



Llywodraeth Cymru
Welsh Government

Science Evidence Advice (SEA)

Exploring the health impacts of climate change in Wales

6 June 2024



Outline



- Background
- Temperature
- Wales-specific climate change impacts
- Cross-Border Issues
- Inequality of impact
- Potential actions
- Research recommendations



Background



In March 2021, Welsh Government set a target to achieve Net Zero by 2050

PHW published its climate change health impact assessment report in July 2023.



Our report aims to further contextualise the impact of climate change - with a focus on Wales-specific impacts. It also explores the disproportionate impacts.

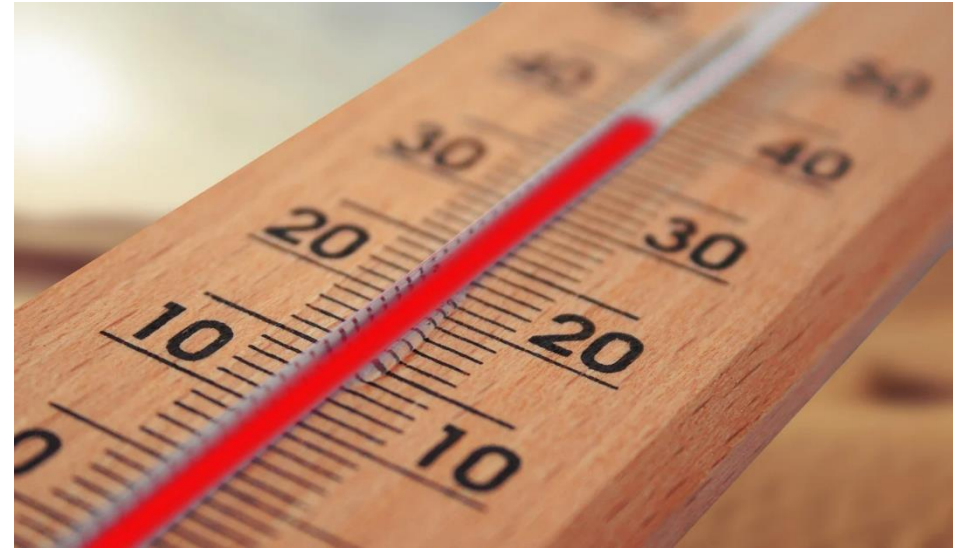
In 2023, UKHSA published 'Health Effects of Climate Change' report.



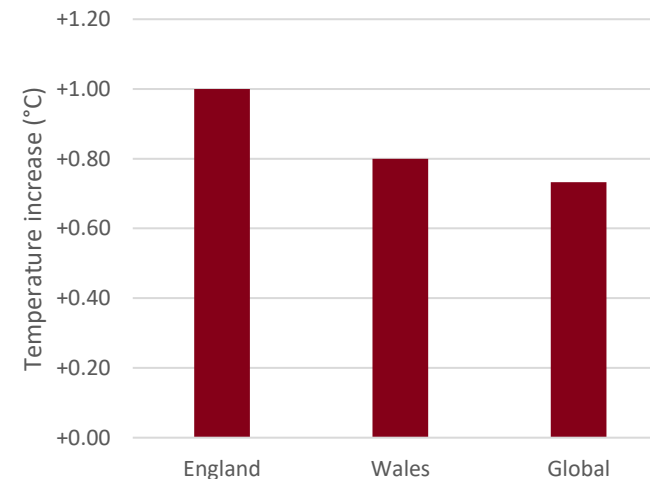
Temperature



- Temperatures have increased over the last century.
- In Wales, we can expect to see more rainfall, more flooding in low-lying coastal areas, and hotter, drier summers.
- By 2050, temperatures in Wales are projected to increase by 1.2°C.
- Cold weather accounts for significantly more deaths in Wales, averaging, 4,030 annually compared to 31 for heat-related deaths between 2000 and 2019.
- A decrease in cold weather will help reduce the mortality and morbidity impacts of temperature.
- Rapid rises in heat can lead to several types of illness; heat stroke and related conditions can cause death.



