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Slouching towards disaster

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When the world's environmental experts met to discuss climate change in Exeter last week, warnings about the plight of the planet were even more dire than expected. As the mercury moves up the thermometer, there seems - to this writer at least - one inescapable conclusion SCARE stories are meat and drink to environmentalists; the modern environmental movement was started by one, when Rachel Carson's dramatic account of what agricultural pesticides were doing to American songbirds was revealed in her groundbreaking 1962 book, *Silent Spring*.

Since then the damage humankind is wreaking on the planet has been exposed time and time again in a series of reports, ranging from the destruction of the rainforests to the overfishing of the seas. Many are of these frightening warnings become accepted both by the public and the scientific establishment because they turn out to be self-evidently true. Go to large areas of the Amazon and you will find the forest has simply gone; look at the last 30 years' worth of statistics for catches of cod in the North Sea and you will find the numbers have tumbled despite the increasingly strenuous efforts of fishermen to bring back more fish.

Such alarms have a political as well as a scientific thrust. They have constituted the

lifeblood of the Green movement. They are what has brought widespread support for groups such as Friends of the Earth and Greenpeace, and put the environment high on the public and political agendas, and, at last, the Churches' agendas.

Such interest is to be expected. If you are a young mother and you hear that a brand of apples may contain pesticide residues, do you want your young children eating them?

Would you not support campaigners for clean apples? Sport their badges? Display their car stickers? Fill in their direct-debit mandates?

Yet although the term "scare story" can perfectly well be applied to something

The rivers of the Rockies, the alpine flowers, the forests of the Amazon. One after another they will go frightening but also verifiable, it is not a neutral one.

It has a definite pejorative ring, strongly implying that the scare may well be a good story, but that its basis is exaggerated or even untrue. The charge has in recent years been laid at green campaigners (most aggressively by the Danish statistics professor Bjorn Lomborg) that they do indeed exaggerate, believing they need above all to keep up the momentum of public concern 'lest their support should ebb away. More seriously, critics such as Lomborg charge that even research scientists have a vested interest in bad news, because this is the most reliable way of securing funding.

I have reported on the environment for national newspapers (first *The Times* and then *The Independent*), since 1989, and my experience has been that, unfortunately, exaggerations have indeed sometimes occurred. There have been some environmental scares over the past 20 years which have caused a sensation and filled the headlines, but not been completely borne out by the evidence.

Let me offer three examples from purely personal observation. In 1984, British scientists discovered that over Antarctica a gigantic hole had developed in the layer of naturally occurring ozone gas in the stratosphere, because of the destructive action of a group of industrial chemicals, chlorofluorocarbons (CFCs), widely used in refrigeration, air conditioning and aerosols.

The ozone layer protects us from the most harmful of the sun's rays, ultraviolet B radiation (UVB), and it was widely asserted that because of the ozone hole, many living organisms, from the plankton of the Southern Ocean to the shepherds of Patagonia, now faced potentially catastrophic injury. The ozone layer protects us from the most harmful of the sun's rays, ultraviolet B radiation (UVB), and it was widely asserted that because of the ozone hole, many living organisms, from the plankton of the Southern Ocean to the shepherds of Patagonia, now faced potentially catastrophic injury.

The ozone hole is still there (although mending because of the successful phase-out of CFCs), and such a disruption of the earth's atmospheric chemistry must of course be of very great concern, but I personally know of no well-attested example of any living organisms being damaged by excess UVB from ozone depletion, anywhere.

Another example: dioxins, the Green movement's "bogey" chemical, a range of substances produced by high-temperature burning, and so used as a key plank in campaigns against rubbish incinerators.

Dioxin is a word whose very mention is intended by environmentalists to strike terror into honest citizens' hearts, but apart from the special case of the Seveso chemical factory explosion in Italy in 1976, when people living near the blast suffered skin complaints after close exposure to gigantic amounts of the chemical, I know of no incidence anywhere of dioxins at naturally occurring levels actually causing any harm, to anything.

A third example: Brent Spar, the large (15,000 tonnes) obsolete North Sea oil storage buoy was the subject of a spectacularly successful pan-European campaign by Greenpeace in 1995, to prevent its being dumped in the Atlantic by the oil company Shell. Greenpeace convinced the public that to dump Brent Spar in the ocean would be an unforgivable and immensely damaging pollution, an environmental crime of the first magnitude.

I take the view that disused offshore oil installations should not be dumped at sea. But as to Brent Spar itself being a major pollution danger, I cannot help but remember that from 1941 to 1943, the U-boats Of Grand Admiral Doenitz sent to the bottom of the Atlantic an amount of allied shipping (15m. tonnes) which was the equivalent of a thousand Brent Spars - and no one has ever suggested that that brought about a significant marine pollution problem.

I offer these examples of my reaction to environmental scare stories over the years because I suppose I am about to put forward one of my own.

Last week the British Government held an international conference, at the headquarters of the UK Met Office in Exeter, on climate change. It was called personally by Tony Blair, who is making the problem of global warming one of the central policies of his simultaneous leadership in 2005 of both the G8 group of rich nations and of the European Union. Its purpose was to update policy makers everywhere on climate change science, which is rapidly moving. General appraisals of it are carried out by the UN's-Intergovernmental Panel on Climate Change (IPCC), which has produced three assessment reports, in 1990, 1995 and 2001. The third assessment report (known as TAR) is chapter and verse on what the international community of climate scientists think is happening now, and likely to happen in the future, with global warming.

