

Carmarthenshire

Environment and Climate Change Analysis

Environment and Natural Resources in Carmarthenshire

Carmarthenshire is celebrated for its natural environment, including magnificent coastal sand dunes, quiet estuaries, steep wooded valleys and rugged uplands. The County has a rich network of ‘designated’ (protected) sites; protected at a national or international level, these include our Special Protection Areas and Ramsar sites, our National Nature Reserves, and Sites of Special Scientific Interest. We also have nature reserves (often managed by wildlife organisations or the Council) and country parks. Natural Resources Wales are a government sponsored body, they are responsible for looking after natural resources and what they provide for Wales: to help reduce the risk to people and properties of flooding and pollution; to look after special places for well-being, wildlife and timber; and to work with others to help them to manage the resources sustainably. Areas of focus for Natural Resources Wales in the South West Region, which includes Carmarthenshire are:

South West Area Statement	Link to Well-being Goals
Ensuring sustainable land management	A Globally Responsible Wales A Prosperous Wales A Resilient Wales
Reversing the decline of, and enhancing, biodiversity	A Globally Responsible Wales A Prosperous Wales A Resilient Wales
Reducing health inequalities	A Healthier Wales A More Equal Wales A Wales of Cohesive Communities
Cross-cutting theme: Mitigating and adapting to a changing climate	A Globally Responsible Wales A Prosperous Wales A More Equal Wales

Marine Area Statement	Link to Well-being Goals
Building Resilience of marine ecosystems	A Globally Responsible Wales A Resilient Wales A Prosperous Wales
Nature-based solutions and adaptations at the coast	A Globally Responsible Wales A Resilient Wales A Prosperous Wales
Making the most of marine planning	A Globally Responsible Wales A Resilient Wales

NRW published the second State of Natural Resources Report (SoNaRR2020) last year, in this they assess to what extent Wales is achieving the Sustainable Management of Natural Resources (SMNR). Figure 1 details the four long term aims of the SMNR and how they are interlinked. SoNaRR2020 concludes that Wales – and by extension all Local Authorities– are not yet meeting the four long-term aims of SMNR.

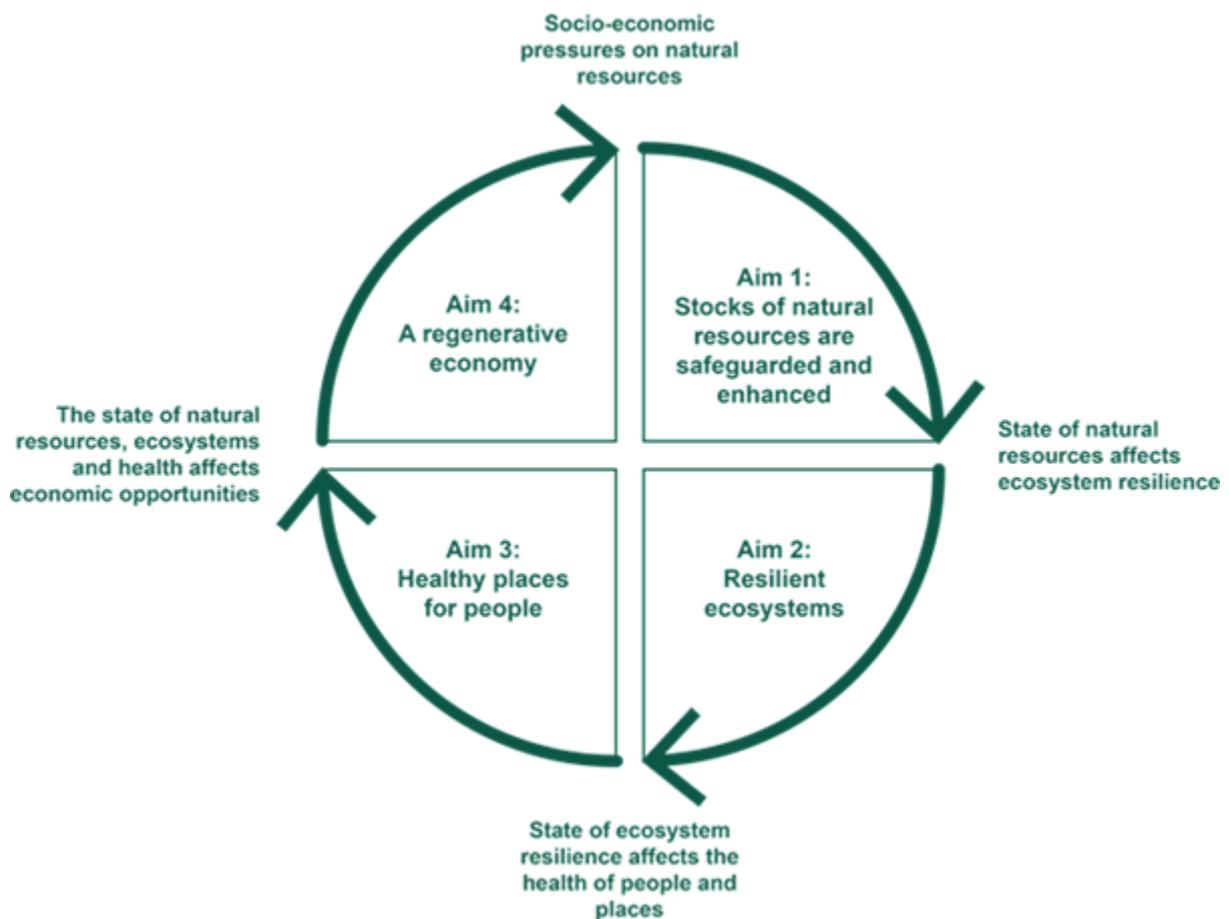


Figure 1 The four aims and the linkages of sustainable management of natural resources.

To make Wales's use of natural resources more sustainable, we need transformational change to our:

- **Food** – The global food system has a significant impact on the environment. Land use is identified by the UN IPBES report (2019) as one of the big drivers of the nature emergency. Emissions of pollutants, depletion of resources, biodiversity loss and ecosystem degradation are consequences of the current food system in Wales and beyond.

- **Energy** - The global energy system is one of the main drivers of the climate emergency. Wales's current energy production and consumption creates many pressures for ecosystems and public health here and across the planet. Wales needs to increase its use of renewable and sustainable energy sources, reducing the current dependence on harmful fossil fuels.
- **Transport** - The transport system has an impact on ecosystems and health. Urban transport contributes to carbon emissions, air and water pollution, noise pollution and the social and economic effects of congestion or lack of transport opportunities.

Environmental Well-being

The natural environment is a huge part of what makes our county such a special place to live and work, it is our most precious inheritance but addressing the climate and nature emergencies presents us with one of the greatest challenges of our time. Both climate crisis and loss of biodiversity are interwoven challenges which cannot be solved in isolation. Climate change places our habitats and wildlife at risk, but if helped to recover, healthy natural habitats can store carbon, reduce flood risk, help prevent coastal erosion, improve people's health and wellbeing, as well as maintain healthy soils, clean water and the pollinators needed for our crops – and therefore sustain us.