Change in average temperature (°C) between the period 1961-1990 and 1990-2020



Wales-Specific Climate Change Impacts

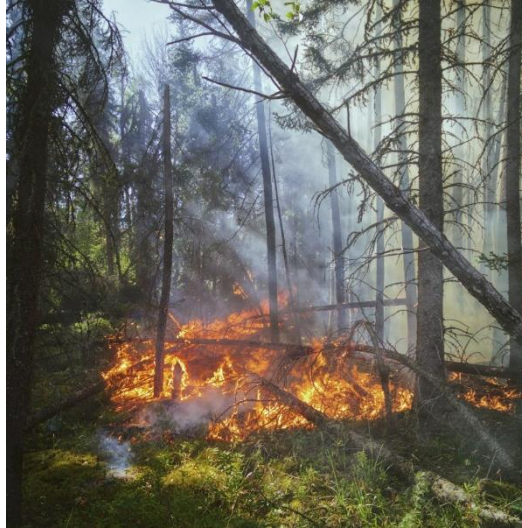


Coastal Areas & Flooding



- Wales has a large coastal border.
- Approximately 8% (148,000) of those at risk of flooding in the UK are in Wales.
- Infections caused by water-borne bacteria could increase.
- Flooding is likely to impact mental health.

Wildfires



- In Wales, there were nearly 2,500 wildfires between April 2021 and March 2022 with nearly half occurring in the South Wales valleys near people's homes.
- There are 7 sites at high risk of wildfire in the South Wales valleys.
- Controlled burns and vegetation management help mitigate this risk.

Coal tips



- Heavy rainfall affects the stability of Wales' coal tips and can lead to recontamination from old mines. This can cause poisoning and death of cattle.
- Health may be affected through consumption of allotment & garden produce from inundated areas.

Urban v rural



- 88% (2021) of Wales' population live in built-up areas - prone to overheating and pollution.
- Those with pre-existing cardiovascular and respiratory disease, young and older people, pregnant women, and low-income communities are more susceptible to the health effects of air pollution.
- There is a combined effect of air pollution and heat on cardiovascular mortality.

Wales-Specific Climate Change Impacts: Potential Actions

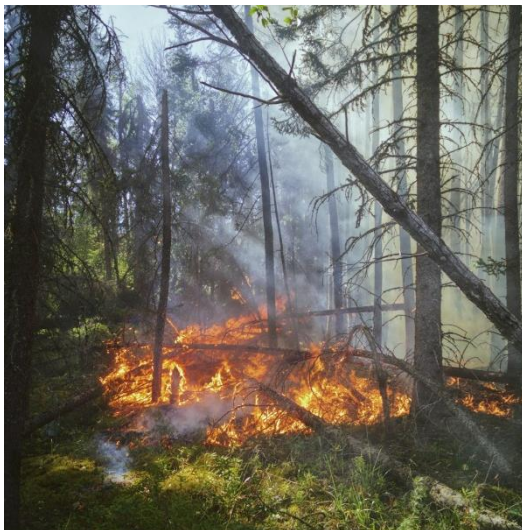


Coastal Areas & Flooding



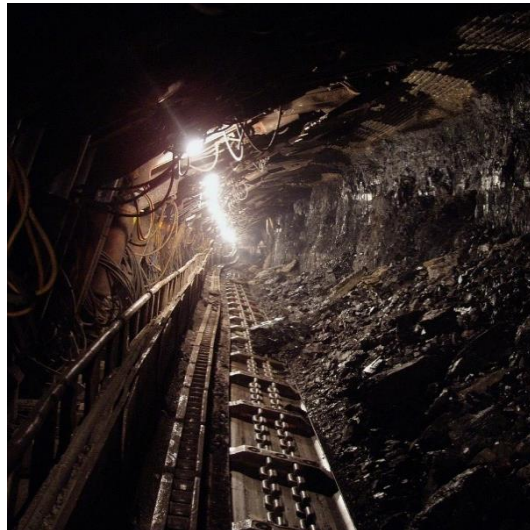
- Communities at high risk of flooding should be identified with suitable mitigation measures put in place.
- Consider health impacts of flood warnings versus flood occurrences.
- Collate data to identify localised clusters of chemical poisoning.

Wildfires



- Identify protective measures used in warmer climates that are effective at minimising harm from wildfires.

Coal tips



- Monitor silage from coal tips.
- Issue public health guidance around consumption of garden produce from areas at risk of contamination.

