality, increase biosecurity on farms, reduce erosion and protect soils, buffer water courses, mitigate flood risk and provide cooler environments around urban areas. The Welsh Government will identify opportunities to maximise the adaptation benefits in the design of the ambitious plan for a National Forest in Wales as well as encouraging farmers and other land managers to plant new areas of woodland.

Welsh Government already has in place a strategy called Woodlands for Wales, which it launched in 2018. The strategy identified that an increase in woodland cover was now essential to tackle climate change and therefore it has set a new short-term target to increase woodland cover by at least 2000 hectares per annum from 2020 to 2030 and beyond. Woodland creation is currently supported through the Welsh Government's Glastir programme. Our current consultation on future farm support, *Sustainable Farming and our Land*<sup>7</sup>, makes clear that the sustainable land management approach requires us to consider wider societal needs when assessing which outcomes should be supported. As the consultation sets out, it is our view that tree planting should form a significant part of our efforts to increase carbon capture and storage.

We will promote and encourage integration of woodland with other land uses to enable them to adapt to climate change, reflecting this in future support mechanisms.

In July 2019, the Welsh Government published *Sustainable Farming and our Land*, a far-reaching consultation for farmers, rural communities, environmental groups and others on the future of agricultural support in Wales. The current payment scheme is coming to an end as the UK leaves the European Union. However, there remains a strong case for continuing to support farmers.

As a result of the consultation, the Welsh Government proposes to pursue an overall objective of sustainable land management. Our ambition is to have sustainable farms producing both food and public goods in a system which enhances the well-being of farmers, communities and all the people of Wales.



We will propose a farm sustainability scheme to provide an income stream to farmers in return for delivering sustainable land management outcomes, such as water quality, biodiversity and animal health. Many of these outcomes can be produced alongside sustainable food production and can help deliver climate change adaptation for the sector in Wales. In collaboration with a range of stakeholders, we propose to develop a plan based upon the agreed outcomes from *Sustainable Farming and our Land* which will consider climate change and the desired reduction of related impacts from agriculture upon the environment through the lens of sustainable land management. As part of this work, we will also establish and deliver a set

7. <https://gov.wales/new-welsh-sustainable-farming-scheme-will-protect-and-enhance-our-environment-lesley-griffiths>



of agriculture emission reduction and adaptation measures, to support the agriculture industry in responding to climate change.

In addition to tackling the risk to ecosystems, the Welsh Government is committed to supporting the agricultural sector to prepare and adapt to climate change. Changes in agricultural and forestry productivity are being assessed and mapped across the whole of Wales through the Capability, Suitability & Climate Programme. This will provide a spatial

understanding of how cropping potential may change under UKCP18 scenarios for over 100 agricultural and forestry crops. It will also identify the main drivers, such as drought, behind any predicted change. As productivity changes with climate, there may also be changes in the use of pesticide. The increased occurrence of winter floods and summer droughts may lead to a greater volume of pesticides being lost to watercourses as well as a higher risk of erosion occurring on exposed soils.

### Summary Action Table

Risks to ecosystems and agriculture businesses from changes in climatic conditions	
<b>Actions taken already</b>	Woodlands for Wales launched in 2018.
	Established Welsh Government's <i>Glastir Programme</i> which is delivering woodland creation in Wales.
<b>Short term actions</b>	Complete our consultation regarding future farm support in Wales and develop our proposals for a farm sustainability scheme, including climate change adaptation and mitigation measures for the agriculture sector
	Complete the Capability, Suitability & Climate Programme setting out how cropping potential may change and why.
<b>Medium term actions</b>	Welsh Government will maximise the adaptation benefits in the design of the ambitious plan for a National Forest in Wales.
	Increase woodland cover by at least 2000 hectares per annum from 2020 to 2030.



## Cross-cutting actions

Some interventions by the Welsh Government cut across one or more risk areas identified above and will deliver multiple benefits in relation to climate change adaptation.

A national priority of our Natural Resources Policy is to deliver more urban 'green infrastructure' through nature-based solutions. Green infrastructure includes all our open spaces and networks of habitats, parks, playing fields, allotments, private gardens, grasslands, ponds, rivers, canals, woodland and hedges. It also includes street and garden trees. Green infrastructure can be engineered to form green roofs and walls or sustainable urban drainage. But it can also be part of our transport corridors and other links between our built up areas and their surroundings so they are better connected. The Welsh Government will therefore promote a renewed focus on the 'small things' which can create local, accessible green spaces.

Natural Resources Wales' area statements will also enable action on the ground for the targeted restoration of Wales' uplands, for the wide range of benefits identified. Area Statements will be produced by March 2020.

Trees in streets and parks help to cool down urban areas in summer and provide shade for people and buildings. They also help to reduce the pressure on urban drainage systems by absorbing water that would otherwise run off the large areas of impermeable surfaces.

Urban green infrastructure in particular provides a wide range of benefits to support adaptation to climate change and to realise those benefits, it is important in particular that urban green infrastructure is biodiverse where appropriate. We have established a cross disciplinary working group to drive forward the collective action needed for delivery.