Natural resources are essential for the air we breathe, the water we drink and the food we eat. They give us energy, prosperity and security; they protect us and make us healthier and our lives better.

The way we interact with our Natural Resources is vital to the social, economic and cultural well-being of people living in Carmarthenshire today and the generations to come. We need to manage our natural resources sustainably because natural resources that are healthy and thriving are also healthier for people, their communities and for the economy.

Natural Resources are defined by the Environment Act 2016 as:

- Animals, plants and other organisms
- Air, water and soil
- Minerals
- Geological features and processes
- Physiographical features
- Climatic features and processes

Natural Environment

Land Use

Managing land sustainably can deliver a range of environmental and wellbeing benefits including; reducing flood risk, improving recreation opportunities, improving ecological diversity, improving water and air quality while producing sustainable high quality local food.

Soil

Soil is an incredibly valuable and finite natural resource. It:

- Supports food production
- Stores and filters water, supporting crops and potentially helping to reduce flood and drought risks and protect water quality
- As the largest store of organic carbon on our planet, soils are important for regulating the climate and for climate change
- Provides a habitat for a vast array of organisms with 25% of all known species residing in soils. It further supports biodiversity by allowing plants to grow and habitats to develop in different soil types.

Across Wales there has been a decline in the organic matter, plant and animal life living in the soil, leading to a reduced quality and function. The majority of carbon in the terrestrial environment is stored in soils rather than vegetation. Soil erosion is being made worse by the change of land use and inappropriate land management. The most immediate pressure on the current pattern of land use is the uncertainty posed by Brexit. Soils in the built environment can provide the same range of services as in any other environment, but soil can also be degraded and destroyed by construction of buildings and infrastructure. Undamaged soils and Sustainable Drainage Schemes (SuDs) schemes are important to reduce flooding, improve water quality, mitigate habitat loss and provide more outdoor recreation and education opportunities.

Managing soils sustainably is becoming ever more important because society exerts pressure on soils. These pressures include climate change, land use change and land management which lead more directly to threats like pollution, sealing by infrastructure, soil compaction and erosion. The biggest threat to soils is climate change. Soils with high organic content and with good soil structure will be more resilient and therefore better able to retain and store more water for plant growth.

Extreme weather events such as more intense rainfall, prolonged periods of dry and cold weather, and more extreme and frequent flooding events are likely to increase in future

due to climate change. More intense rainfall increases the challenge of preventing soil erosion and run-off emphasising the importance of appropriate soil husbandry and land management to prevent an increased risk of flooding, pollution and the risk of landslides.

Agriculture is a dominant land use in Carmarthenshire. Sustainable land management is hugely important for farmers, the environment, the local economy, our culture and communities. Intensive agricultural practices can damage soil structure (e.g through compaction, the creation of fine seed beds or reducing the levels of organic matter and biological activity), which may then contribute to water pollution from soils/sediments and nutrients. This also has a negative impact on the ecological status of rivers, coastal and estuarial waters in the county.

Tree Cover

The presence of trees is vital to communities, they improve air quality, store carbon,

provide habitats and improve the well-being of people.

Regionally, Carmarthenshire has the most tree cover at 17%, with Ceredigion and Pembrokeshire having 15% and 10% respectively. In our county we have the an asset in Brechfa forest which provides not only value in

terms of the research carried out at the site but also

for recreational activities.

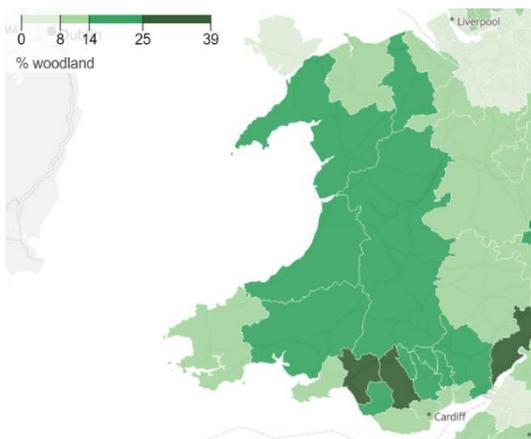


Figure 2: Woodland as a percentage of area, local authority districts, UK, 2019

Some urban areas, in particularly Llanelli, could benefit from greater tree cover. Llanelli suffers from issues around water management that greater tree cover would help resolve. When considering tree planting it is important to right trees in the right place for the right reasons

