

# EXTRACTIONS



a newsletter from O'CONNOR ASSOCIATES

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## GLOBAL WARMING— A REALITY?

No, it wasn't your imagination. The summer of 1998 was the warmest since Canada-wide recording began in 1948. In addition, the summer in the northern B.C. mountains, in the Yukon, and in the northwestern and northeastern forest regions ranked among the ten driest summers on record.

Is this conclusive evidence of global warming? Not by itself, but when combined with high temperature records from other places and atmospheric studies, the evidence is mounting. Here are some examples:

- The average global surface temperature from January to October 1998 was the warmest ever recorded. Each month from May 1997 through October 1998 has tied or broken the previous record average temperature for that month. Global records go back to 1880.
- Global surface temperatures have increased 0.3 to 0.6° C since the 1890s and 0.2 to 0.3° C over the past 40 years. Studies of surface temperatures, as indicated by tree rings, corals, and ice cores, show the 1990s to be the hottest decade in the last 600 years.
- Sea levels around the world have risen 10 to 25 centimetres in the last century, likely related to the rise in global temperature.
- A study published in *Nature* found that the daily amounts of both pollution and rainfall off the east coast of North America followed a seven-day cycle, indicating a human cause.
- The latest climate change models predict a 3° C average global temperature increase over the next 100 years if greenhouse gas emissions continue at the current rate. The models also indicate that greenhouse gases have already contributed substantially to global warming. These models can simulate climate change over the last 150 years reasonably well, increasing confidence in their predictive ability.

One of the first animals to become extinct due to recent global warming may be the Perry caribou in the far north. Researchers attribute the caribou's rapid population decline to starvation. With warmer temperatures come heavy snows that make it impossible for the animals to dig down to winter fodder.

To meet its commitments under the 1997 Kyoto Protocol, the Canadian government announced in October that it has allocated \$150 million over the next three years to the Climate Change Action Fund. This fund will support cost-effective technologies for reducing greenhouse gas emissions, research to improve knowledge of the climate system, and public outreach to engage Canadians in becoming part of the solution.

Some Internet sites with information on global warming are: <http://www.ncdc.noaa.gov/>, <http://www.olywa.net/atmosphere/>, <http://www.ec.gc.ca/>, <http://www.climatechange.ca/>, <http://www.worldwatch.org/>, and <http://www.epa.gov/>.

## GOOD NEWS

There's good news in the 1996 annual report from the National Pollutant Release Inventory (NPRI) program:

- Onsite releases of pollutants into Canada's air, land, and water totalled 142 613 tonnes, a decrease of 14.9% from 1995.
- Onsite releases of NPRI-listed toxic and carcinogenic pollutants (as defined by the *Canadian Environmental Protection Act*) totalled 13 252 tonnes, a drop of 6.2%.
- Onsite releases from the paper and allied industries sector were down 32.3%.

Similar downward trends were reported in the U.S. Toxic Release Inventory.

The Worldwatch Institute's annual publication, *Vital Signs 1998*, also reports some positive environmental signs including:

- British Petroleum and Royal Dutch Shell have respectively committed \$1 billion and \$500 million to develop wind, solar, and other renewable energy sources.
- During the 1990s, while sales of coal and oil have grown by 1% per year, sales of wind power have grown 26%. In 1997, sales of solar cells grew 43%.
- While bicycle production is declining, bicycle use is on the rise.

[from <http://www.ec.gc.ca/pdb/npri/> and <http://www.worldwatch.org/>]

## RESPONSES TO INCREASED CAR USE

You'd think that improvements in the fuel efficiency of cars would have caused overall fuel consumption to drop in Canada. But our increased car travel has more than offset the fuel savings we've gained from more efficient car engines. Between 1990 and 1995, car travel increased by 15% causing fossil fuel use to increase by 6%. In the same period, urban transit ridership decreased. Public transit now makes up less than 5% of motorized travel in our cities.