Urban v rural



- Consider green spaces and planting of trees in highly urbanised areas.
- Greener public transport and access to safe pedestrian walkways and cycle lanes



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Cross-Border Issues

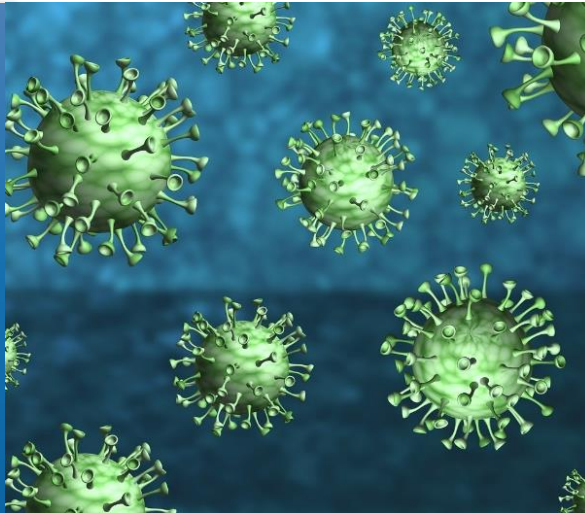


Cross Border Issues



Infectious disease

- Warmer temperatures can create ideal conditions for infectious diseases to spread.
- Other Infectious diseases such as influenza may reduce.
- It's difficult to exclude disease importation if a disease becomes prevalent in other countries.



Vector-borne disease

- Lyme disease is the predominant vector borne disease in the UK.
- Disease-carrying mosquitoes may reach Wales but would require temperatures above 20°C.
- Climate change would increase the period midges remain active, increasing the risk of importation of Blue Tongue Virus from mainland Europe.



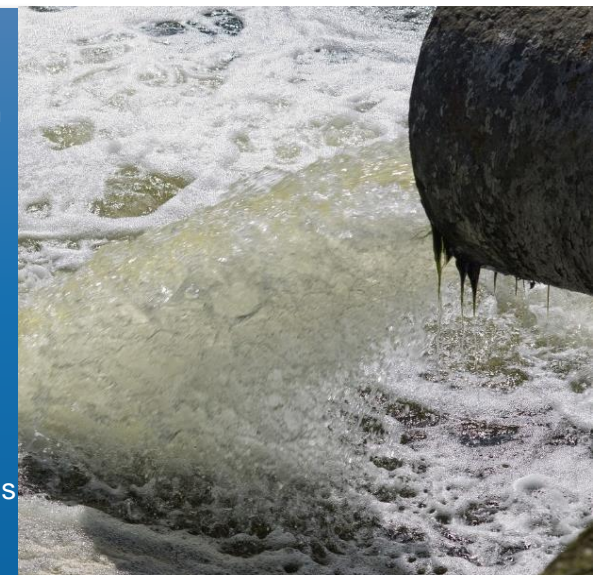
Food supply

- Nearly half the UK's food is imported from overseas. This is expected to increase.
- In the UK, higher temperatures could extend the crop growing season but wetter conditions may reduce crop yields.
- Warmer, wetter weather may increase pest outbreaks affecting crop yields.
- Incidents of food poisoning may increase because of climate change.



Bacteria and Antimicrobial Resistance (AMR):

- Only 35.9% of UK surface water bodies had "good" or "high" water quality status in 2022.
- There's increased risk of infection from water borne disease (if warm weather increases water activities)
- Heavy storms increase discharge of untreated sewage affecting waterway quality.
- Increased bacterial infections may exacerbate already acquired AMR.

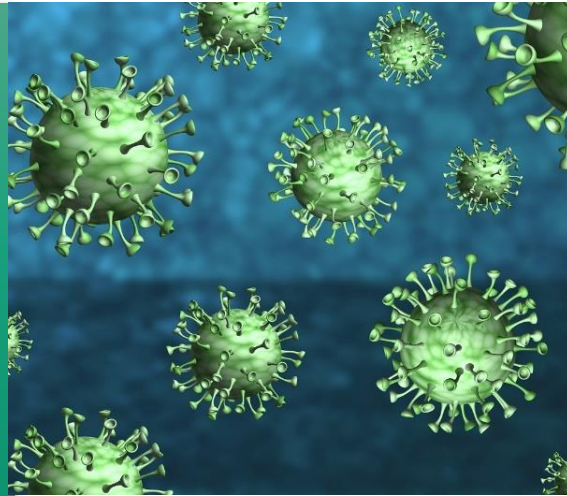


Cross Border Issues: Potential actions



Infectious disease

- Integrate lessons from previous imported infectious diseases into pandemic preparedness planning.