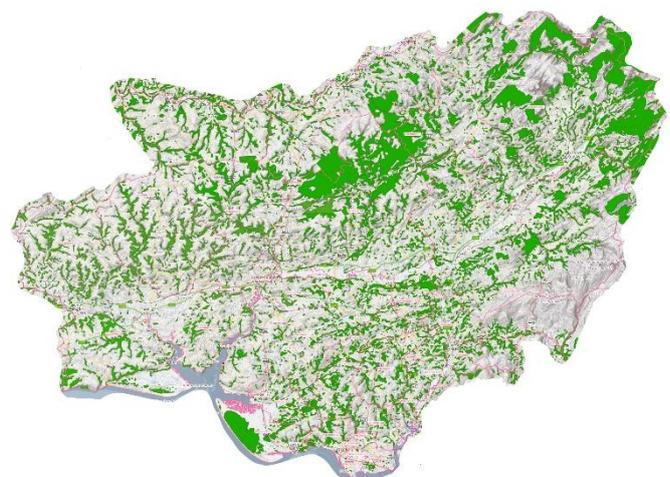


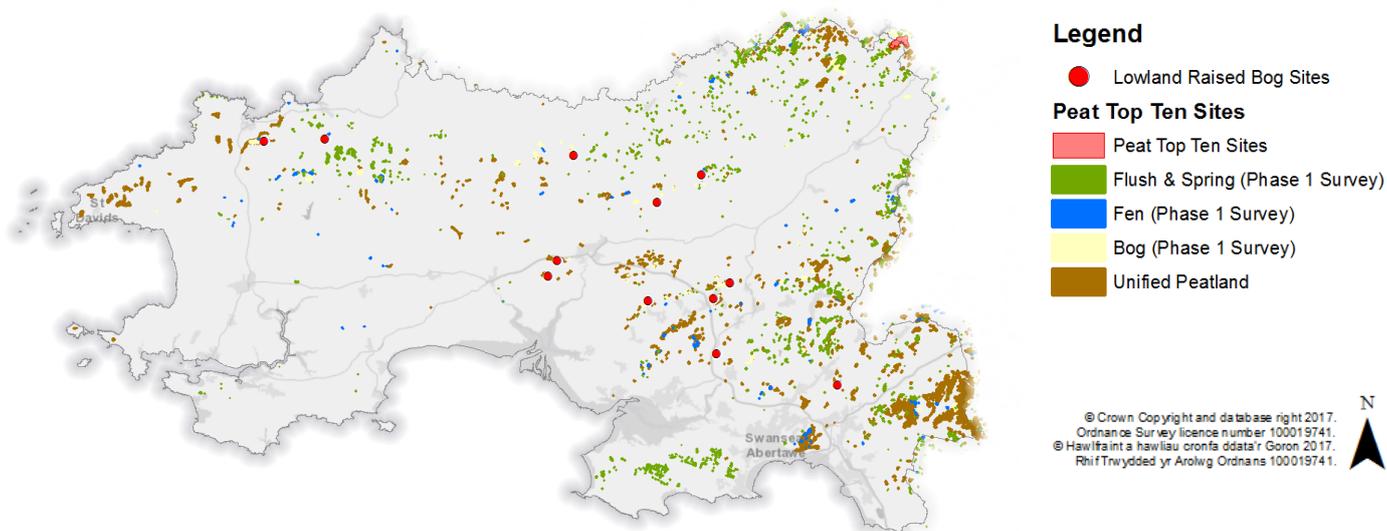
Figure 3: Location of trees in Carmarthenshire, taken from the [National Forest Inventory](#)

Hedges and Edges

Species-rich hedgerows with mature hedgerow trees are also a significant landscape and historic feature across much of the county. They can be important habitats for butterflies, moths, birds and small mammals. They are important cultural features in the landscape. Hedgerows act as windbreaks, help prevent soil loss, reduce flooding and link habitats. However, the current condition of hedgerows in the county is very variable - some have been restored/replanted in recent years, but others have been removed or continue to decline through lack of appropriate management. Today we also see the impact of ash dieback disease on our hedgerow trees.

Bogs and Peatlands

The extent of bog habitats has also shown a significant decline through time. Bog habitats are now scarce in the county, isolated within the wider agricultural landscape. They have been drained, planted on or lost to development. The Carmarthenshire Bogs Project has been working to restore six sites with lowland raised bog habitat, the council is working to restore the bog at Llyn Llech Owain country park and the Wildlife Trust of South and West Wales manage important sites at Carmel and Cors Goch, near Carmarthen.



Air Quality

Clean air is a critical natural resource and is essential in protecting not only human health, but also Wales's natural and built environment. Air pollution affects both urban and rural areas. No levels of air pollution are 'safe'. Although air pollution from industry and transport has declined in recent decades, nitrogen-containing air pollutants continue to cause significant environmental harm where previous emissions of sulphur caused widespread acidification of water resources and damaged trees and forest soils.

Air quality monitoring in Wales is primarily undertaken by Local Authorities and, through several national networks, managed by the Welsh Government.

Poor air quality in the UK is estimated to cause 40,000 early deaths annually (Air Quality Expert Group, 2020), with 2,000 deaths in Wales alone, which amounts to 6% of total deaths (Public Health Wales, 2016) This was demonstrated during the COVID-19 pandemic where lockdown restrictions affected energy use, emissions and some air pollutants across the UK. Initial assessments suggest a reduction in nitrogen oxide (NOx), including NO₂ emissions in urban areas during lockdowns, as a result of lower traffic volumes (Clean Air Advisory Panel, 2020). This and the associated reduction in traffic noise is likely to have had a positive impact on well-being. A growing body of evidence indicates that the impact of air pollution goes beyond physical health and can impact on human well-being due to people's personal connections to the richness of their natural environment.

The effects of air pollution disproportionately affect those in deprived areas (SoNaRR2020 Aim 3 p16).

Particulate Matter

Particulate matter (PM) consists of a mixture of solid particles and liquid droplets found in the air. A primary PM is directly emitted from source, a secondary PM can form in the atmosphere due to chemical reactions between pollutant gases. Overall figures for the region are lower than World Health Organisation (WHO) guidelines. Non-exhaust road transport emissions, domestic and industrial emissions contribute to the local peaks in urban areas. Domestic wood and coal burning also make a significant contribution. The size of the PM and length of exposure are key factors in the potential of adverse health conditions and determine where the impact will be on the body. Small particles less than 2.5µm in diameter pose the greatest problems because they can get deep into the lungs and bloodstream leading to respiratory problems. When exposure to PM reduces lung function, it also reduces the ability of people to access nature and benefit from it; as a result, this also reduces their quality of life. There is extensive evidence to show that long term exposure to PM increases mortality and morbidity from cardiovascular and respiratory diseases. PM has also been classified as carcinogenic to humans and causing lung cancer.

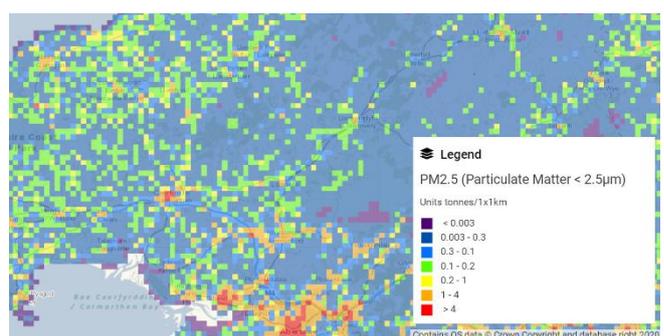
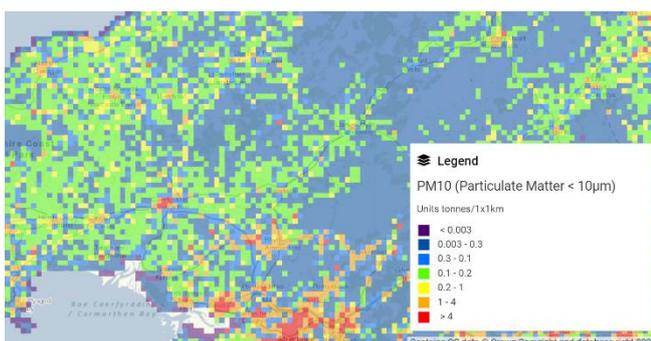


Figure 5: Particulate matter under 10 µm - take from National Atmospheric Emissions Inventory

Figure 4: Particulate matter under 2.5 µm - take from National Atmospheric Emissions Inventory

Air Quality Management Areas

Local authorities are responsible to declare Air Quality Management Areas (AQMA) if national air quality objectives are not likely to be met. Across the region (Carmarthenshire, Ceredigion and Pembrokeshire) there are five active AQMAs: three in Carmarthenshire, none in Ceredigion and two in Pembrokeshire (see Table 1).

