

SUBMISSION TO THE COMMITTEE FOR THE ENVIRONMENT.  
INQUIRY INTO CLIMATE CHANGE.

As a former teacher of Biology, I have been aware of the evidence for climate change for a considerable period of time. I trust that you will bear with me if I review the major ideas and findings about climate change, and point to some practical implications relevant to the way we live our lives in Northern Ireland.

The consensus findings of the Intergovernmental Panel on Climate Change (IPCC) indicate that sea temperatures are warming due to rising levels of greenhouse gases. This panel has over 1000 climate scientists contributing research data and analysis, with a view to predicting medium to long-term forecasts. Knowing how temperature and rainfall will change over the next few years will be invaluable to many people, from farmers to the tourism industry, to those in charge of water supplies and water management. It is a new and controversial field, but predictions made two decades ago are pretty close to the mark. However global warming does not mean that each year will be warmer than the preceding one. In the short term, natural variability may cloak the underlying trend, and this can make it harder to convince people of the urgent need for action.

Basically the short-term weather is down to movements of air and moisture in shifting weather systems. However climate is dictated by ocean cycles, and these depend on temperature fluctuations. It takes the oceans a long time to heat up and cool down. The oceans are crucial because they store so much heat. Since the 1960s, 90% of the excess heat due to higher greenhouse gas

levels has gone into the oceans, 7% into land and ice, and just 3% into warming the atmosphere. In the long term, warmer oceans inevitably mean a warmer atmosphere, as the overall heat content of the planet rises. But the oceans have alternate heating-up and cooling-down oscillations, which are very slow to change. These cycles last about 10 years for the Pacific, and at the moment a cooling phase. But those people who remember the 1990s and early 2000s will recall the scorching summers. They haven't gone away you know!! Even a decade of planetary cooling will not change the long-term prospect of a warmer world. We can expect more of the same. It is essential to get this message across. The decade-long oceanic cycles will come and go, but the carbon dioxide we are putting into the air will stay there for centuries. Politicians have a responsibility to take the long view, and use this opportunity to plan and implement changes in advance of the expected warming-up phase from 2014 onwards.

The oceans transfer heat back to the atmosphere, and it cannot escape out to space because of greenhouse gases. So the atmosphere heats up and affects climatic trends on land ----increasing the intensity of Indian monsoon rains; increasing droughts in the Sahel, and in Australia, and in the western US; affecting the number and intensity of Atlantic hurricanes; changing rainfall patterns the world over; melting of polar ice, to mention a few effects.

Chief culprit among the greenhouse gas emissions is carbon dioxide. We must reduce and eventually stop its accumulation in the atmosphere. The respectable scientific and evidence-based consensus is that burning fossil fuels causes carbon dioxide to enter the atmosphere, and we need to reduce our burning, or use catalytic converters to trap the gas before it leaves the exhaust pipe or power

station chimney (recapture technology). We also need to reduce our demand for non-renewable forms of energy, so the power stations burn less, and electricity is generated instead using sustainable sources like wind, solar and tidal.

Reducing energy use and cutting down on greenhouse gas emissions saves people money, reduces use of scarce resources, and encourages exploration of new forms of electricity generation - all of these very worthwhile in their own right, if we are to become independent of scarce oil supplies.

Traditionally there are two ways to get people to change behaviour at a population level. The first is by legislation, as exemplified by the Clean Air Act following the pea-soup smogs of the 1950s. In the same way the EU took action against industrial pollution of the atmosphere in the 60s and 70s, when acid rain destroyed forests and buildings in Europe, as well as wildlife in major rivers.

Secondly by education/information. The people of Northern Ireland need to have their awareness heightened if they are to fully understand how climate change will affect their lives.

Advertising campaigns are one way to do this. The curriculum in schools is another. The leadership and example needs to come from the top, and it needs to be high-profile, and sound (not publicity gimmicks)

The effects of climate change are only beginning, and already we have seen the impact of short sharp bursts of heavy summer rain as on 16<sup>th</sup> Aug 2008.

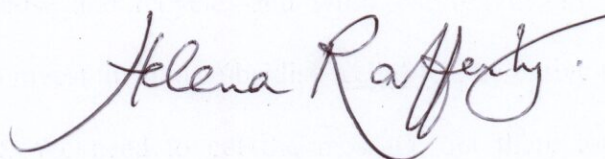
The consequences for flooding alleviation and planning decisions about building on flood plains need seriously addressed and enforced. The flood-risk maps are out-dated and need to be updated and made accurate and current. The so-called development of many towns has outstripped the ability of the

infrastructure to cope with sudden additional load, leading to out-of-sewer flooding, etc.,

Lastly, but by no means least, we have a moral responsibility to do everything we can to minimise the impact of climate change on other animal species, and on other human beings. The melting of the Arctic ice is a good example. It threatens the extinction of the polar bear, and it threatens the life of millions of the worlds poorest people living in low-lying oceanside countries like Malaysia, Bangladesh, India Sri Lanka etc,. We have a duty to try to protect them from our indulgent lifestyle. So free transport for over60s is an excellent idea since it reduces their carbon footprint, and utilises public transport more efficiently. Same for schoolchildren, since it reduces the school traffic. Shared transport is ideal, and public transport is the best example. Road tolls for single-occupant cars?? Free public transport for public servants to and from work? In a dampened economic climate, Northern Ireland should be positioned to take advantage of “green technologies” so that the local workforce can benefit from new employment opportunities.

We need to reduce, reuse and recycle, and with renewed incentives for these activities. We need to invest in and subsidise **reliable** alternative technologies and their development. We need to get the message out there loud and clear. We need access to information, not its prohibition! We cannot ignore the environment any longer, nor subject it to the short-termism of a political perspective, the so-called “pragmatic approach”. The electoral cycle is short but the oceanic cycle is long,. What lies ahead is flood, drought, hurricane, and extinction of species. Time for action.

Helena Rafferty.

A handwritten signature in dark ink, reading "Helena Rafferty". The signature is written in a cursive style with a large, sweeping initial 'H' and a long, trailing flourish at the end.