

# Too much hot air, too little action

*Figures from a measuring station in northern Norway show that CO2 levels are increasing by two to three parts per million every year*

BY JOHN VIDAL  
THE GUARDIAN, NY ALESUND, SVALBARD, NORWAY

The concentration of carbon dioxide in the atmosphere has reached a record high, according to the latest figures released by an internationally regarded measuring station in the Arctic.

The measurements suggest that the main greenhouse gas is continuing to increase in the atmosphere at an alarming rate.

The level of the gas at the Zeppelin research station in Svalbard, about midway between mainland Norway and the north pole, last week peaked at more than 397 parts per million (ppm), an increase of more than 2.5ppm on 2008. It has since begun to reduce and yesterday stood at 393.7ppm. Before the industrial revolution, the CO2 level was about 280ppm.

CO2 levels recorded in Svalbard tend to be higher than the global average, but scientists said the CO2 level they had measured was unprecedented even for that location.

"These are the highest figures collected in 50 million years," said Johan Strom, professor of atmospheric physics at the government-funded Norwegian Polar Institute, which collected the data.

"It is not the level of CO2 that is the problem, because the Earth will adapt. What is very worrying is the speed of change. Levels [here] are now increasing 2ppm to 3ppm a year.

"The rate of increase is much faster than only 10 to 20 years ago. You can almost see the changes taking place. Never before have CO2 levels increased so fast," he said. The global annual mean growth rate for 2007 was 2.14ppm — the fourth year in the last six to see an annual rise greater than 2ppm. From 1970 to 2000, the concentration rose by about 1.5ppm each year, but since 2000 it has risen to an average 2.1ppm.

## PATTERN OF INCREASE

"There can be week-to-week or day-to-day variability," said Thomas Conway, a research chemist at the US National Oceanic and Atmospheric Administration's (NOAA) Earth Systems research lab in Boulder, Colorado. But he said a 2.5ppm annual increase was "on the high end."

"This is part of an overall pattern of CO2 increasing in the atmosphere. Unless the burning of fossil fuels decreases, then the CO2 will not decrease. And if the rate of fossil fuel burning increases, so will the rate of CO2 increases," he added.

Last week, the NOAA released preliminary figures for its annual greenhouse gas index, which incorporates data from 60 sites around the world — including Zeppelin. Total global CO2 concentration topped 386ppm. In 2008, the global average increased by 2.1ppm, slightly less than the 2.2ppm increase in 2007. NOAA's primary CO2 measurement station is Mauna Loa Observatory in Hawaii.

CO2 levels are typically higher in the Arctic than the global average because there is more landmass and human activity in the northern hemisphere. As a result, human emissions from factories and transport tend to lead to higher CO2 levels here.

The figures will concern policymakers in advance of global talks

on a successor to the Kyoto protocol in December. Climate scientists advise that the world must prevent CO2 levels from rising higher than about 450ppm CO2 equivalent (a measure of global warming potential that incorporates other gases such as methane and is higher than the measured CO2 level) to avoid a 2°C increase on the preindustrial global average temperature.

The Zeppelin research station is on a mountain top approximately 1,100km from the north pole. The closest town, Ny Alesund, is the northernmost human settlement in the world, mainly inhabited by research scientists.

## MELTING ICE CAPS

Although the research station is far from major sources of human pollution, atmospheric circulation brings air from Europe and North America into the Arctic region.

"There is less human influence here and most of the pollution comes straight here at this time of the year. From now on levels will reduce until the end of August when they will pick back up," said Strom.

"It is clearly the effect of human activity. Even if we stopped emitting now, we would have to live with this ... we will have to live with it for thousands of years, but that does not mean we should do nothing."

The figures come as the former US vice president Al Gore hosts a conference in Tromso, northern Norway, on melting Arctic ice. Last week he told the US senate committee on energy and commerce that the Arctic was melting at an "unprecedented" rate.

"The most recent 11 summers have all experienced melting greater than the average 35-year time series," he said.

He is expected to warn ministers in polar regions that the Arctic ice cap may totally disappear in as little as five years if nothing is done to curb greenhouse emissions.

Earlier this month, US scientists reported that annually forming sea ice in the Arctic region covered roughly the same area as in previous years, but had thinned significantly.



Top: A South Korean environment activist attends an Earth Day celebration in Seoul last week. Above: Greenpeace activists light a mockup of a bomb labelled "CO2" during a campaign in front of the Chancellery in Berlin last month. Below: Smokestacks and cooling towers of the Neurath coal power station near Grevenbroich, Germany. Grevenbroich, the self-proclaimed German "capital of energy," boasts two-dozen lignite, or brown coal, boilers at three plants within a few kilometers of the town limits. The plants are responsible for the biggest concentration of greenhouse gases in Europe.