## Planning Policy for Wales & National Development Framework

Planning Policy for Wales 10, published December 2018, sets out a number of planning policies that contribute toward climate change adaptation. These include the location of new development, the design of buildings, the strategic importance of green spaces and our approach to managing development in areas of flood risk. Collectively, these enable current and future generations to adapt more effectively to the threats and impacts of climate change. The Welsh Government's new National Development Framework will be published by the Welsh Ministers in 2020 and will highlight our strategic spatial approach to many of these policies. The Welsh Government will ensure the

planning system in Wales plays a key role in facilitating sustainable growth and helps build resilience to the impacts of climate change.

We will ensure that our own and others' approaches to building design take climate risks into account and encourage climate adaptation and maximise opportunities for climate change adaptation through the work we are leading on decarbonising Wales' housing stock<sup>8</sup>. In 2019/20, the Welsh Government will consult on ambitious plans to strengthen our planning policy in Wales to prevent house builders from building properties on medium and high risk floodplains in Wales. This will include a proposal to develop a companion guide advising developers, householders and landlords on how homes and premises can be adapted to be resilient to climate change in Wales.

### Summary Action Table

Planning Policy for Wales & National Development Framework	
<b>Actions taken already</b>	Developed our Natural Resources Policy.
	Established a cross disciplinary working group to deliver urban green infrastructure.
	Published Planning Policy for Wales 10 in December 2018.
<b>Short term actions</b>	Welsh Government to promote a focus on the 'small things' which can create local, accessible green spaces.
	Ensure tree planting delivered through Woodland for Wales is carried out in key urban areas and other key locations to deliver adaptation.
	Consult on plans in 2019/20 to strengthen planning policy to prevent house building in vulnerable areas.
<b>Medium term actions</b>	Natural Resources Wales will produce area statements by March 2020.
	Natural Resources Wales to restore Wales' uplands.
	Publish the new National Development Framework in 2020.
	Develop a companion guide advising developers, householders & landlords on how homes & premises can be adapted to be resilient to climate change.

8. <https://gov.wales/decarbonisation-homes-wales-advisory-group>

## Historic Environment

Protecting our nation’s historic assets is an important consideration when responding to the risks arising from climate change. Historic assets include not only the castles for which Wales is famous, but also other monuments, archaeological sites, historic buildings, parks and gardens, wrecks, townscapes and landscapes. They feature in many aspects of our daily lives.

The Welsh Ministers established the Historic Environment Group as a high-level forum to take a strategic overview of issues and opportunities in the historic environment – including climate change, skills and the

economic value of the historic environment – and promote common approaches to address these. The group is made up of representatives from the major organisations in Wales with historic environment interests.

Later in this financial year, the Historic Environment Group will publish a *Historic Environment and Climate Change Sector Adaptation Plan*, which will set out in detail how climate change adaptation will be implemented to protect our historic assets in Wales.

In July 2019, Cadw, the Welsh Government’s historic environment service, published guidance on *Flooding and Historic Buildings in Wales*.<sup>9</sup>



9. <https://cadw.gov.wales/sites/default/files/2019-07/Flooding%20and%20Historic%20Buildings%20in%20Wales%20Eng.pdf>

## Conclusion

Climate change does not respect borders and we understand very clearly the disproportionate ways in which climate change can affect our poorest citizens and communities.

As a globally responsible nation we understand how, in many cases, the parts of our world which are most vulnerable are those which historically have emitted the least amount of the greenhouse gases and are those developing countries which are less able to adapt. We will continue to collaborate with other nations to adapt to climate change locally and internationally.

Our new adaptation plan presents an opportunity to make sure we adapt by making sure our policies and delivery take into account the changing climate we are already experiencing and reflect the need to adapt over the next five years for future generations.

The Welsh Government has already invested significantly in climate change adaptation, through a wide range of policies, programmes and interventions. Over the next five years the Welsh Government will...

- › Launch our new *National Strategy for Flood and Coastal Erosion Risk Management* and continue our significant investment in flood and coastal defence schemes to protect people's homes and businesses.
- › Significantly invest in our woodlands and forests.
- › Reverse the decline in our peatlands and other natural assets.

- › Adapt our homes and buildings.
- › Improve our planning system in Wales.
- › Use our area statements, which are due for publication in early 2020, to drive forward our adaptation activity across Wales.
- › Support Public Service Boards to make sure the latest climate change data is used to inform the next round of wellbeing assessments and plans.

Climate change adaptation is a live issue and this will not be a static document. We need to be agile and creative to respond to changing evidence on the risks and other developments, such as should the UK leave the EU. The Welsh Government has a key leadership role and is up to the challenge, following our declaration of a climate emergency.

We will establish a national group to oversee the delivery of our plan and have put in place a robust framework to make sure our actions and commitments are delivered over the next five years and we will commission an independent evaluation.

Wales needs to be aware of the risks arising from climate change. The Welsh Government is prepared for the future and is already taking steps to protect communities across Wales from the impact of climate change. Together we will adapt to these risks, so that they can be avoided or managed, instead of reacting in an uncoordinated or more costly way.

