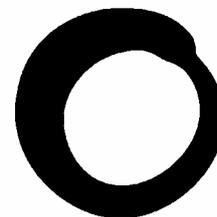


# Briefing Note



**Friends of  
the Earth  
Cymru**

**Cyfeillion  
y Ddaear  
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## Rising tide – the effect of climate change

Morfa Rhuddlan was once a wide salt marsh that stretched from Prestatyn to Abergele in north Wales. Holidaymakers flock along this coast of wide sandy bays and for the past 100 years many people have settled behind the coastal wall built in part to protect the railway. But in 1990 the sea breached 30m of sea wall to flood an area of 10 square miles. As a white wall of water crashed into homes, people waded through freezing chest high water to safety. More than 3,000 properties and 6,000 people were affected, particularly the town of Towyn.

Despite the disaster, the pressure is still on to build more executive homes in flood sensitive areas in Wales, including Towyn. Meanwhile, more families and businesses could be at risk from the devastating effects of sea level rise. Climate change will only serve to increase flooding incidents.

### What is climate change?

Top scientists agree that climate change is real, and it's happening. The world is getting warmer and the weather is getting more extreme. More droughts, storms and floods are on the way. It's a direct result of burning more and more fossil fuels for increasing energy use. The carbon dioxide (CO<sub>2</sub>) released traps the heat from the Sun in the atmosphere causing a greenhouse effect. CO<sub>2</sub> levels are now about a third higher than they were before the industrial revolution.

### Rising tide?

As the world warms, glaciers are starting to melt and the oceans are starting to expand as they heat up, leading to rising sea levels.

The glaciers on the Antarctic are estimated to be losing an area equivalent to The Netherlands each year. In 2000, 3,000 square kilometres of an ice shelf in the Antarctic broke off into thousands of small ice-bergs. The Greenland ice sheet could also melt, which could raise sea levels by several metres.

Research has shown that the ocean's surfaces have got warmer, in particular since the 1960s. Barracuda, a fish that normally likes the Caribbean, has been caught off the Pembrokeshire coast. In 2004 there was a near complete breeding failure among seabirds nesting on the northern coasts of Britain as warmer waters drove the main food, sand eels, further north.

### More floods, rising sea levels

Rises in sea level of at least half a metre by 2080 are predicted by the United Nations (UN). Low-lying areas, such as parts of Bangladesh and islands in the Pacific and Indian Oceans, are going to disappear under the sea.

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- is part of the UK's most influential environmental campaigning organisation**
- is part of the most extensive environmental network in the world, with over 60 national organisations across five continents**
- supports a unique network of campaigning local groups, working in communities across Wales**
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Storm surges will be made worse by sea level rise. London is protected for now by the Thames barrier which is being increasingly used because of high water levels. It will have to be rebuilt by 2030 to deal with higher storm surges and sea level rises. Low-lying areas will be flooded as sea defences are overcome and river estuaries expand.

People on the coasts and riverbanks of China, Egypt, Denmark and South-East Asia are most at risk - millions could lose their homes and livelihoods. In the UK, south-east England is most vulnerable to flooding, but floods such as those in Towyn are likely to increase in both frequency and severity. By 2050 up to 2 million UK homes could be at risk from flooding and coastal erosion.

### **Flooding risk in the future?**

In the UK, the Environment Agency suggests that if nothing is done about climate change the risks are enormous. An Environment Agency report on flooding designates the whole of Anglesey, and the coastline from Cardiff to the Gower is at a high risk of flooding, with Cardigan Bay and the north coast of Wales at very high risk.

Nearly 2 million properties in floodplains along rivers, estuaries and coasts in the UK are potentially at risk of river or coastal flooding. 80,000 properties are at risk in towns and cities from flooding caused by heavy downpours that overwhelm the drainage system. In England and Wales alone, over 4 million people and properties valued at over £200 billion are at risk.

The cost of floods and flood management are around £2.2 billion each year in the UK, a cost which is set to increase as a result of climate change.

Damage from coastal erosion could also affect tourism, particularly in Wales, where beaches could be washed away.

### **Health risks**

There will be substantial health implications, particularly when the floodwaters carry pollutants or are mixed with dirty waters from drains and agricultural land. The floodwaters could also cause indirect health hazards by stopping sewage treatment works for extended periods and spilling their contents over the landscape – as happened in the recent central European floods.

### **What can be done about it?**

There is much that can be done to halt and reverse the increase in the emission of the gases that are changing the climate. Far more emphasis has to be given to energy saving measures, renewable energy systems (such as wind, solar and tidal power) and good public transport systems. The planning system has a role to play in ensuring that climate change is addressed by, for example, ensuring that people can work, shop and enjoy recreation facilities near to their homes – reducing the need for excessive travel.

This can be achieved by persuading our MPs, and the Welsh Assembly, to support Friends of the Earth's Climate Change Bill that will compel the Government to achieve year-on-year reductions of 3% in 'greenhouse' gas emissions in the UK.

- The UK government needs to act now to reduce carbon dioxide emissions – from electricity generation, from transport, and from industry. *Join the Big Ask Climate change campaign to ask the government to start acting on climate change.*
- You can also take action in your own home or office by saving energy and backing renewable energy initiatives, avoiding unnecessary flights and car trips and buying locally. *For further information visit our website on [www.foecymru.co.uk](http://www.foecymru.co.uk) or phone 0808 800 1111.*
- The Environment Agency has published indicative flood plain maps online where you can look at flood risk in your area. *Check the Environment Agency's web site [www.environment-agency.gov.uk](http://www.environment-agency.gov.uk) for more information.*