Local Authority	AQMA Name	Pollutants	Date Declared
Carmarthenshire County Council	Llandeilo AQMA	Nitrogen dioxide NO ₂	11/11/2011
Carmarthenshire County Council	Llanelli AQMA	Nitrogen dioxide NO ₂	02/08/2016
Carmarthenshire County Council	Carmarthen AQMA	Nitrogen dioxide NO ₂	02/08/2016
Pembrokeshire Council	AQMA No. 1 2012	Nitrogen dioxide NO ₂	06/07/2012
Pembrokeshire Council	AQMA No. 2 2012	Nitrogen dioxide NO ₂	06/07/2012

Table 1 AQMAs in the Carmarthenshire, Ceredigion and Pembrokeshire region

Ammonia

Nitrogen is an important nutrient for plant growth and food production but excess can be emitted to the air as ammonia (NH_3) from agriculture and waste management and re-deposited onto soils and plants, and into freshwater bodies. The impact of nitrogen, in particular ammonia pollution, is significant with 88% of sensitive habitats being damaged by high concentrations of nitrogen. More than half of Wales now experiences ammonia concentrations that are too high for lichen- and bryophyte-rich ecosystems to function properly; these include ancient woodland, bog, heathland and acid grassland (See Figure 6). In Wales, emissions of ammonia

were estimated at 25kt in 2012, with agriculture contributing 85% of the total, and 52% of agricultural emissions

derived from cattle manure management alone. Concentrations are likely to increase unless measures to control agricultural emissions are implemented. Ammonia emissions can transform in the atmosphere and contribute to increased levels of particulate matter and ozone causing harm to human health. Agriculturally-dominated and sparsely populated counties like Pembrokeshire, Carmarthenshire and Ceredigion have an important role to play – and arguably a responsibility for – mitigating any negative impacts of agricultural emission on the wellbeing of people across the country. A key concern identified in SoNaRR 2020 “are the localised impacts of new ammonia sources associated with the rapid expansion of intensive poultry developments”. (Aazem and Bareham, 2015 cited in SoNaRR 2020).

Actions Going Forward

Measures to combat air pollution, for example GI, can help transform urban and rural spaces by improving enjoyment and promoting positive behavioural changes. In addition, the cultural services imparted by ecosystems often depend on nitrogen-sensitive biodiversity, for example, in flower-rich meadows or lichen-draped woodlands.

The Welsh Government is committed to building healthier communities and better environments. Clean air has a central role in creating the right conditions for better health, well-being and greater physical activity in Wales. In September 2017, the Welsh Government published its national strategy, Prosperity for All, which sets out a cross-

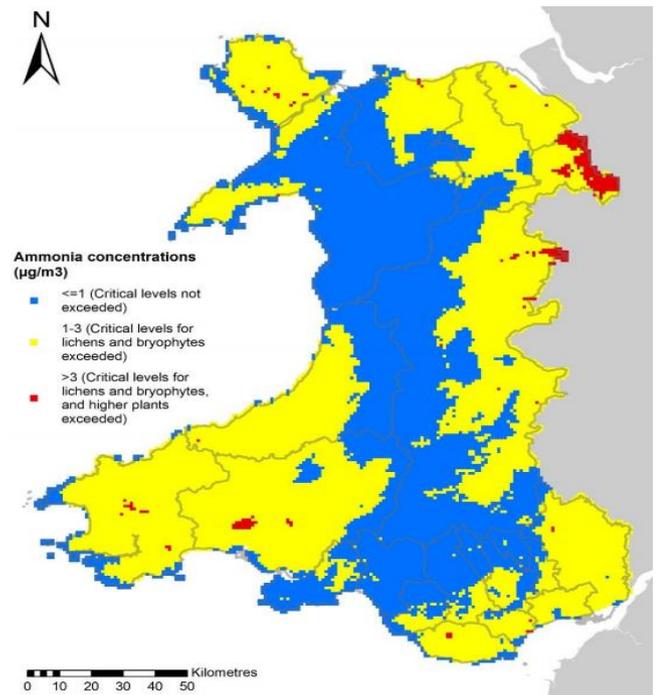


Figure 6: Ammonia concentrations across Wales

government commitment to reducing emissions and delivering vital improvements in air quality through planning, infrastructure, regulation, and health communication measures.

The existing vegetation in Wales takes up a significant amount of air pollutants. Restoring land cover and changing land use practice to maximise the regulating provision of the ecosystems can further reduce air pollutants. Studies have shown that this approach could be more beneficial than traditional abatement technologies and can be especially effective in combination.

Encouraging the use of the cleanest modes of transport for freight and passengers, active travel and the creation of urban green space, are likely to be key in reducing emissions in the future.

Expansion of the air quality monitoring network in Wales, in both the urban and rural environment would help strengthen our evidence and reliance on computer modelling, to better understand the scale and impact of key pollutants such as ammonia on the environment. Better data sharing as a result of new legislation, especially within the agricultural sector, will also allow us to target our interventions and policy to ensure pollution can be minimised.

Wildfires

Wildfires continue to be a problem across Wales with 15,576 grassfires between 2015 – 2020. In the same period there were 4947 grassfires in the Mid and West Wales Fire and Rescue service area.

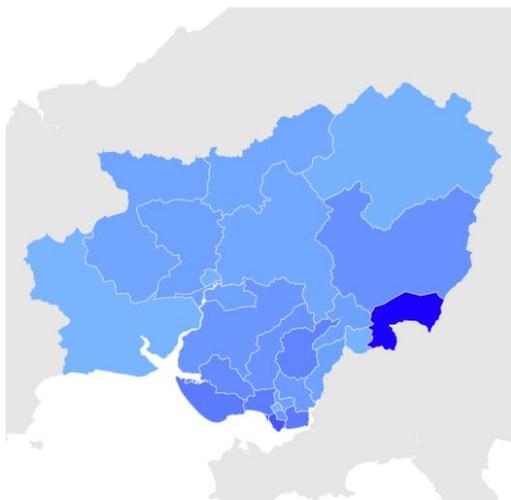


Figure 8: Deliberate grass, woodland and crop fires recorded by MSOA 2016-21

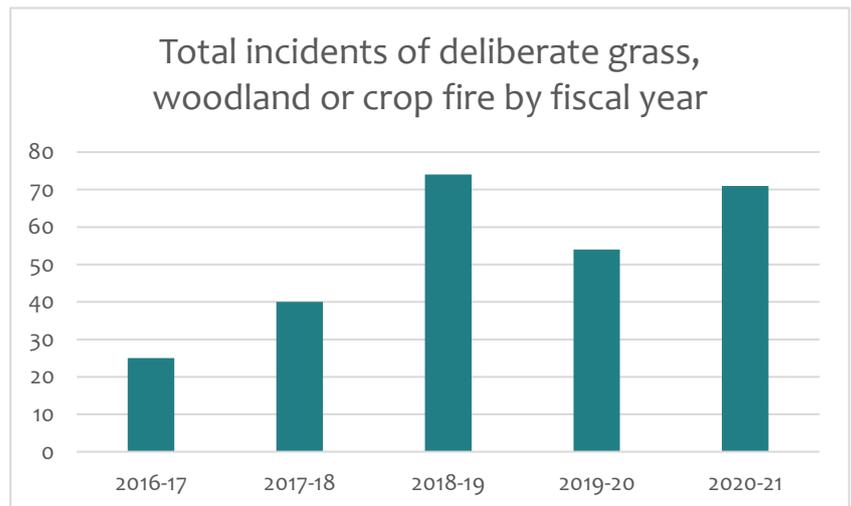


Figure 7: Deliberate grass fires reported my Mid and West Wales Fire and Rescue Service

In Carmarthenshire the areas most affected by deliberate wildfires are: Brynaman, Y Garnant & Glanaman, Llanelli South and Bynea & Llwynhendy. These are shown in blue on the graph of Carmarthenshire in Figure 8. Incidents of wildfires in our county have been more or less steady over the past five years.