PHOTOS: AGENCIES

## Climate gamble

The concentration of carbon dioxide in the atmosphere is the single number that most potently represents the impact of the burning of fossil fuels on the Earth's climate. Before the industrial revolution, the level was 280ppm, meaning that for every million molecules in the atmosphere, 280 were CO2. The current global average is 386ppm. The world's foremost climatologist, James Hansen, argues that we have already exceeded the "safe" level of CO2, and must aim to reduce it to below 350ppm in future to avoid the risk of unavoidable climate change. Others have suggested 450ppm as the limit at which humanity's gamble with climate becomes too risky. If nothing is done to cut emissions, and the current fast growth continues, CO2 will soar towards 700ppm by the end of the century.

SOURCE: THE GUARDIAN

[ NATURE ]

## Raccoons found not guilty of their Nazi association

*Textbooks assert that Hermann Goering personally ordered the release of raccoons in Germany, but new evidence shows that the Nazi connection is untrue*

BY CHRIS MELZER  
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Practically all the half million raccoons which infest the forests and parks of Central Europe are believed to descend from just four animals released in the woods near the German city of Kassel in the Nazi period.

Raccoons have never had a good press in Europe. Not only are they North American interlopers, there is also a persistent story that they were introduced to provide hunting pleasure for Marshal Hermann Goering, the head of Adolf Hitler's Luftwaffe.

But a recent examination of the files, 75 years later, shows that the Nazi part of the story, which appears in many textbooks, is untrue. Goering did not even know

about the raccoons' release, and the authorities in Berlin tried to stop their acclimatization.

But it was too late. Rangers at Lake Eder in Germany had already freed two breeding pairs on April 12, 1934. Not without difficulty either: the cautious animals would not initially come out from their box, despite being offered some eggs and dead squirrels.

But the hills around Kassel were to provide the freed raccoons with the perfect environment: lots of woods, rivers and food. The mammals grow up to 70cm in length and usually feed at night.

It is estimated a couple of dozen breeding pairs were established by 1945. Another 25

years on, there were 20,000. And the cute critters with the burglar-style black markings round the eyes kept on multiplying.

Kassel remains the capital city of raccoon expansionism in Europe.

"Round here, just about everyone's garden has a raccoon living in it in summer-time," said biologist Frank-Uwe Michler in the city. Genetic studies show that raccoons in Hamburg and Bavaria also descend from the same two Lake Eder pairs.

## SKINS AND MEAT

Horst Marohn, of the state of Hesse forestry authority, says, "All the books claim that Goering personally ordered this rather

foolhardy disturbance of our fauna." But Marohn and senior ranger Eberhard Leicht checked the official files and found a different story.

As supervisor of hunting in the Voehl and Lake Eder areas, Leicht is the modern successor of the rangers who not only freed the raccoons but documented the whole matter in correspondence.

"It wasn't just someone opening a cage to see what happened. It all had to be officially reviewed, even back then," Leicht said. The proposal had apparently come from fur merchants, who suggested the animals would provide both skins and meat.

However Kassel had a particularly bureaucratic

government, since it was part of the state of Prussia, and everything had to be approved in the capital, Berlin, by the office of Prussia's master of the hunt.

## BUREAUCRATIC INERTIA

Two of the Third Reich's most senior animal-biology officials promptly objected.

One was Carl Hagenbeck, a zoologist whose family conducted one of Germany's most famous zoos in Hamburg. Hagenbeck said he knew of a raccoon that had escaped in the city and constantly gobbled up city-dwelling pets including ducks and guinea pigs.

The other was Lutz Heck who ran the Berlin Zoo and who said releasing raccoons was

not a good idea. The office of the Prussian master of the hunt vacillated for months before sending a veto to Kassel.

"But by that time, it was too late," said Leicht. "A predecessor of mine, Baron Wilhelm Sittich von Berlepsch, had let the raccoons out." The females were gestating and the foresters apparently thought it was best for the young to be born in the wild.

"It is true that Hermann Goering was in charge of the hunt office, but I am pretty sure he knew nothing about it," said Leicht.

The name of the Nazi, who was a keen hunter, does not appear on any of the documents about the case.

Of course the facts have never

stood in the way of a good story. Decades later, reports appeared in the British press that wryly described the animals as the "Nazi raccoons" and many Germans today see the release as another Nazi misdeed.

Heck's and Hagenbeck's concerns turned out to be right. Raccoons have become a pest in quite a few locations in Europe.

Leicht suggests raccoons are not all that bad though.

"Of course they can't resist an egg if they find it. But they are not particularly talented predators, they can't climb trees very well and often they are really quite clumsy. They are more gatherers than hunters. And it's not true they were the Nazis' pet," he said.