Vector-borne disease

- Monitor rates of vector-borne disease in Wales.
- Plan mitigating action should cases of imported vector-borne disease increase.



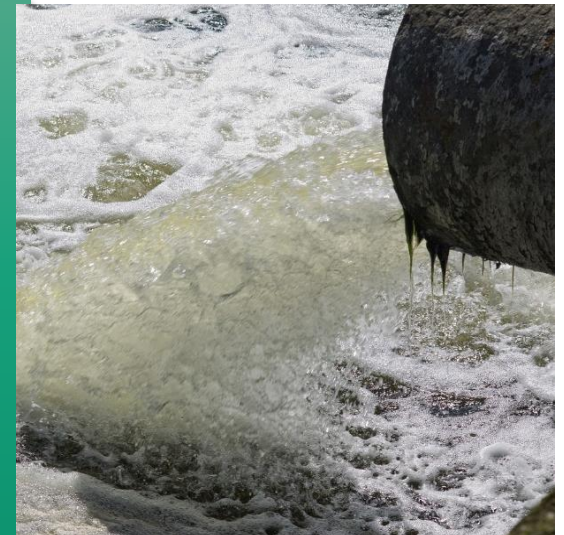
Food supply

- Reduce food spoilage by identifying by-products that can be turned into ingredients.
- Increase domestic food production in crops.



Bacteria and Antimicrobial Resistance (AMR):

- Develop public health guidance on swimming in waterways.
- Take action to contain untreated sewage particularly during high rainfall.





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Inequality of impact of climate change on the population of Wales



Inequality of impact



Ageing population

The elderly and those with pre-existing cardiovascular conditions are more susceptible to adverse health outcomes from extreme heat.

During the 2022 heatwave in Wales, deaths in hospitals and care homes were above average



- Approaches to winter planning to protect the older population should be replicated for warmer weather with specific protocols in care homes and hospitals.

Individual risk factors

Warmer weather can have a positive influence on physical activity, bad mood, or bipolar disorder.

However, there's an increased risk of suicide and mental health hospital admissions during periods of higher temperature.



- The positive impact climate change should be explored and maximised.
- Further research into whether heatwaves lead to more mental health admissions.

Occupations

Over 40% of the workforce in Wales work in jobs more exposed to climate change health impacts.

Males and younger workers may be at a higher risk of occupational heat-related injury.



- Develop workplace guidance for occupations at risk of the health effects of climate change.

Inequality of impact



Housing/Living conditions



Climate change can affect the temperature regulation of dwellings.

The percentage of new homes with EPC rating C or above in Wales rose to 98%. Older housing stock may remain with poorer energy efficiency.

- Continue building energy efficiency standards.
- Support poorer communities through initiatives to improve heat regulation by adaptations.
- Improve adaption in institutional settings

Other vulnerable groups



Pregnant Women, Older People, and those with illnesses are at a higher risk for MH impacts. Those with limited mobility are less able to adjust their environment.

Babies, Children, and Young People are more sensitive to extreme heat.

- Develop advice tailored to vulnerable groups.
- Ensure home care remains consistent with checks to ensure adjustments to environments are made.
- Issue public health advice during periods of high pollen, particularly to those with asthma.



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Further Research



Recommendations for further research



- **Continue using SAIL research programme** to focus on 3 issues in Wales: health impacts of extreme weather events; climate change transition risks and opportunities; and associations between biodiversity, ecosystem resilience and health.
- **Develop updated models for climate change that take account of adaptation** into 2050 and beyond.
- **Model the projected increased burden on health and care services caused by heatwaves** to estimate at what temperature these services might be overwhelmed.
- **Measure the projected burden of infectious disease** to support planning of NHS services, including pandemic preparedness.
- **Develop metrics for monitoring** the health impacts of climate change and agree Welsh Government targets supported by policy action.
- **Use behavioural insights to understand how best to support individuals at the highest risk** of health impacts of climate change.
- **Identify which population groups would be most at risk from infectious disease** usually seen in warmer climates to inform future vaccine strategy.

Thank you



- Any questions?

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