The environmental harm caused by arson is significant, it can damage or destroy:

- Habitats, vulnerable plants, wildlife and grazing.
- Properties and historic features.
- Alter the physical structure, composition and hydrology of the soil.
- Affect water quality.
- Affect Air quality and potentially cause traffic accidents.

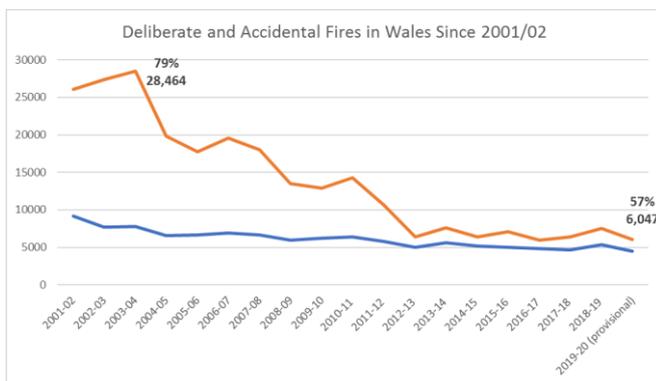


Figure 9: Long term trend of grass fires in Wales

Smoke from wildfires carries small particulates that pose a danger to human health, as detailed above. To combat the setting of deliberate wildfires in Wales an all Wales task force has been created, Operation Dawns Glow. When looking at the all Wales figures from 2001/2 there has been a significant improvement in both deliberate and accidental grassfires.

Flood Risk

Flooding cause's significant damage and distress to those who live in areas affected. Floods are one of the most common environmental emergencies; with widespread and long-lasting health, environmental and financial impacts affecting homes and businesses and can significantly disrupt the normal functioning of whole communities. From a health perspective, quite often the worst affected are the most vulnerable in society.

Just over 15,000 properties in Carmarthenshire are currently at some level of flood risk from river or surface water flooding or coastal inundation. 9713 properties are at low risk, 2292 at medium risk and 3151 at high risk. Climate change will increase the number of properties, infrastructure and key services at risk of flooding. Places which do not currently flood will become at risk of flooding and those already known to be at risk will see the level of that risk become greater.

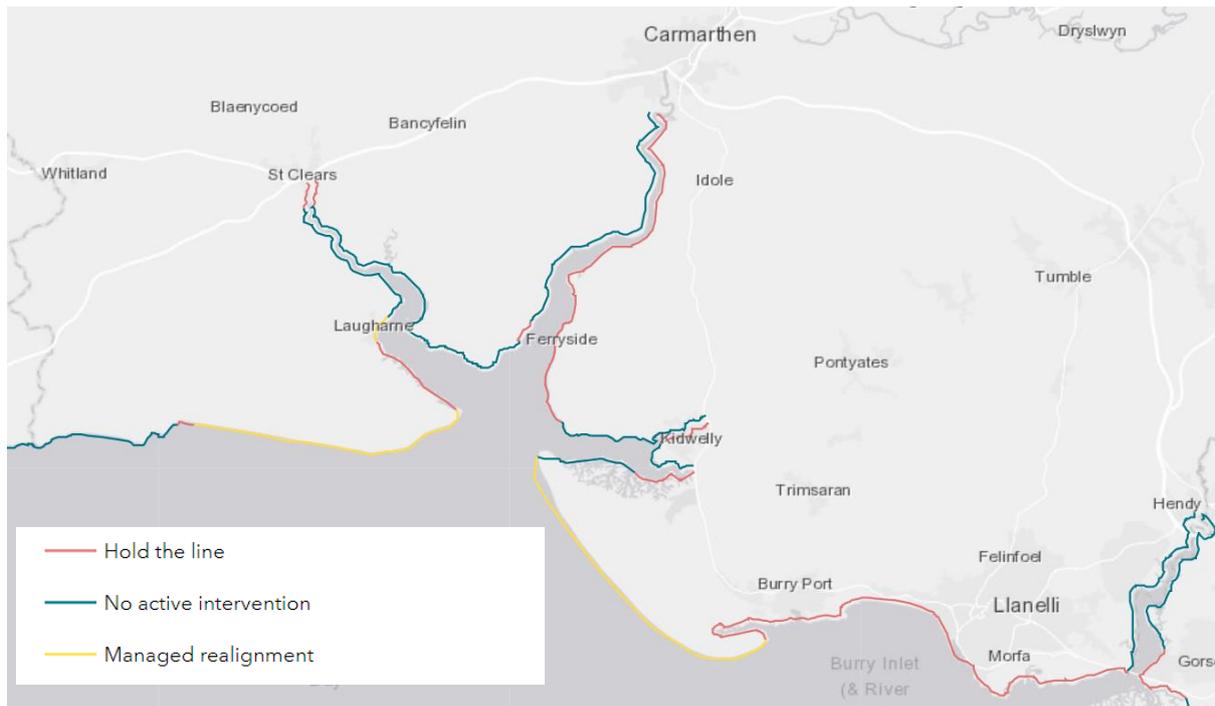
Extreme weather events will become more common; events such as the 2020 storms will increase the level and frequency of flooding. Three key climate change impacts relative to flood risk are extreme rainfall events, river flood flows and sea level rise.

NRW Communities at Risk Register (CaRR) identifies the 5 Carmarthenshire communities most at risk (i.e. combined tidal, pluvial and fluvial scores). Llanelli is considered a ‘Significant Flood Risk Area’ at a Wales scale i.e. it falls within the top 33 communities at risk in Wales.

CaRR ‘community’ name	Top 5 communities Max score ranking (undefended) (CaRR 2019)
Llanelli	1
Ammanford	2
Ferryside	3
Llwynhendy	4
Dafen	5

Shoreline Management

Shoreline management deals with coastal erosion, designating areas that require intervention to either hold the current shoreline, reshape the coastline or areas where no intervention is required. Managing coastal erosion will play a significant role in areas at flood risk from the sea.