The most important conclusion of TAR was that the earth's average surface temperature was likely to warm by between 1.4 and 5.8 degrees centigrade between now and 2100, depending on how human

societies controlled their emissions of carbon dioxide (CO₂), the waste gas from industry and transport which is retaining more and more of the sun's heat in the atmosphere.

These are enormous rises (even at the lower end) and they are expected to have similarly enormous impacts, ranging from the widespread failure of agriculture and many more extreme weather events from droughts to flooding, to sea-level rise around the world. The fourth IPCC assessment is not due until 2007, and so last week's conference was in the nature of a mid-term report about where the science has got to. I covered it for The Independent with Charles Clover, environment editor of The Daily Telegraph, and Paul Brown, environment correspondent of The Guardian. We have known each other for 15 years and covered many such conferences and we thought we knew what to expect: a minor tweak in the detail here, and twitch in the policies there.

We were taken aback. The opening day brought disclosure of two major new threats to the world. The first concerned Antarctica, with a warning from the British Antarctic Survey (the body whose scientists discovered the ozone hole) that, perhaps because of rising temperatures, the vast ice sheet covering the western side of the continent may be starting to break up. Were it to collapse into the sea, the West Antarctic Ice Sheet would raise global sea levels by more than 16 feet. Goodbye London; goodbye Bangladesh.

Only four years ago the IPCC TAR said it was safe for probably 1,000 years, certainly until the end of this century; last week Professor Chris Rapley, the BAS director, said that judgement would now have to be revised.

The second alert concerned an issue many of the scientists present were only dimly aware of: the acidification of the oceans. The billions of tonnes of carbon dioxide human society is producing are not only causing the climate to change. When they dissolve in sea water they are combining with it, in a simple chemical reaction, to produce carbonic acid. But the world's seas are alkaline, and have been for many millions of years, and it is in this environment that thousands of species of small marine, organisms at the bottom of the food web, from plankton to shellfish, have evolved.

They will not be able to live in an acid sea. The point about these two disclosures is that they were not based on predictions of future events by

supercomputer models of the global climate, which is the origin of most scare stories - to use the term neutrally - about global warming. They were based on actual observation, in the real world, of things that are happening now.

But there were plenty of predictions as well at the conference, and they were grimmer than ever. For example, there was the most pessimistic assessment yet of global warming causing collapse of the Gulf Stream which perversely would bring a new ice age to Europe. A group of American scientists calculated that in the absence of major action to control emissions, the chance of this happening was now greater than 50 per cent.

And there was an assessment that the ice-sheet covering Greenland may start to melt - which would cause global sea levels to rise by 20 feet - with a temperature rise of only 1.5 degrees C. above pre-industrial levels. We are already 0.7 above pre-industrial levels; we are well on the way.

Perhaps the most vivid of a plethora of pessimistic papers was a review of studies on which ecosystems and species would be hit by which temperature rises. It was a long, dire litany of disappearances as the mercury moves up the world's thermometer:

Queensland's highland tropical forests very soon; at a one degree rise South Africa's unique fynbos flora and the rest of the Arctic sea ice; between one and two degrees the trout in the rivers of the Rockies; between two and three degrees the alpine flowers of Europe, Australia and New Zealand, the broad-leaved forests of China, and the rain-forests of the Amazon. One after another they will go, the special places of the earth, the glories of creation.

The overwhelming impression given by the conference, a meeting of entirely sober scientists with nary a campaigning environmentalist in sight, was that these things will happen. Firstly, there was a strong sense that climate change was proceeding much more quickly than had been anticipated. The report of the conference steering committee said: "Compared with the TAR" - only four years ago, remember - "there is greater clarity and reduced uncertainty about the impacts of climate change across a wide range of systems, sectors and societies. In many cases the risks are more serious than previously thought." Secondly, big temperature rises are already "built into the system", as Margaret Beckett, the UK. Environment Secretary, acknowledged, because there is a time lag between the CO₂ going into the atmosphere

and the subsequent rise in temperatures. Even if all emissions were stopped dead tomorrow all over the world, enough CO₂ is up there to cause a further rise, according to a paper circulating at the conference (Hansen et al, 2005), of 0.6 degrees C.

But - and this is the third point - the emissions are by no means going to stop tomorrow. Under the Kyoto protocol, abandoned by the United States, the world's biggest CO₂ emitter, the industrialised countries are struggling to cut their emissions back to merely 5 per cent below 1990 levels; controlling climate change would require a cut of perhaps 60 per cent.

Yet, as the conference chairman, Dennis Tirpak, head of the climate change programme of the OECD, reminded delegates, the 2004 World Energy Outlook of the International Energy Agency calculates that the next 25 years global emissions of CO₂ are likely to increase by 62 per cent, mainly from the developing world, as the Chinese and the Indians rush to build coal-fired power stations to service their exploding economies. The necessary cuts are a fantasy.

When it was all over Paul Brown and I travelled back from Exeter to London by train, working out what it meant, working towards the inescapable conclusion. I have written at such length to try to put that conclusion into some sort of context. It was the inevitability of what was going to happen, I think, that for the first time struck us with real force: that whatever flapping, floundering efforts humankind eventually makes to try to stop it all, the great ice sheets will melt, the seas will turn acid, and the land will burn. By the time we reached London we knew what the conclusion was. I said:

"The earth is finished." Paul said: "It is, yes." We both shook our heads and gave that half-laugh that is sparked by incredulity. So many environmental scare stories, over the years; I never dreamed of such a one as this.

And what will our children make of our generation, who let this planet, so lovingly created, go to waste?

Michael McCarthy is environment editor of The Independent.