Elsewhere, too, cars are contributing to poor urban air quality, acid rain, and other negative environmental effects. As a result, six European city centres are now closed to gasoline-powered vehicles. Italy is mandating ride-sharing, time-share ownership of electric cars, and replacement of government vehicles with low emission cars.

Meanwhile, some major cities are turning to bicycles for cleaner air, less congestion, and safer streets. Cycling can be especially effective in reducing the number of short trips (3 kilometres or less) that now make up 50% of the trips in Britain and 40% of the trips in the U.S. Cities around the world have found some innovative ways to encourage bicycle use:

- Bus lanes in Muenster, Germany, can be used by cyclists but not by cars.
- Bikes are linked with railways in Japan (bike-and-ride).
- Credit programs in Lima, Peru, help low-income families buy bikes.
- Copenhagen makes bikes available for public use.

In some Chinese cities, biking accounts for more than half of all trips, while in several major cities in the Netherlands, Denmark, and Germany, bike travel makes up 20% to 30% of all trips. And in Canada? Here, bikes are used for less than 1% of all trips.

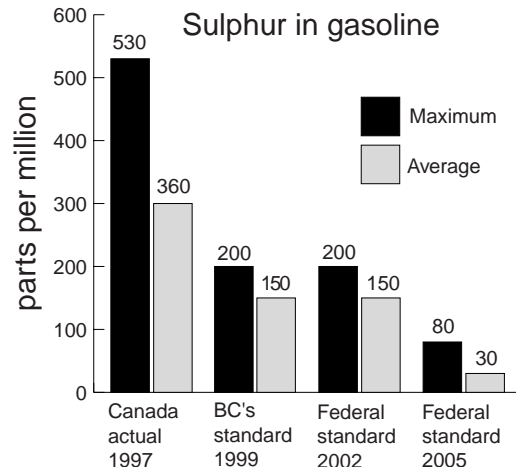
[from <http://www.ec.gc.ca/> and <http://www.worldwatch.org/>]

## OUR READERS TELL US

Responding to a recent questionnaire, our readers tell us that they want **EXTRACTIONS** to be practical and precise, rather than newsy and fun. Also, they want more local and Canadian content. The subjects most wanted were: tips from experts, trends in remediation, and risk assessment and management. The subjects least wanted were: people in environmental engineering, water resources, and detailed case studies. More than 5% of our readers returned their questionnaires. If you want your opinions added to this survey, please write to the **Extractions** Editor.

## SULPHUR IN GASOLINE

To help reduce air pollution and related harmful health effects, new federal regulations require a 90% reduction in the amount of sulphur in gasoline by 2005. This will bring Canadian standards in line with those of California, Japan, and Europe. The graph below shows the required reduction in both the maximum and the average allowable sulphur concentrations.



The new standard may cost refiners \$1.8 billion in new equipment and \$119 million annually, leading to a one cent per litre rise at the pump. However, these costs will be offset by substantial savings in health care costs. A federal/provincial working group estimated that over 20 years, the 30 ppm standard would prevent 2100 premature deaths, 93 000 incidents of bronchitis in children, and 5 million other health-related incidents such as asthma attacks.

New U.S. sulphur regulations have not yet been established and probably will not take effect until after the Canadian regulations. This has led to some concern by industry that U.S. refineries will gain a competitive advantage over Canadian refineries by waiting for more cost-effective sulphur reduction technologies to be developed.

Adding to the environmental voices, General Motors of Canada sees decreasing sulphur in gasoline as a major petroleum marketing need. Bryan Smith, a GM environmental policy manager, says, "Sulphur appears to be the ultimate poison, and the auto industry, world wide, remains united in its conviction that a sulphur limit far lower than current levels is needed." GM also says that high sulphur levels impede the reliability of the new on-board computers that monitor auto emissions.

[from *Oilweek*, Vol. 49, No. 47, Nov. 23, 1998, p. 1  
and *Enviroline*, Vol. 9, No. 20, p. 3]

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