Water Quality and Health

Our rivers, lakes, groundwater, estuaries, coasts and seas provide us with important natural benefits, many of which contribute to the well-being of local communities and the wider population. These benefits include:

- Providing clean fresh water for people to drink, for industry and for agriculture
- Clean rivers and seas for recreation, relaxation and enjoyment
- Income generation from business and industry, tourism, energy production, angling and commercial sea and shell fisheries
- Supporting resilient terrestrial and marine ecosystems and habitats
- Providing seafood (fish and shellfish) and for crop growth

The county has a rich and intricate network of rivers and streams ranging from narrow, deeply incised upland streams to the more gentle lowland meandering sections of the river Tywi. This range of freshwater habitats supports plants and animals (flora and fauna) characteristic of these habitats, and the network of watercourses acts as a corridor for wildlife movement throughout the county, linking wetland sites and bringing wildlife into the heart of our urban centres. The wildlife value of the county's rivers is recognised at a European and national level through the designation of the Tywi and Teifi, together with the Taf, Gwendraeth and Loughor

estuaries, as Sites of Special Scientific Interest (SSSIs) and Special Areas of Conservation (SACs).

By working together to improve and maintain the management and quality of our water resources we can deliver benefits for the environment, the local economy, health and quality of life

The waterways in Carmarthenshire being impacted by several significant risks. The water quality is being affected by pollution from nitrates, phosphorus and sediments from agriculture and sewage. Changes to river channels and banks pose barriers to fish, river structures and disruption of natural habitats. Invasive species are widespread, including Japanese knotweed and Himalayan balsam. There is an increasing demand for water.

To assess Water Framework Directive (WFD) compliance, NRW assess the condition of water bodies through monitoring, which produces an overall classification. The current classification or status for each water body is shown

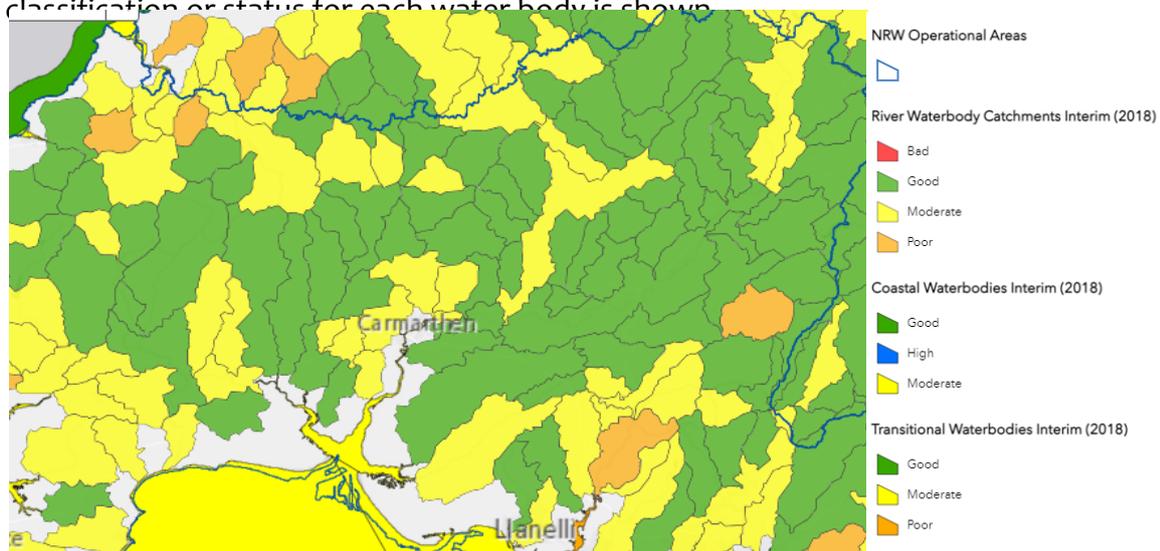


Figure 10: Classification of water bodies in Carmarthenshire taken from [Water Watch Wales](#)

Bathing Waters

In Carmarthenshire we are lucky to be able to swim and enjoy recreation in some of the cleanest waters in the UK. This is similar for our neighbours in Ceredigion and Pembrokeshire. We have two designated bathing waters in Carmarthenshire, at Pembrey and Pendine, both have which have achieved excellent status. To ensure that we maintain the quality of the assets in our county it is important to monitor the impact of pressures on the water quality. These main pressures experienced in Carmarthenshire are: the impact of tourism, out-dated sewage systems and impacts from agriculture.

Pollution Incidents

Between 2016-2020 there were 507 proven incidents of environmental pollution in Carmarthenshire. 86% were low impact events and 14% were high impact. Agriculture is the primary cause of environmental pollution, contributing to 135 of the total; followed by oils and fuels, contributing to a further 67 events.

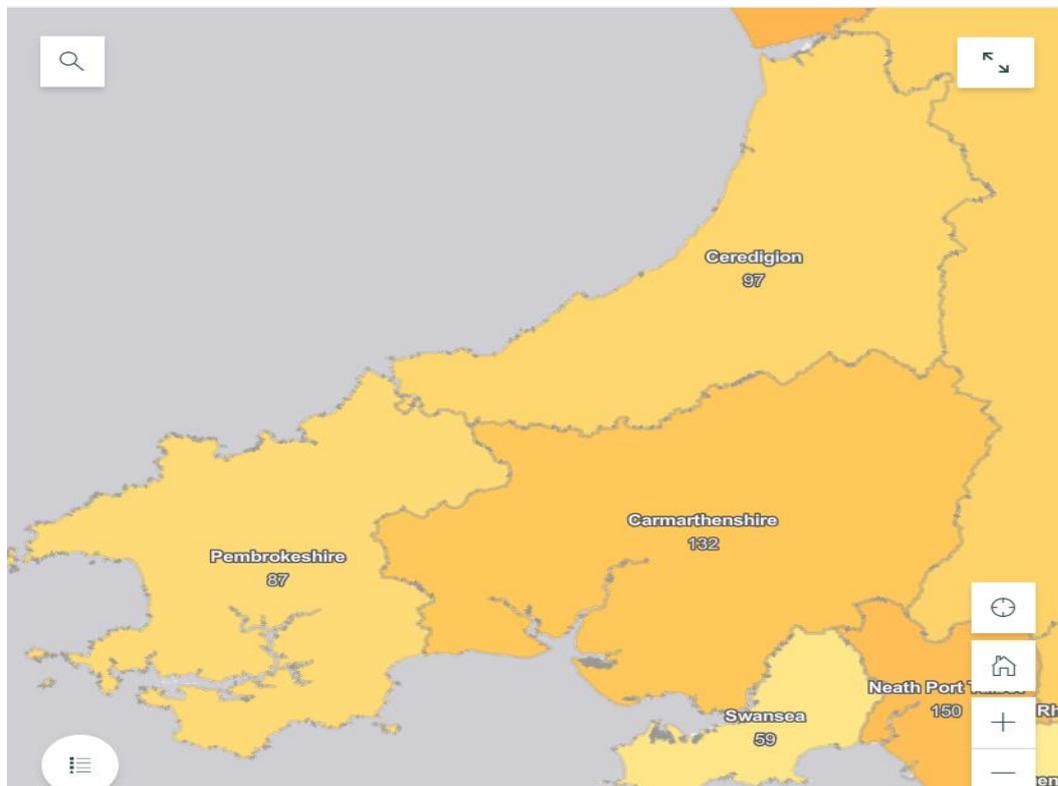
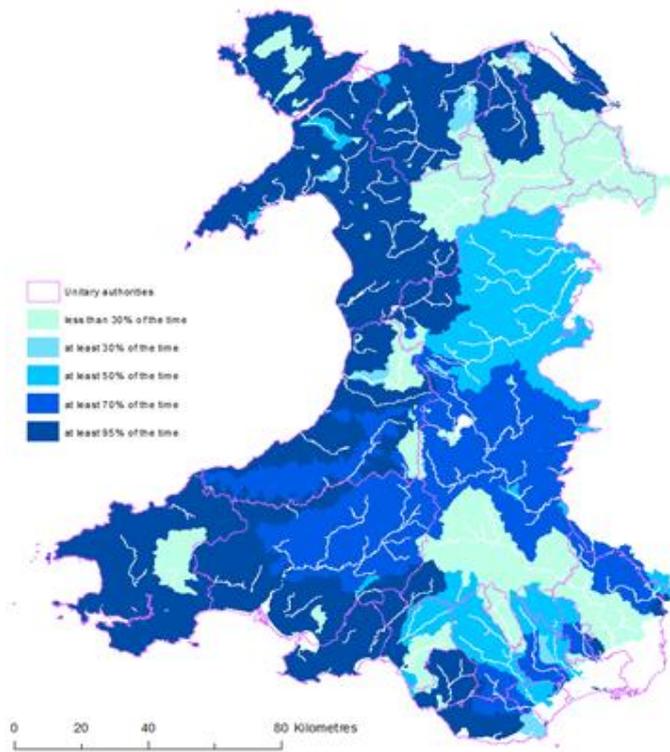


Figure 11: Number of confirmed environmental pollution incidents, taken from the [Wales Environment Pollution Incidents Interactive Map](#)

Water resources



The demand for water must be balanced with the importance of protecting water resources for a healthy environment. Water is taken from rivers in Carmarthenshire for public water supply, agriculture, industry, power generation and amenity uses. 90% of the water taken in Carmarthenshire is for public water supply. River flows in the Tywi are influenced by the operation of Llyn Brianne reservoir which is in the upper catchment. Water is not directly abstracted from the reservoir but is instead released to

augment flows in the Tywi for abstraction for public water supply further downstream. The River Tywi is a designated SAC and so affords a high level of environmental protection, ensuring adequate flows must be maintained.

Demand for water is increasing as the local population increases and tourism numbers increase. The impacts of COVID led to an even greater increase in tourist numbers but whether this increase will continue in future is unknown. Water resources will come under increased pressure in the future, impacting the ecosystems, people and businesses which rely upon them.

Waste + Recycling

Living in a 'disposable' society where waste is continually generated increases pressure on the use of our natural resources. Once waste is generated it requires treatment at facilities that require land, consume energy and water and produce emissions to the environment. If waste is not handled and treated properly it can be harmful to ecosystems, biodiversity and the well-being of the population.

Wales is transitioning to a high recycling nation which is a necessary component of a circular and regenerative economy. However, more needs to be done to prevent waste from being generated if we are to achieve zero waste and one planet living. The pace of becoming a high recycling nation must be matched with the provision of suitable waste

facilities and end markets for materials, particularly for material streams that are currently difficult to recycle.

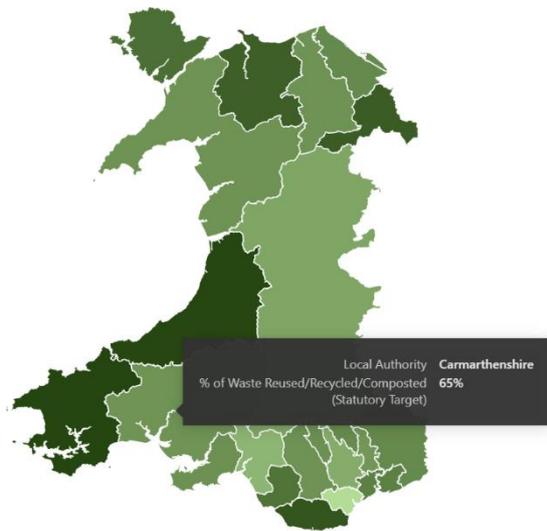


Figure 12: Percent of all waste recycled, taken from [Powys Data](#)

Residents in our county have contributed to an excellent level of recycling, at 65% of waste. This figure can still be improved, with an aim to reach a similar level of neighbouring counties in our region.

Fly tipping occurs at a significant level, with the total number of recorded events being the second highest in Wales, only after Cardiff. Fly tipping has seen a large rise in recent years, after previously reducing up to 2016, the figure has now quadrupled. Whereas other areas in our region have significantly reduced.

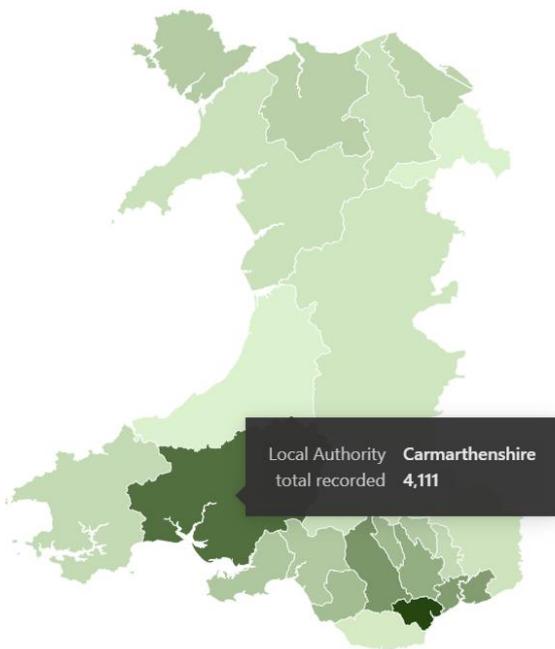


Figure 13: Incidents of fly tipping, taken from [Powys Data](#)

Ecosystem Resilience

Ecosystem resilience is the capacity of ecosystems to deal with disturbances, either by resisting them, recovering from them, or adapting to them, whilst retaining their ability

to deliver services and benefits now and in the future. Disturbances include (but are not limited to): habitat and species loss and deterioration; climate change; pollution and invasive non-native species.

Healthy and resilient ecosystems that are resistant to threats and disturbances provide benefits including:

- Clean air and water
- Provision of food
- Ability to adapt to climate change and extreme weather events e.g. flood prevention
- Store carbon ('green' and 'blue') to mitigate the impacts of climate change
- Protected habitats, biodiversity and landscapes for their intrinsic value and associated improved health and well-being
- Economic from tourism, recreation and enjoyment of landscapes and iconic species such as seabirds and seals

Work that can be done to improve the ecosystem resilience in our county starts with the development of an understanding of value of the natural environment and recognise biodiversity as an asset. Biodiversity underpins the social and economic systems we rely on in Wales and despite a more integrated policy framework, we struggle to find ways to measure it as an economic asset. Clear information is needed to show where declines in biodiversity and other natural resources are leading to impacts on wellbeing. Developing this understanding and bringing that understanding into decision making will be a critical step in building future ecosystem resilience.

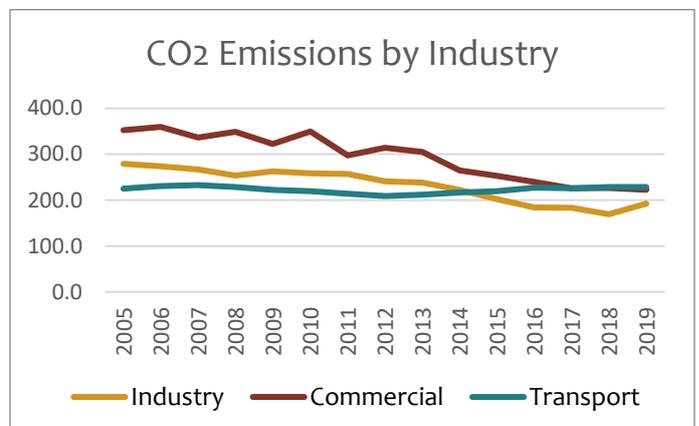
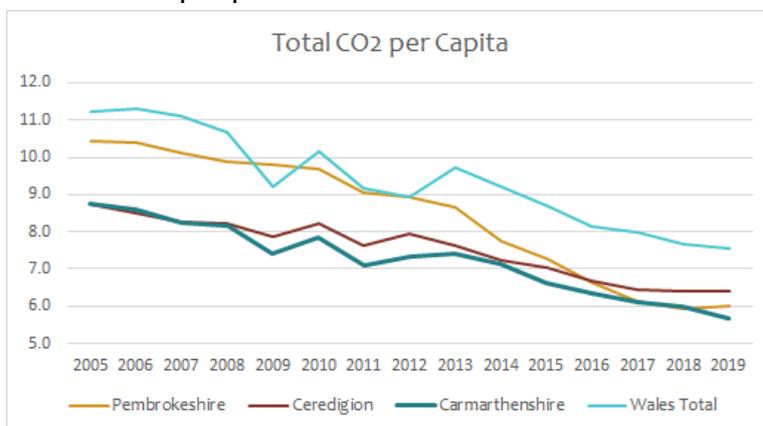
Climate Change

There is clear evidence of climate change in Wales, e.g. increase in mean daily temperatures, reduction in air frosts, and increase in storm events. This is predicted to have a range of impacts on habitats and species including a decline in native species, changes in migration patterns and increases in invasive species. In addition, the State of Natural Resources Report identified the potential for increased coastal erosion, affecting beaches, intertidal areas and other coastal features – this could have a significant impact along our extensive coastline. Any climate change policies need to be integrated with policies for biodiversity. A climate emergency is a biodiversity emergency. Climate change mitigations can exacerbate the biodiversity crisis so there is always a need for them to be considered together.

Further emphasis should be given to the role of nature recovery in both mitigating and adapting to climate change, recognising the significance of these two interrelated challenges. By putting nature into recovery, we can tackle climate change. Thriving habitats can safely lock up vast amounts of carbon, while providing other vital benefits that help us adapt to our future climate, such as flood prevention, clean water and improved health and wellbeing.

Carbon Dioxide

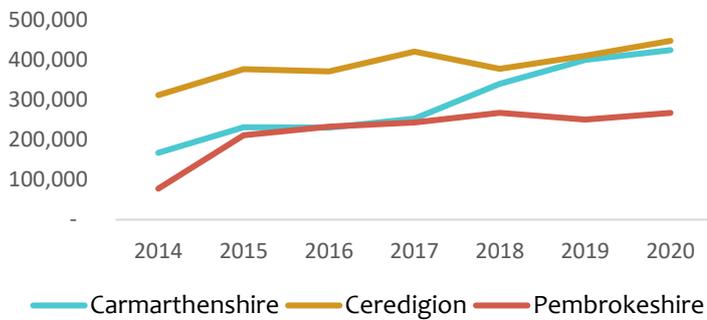
Carbon dioxide emissions do not directly pose the same health risks as other gases, such as carbon monoxide. However, impacts of high carbon dioxide emissions are felt globally through climate change; in turn creating a large impact on the health and well-being of people.



The CO2 emissions per capita in Carmarthenshire are reducing, following the same pattern as seen in Ceredigion, Pembrokeshire and across Wales. Overall emissions across the three sectors, commercial, transport and industry are in decline. Emissions from transport has the commercial sector are now producing around equal emissions after a slight increase in the emissions from transport across the county.

Renewable Energy Generation

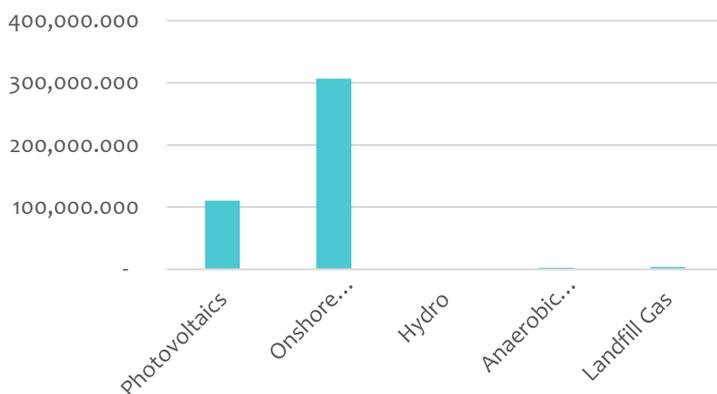
TOTAL RENEWABLE ELECTRICITY GENERATION (MWh)



The capacity and generation of renewable electricity has been increasing in Carmarthenshire, the wider region, and across Wales in recent years.

As of 2020 there were 4534 renewable energy sites in Carmarthenshire, a significant increase from the 3046 sites present in 2014. Of these, onshore wind farms generated the most electricity in 2020, followed by photovoltaics.

Renewable Electricity Generated (MWh) in 2020



Total Renewable Energy Sites

