Some lakes recovering from acid rain

by Samer Muscati

OTTAWA (CUP) — The most beautiful lakes are glassy, clear and calm. And dead.

But some lakes across Canada are slowly recovering from the barrage of chemicals that has made them so acidic that many species of fish have stopped swimming in their waters.

About 33 per cent of acidic lakes in Canada showed evidence of recovery from sulphate deposits, while about 16 per cent continued to acidify and get worse, according to a progress report on the 1991 Canada-U.S. air quality agreement released in November 1994.

Even if both countries meet their goals for a reduction in acid precipitation-causing emissions — that is, nitrogen oxides and sulphur dioxides — by the year 2000, environment groups and the Canadian government say the goals are so low that acid precipitation is still a problem.

Under the agreement, nitrogen oxides are to be reduced by only 10 per cent by the year 2000. Sulphur dioxide emissions are to be reduced by 40 per cent in the U.S., and 50 per cent in Canada by the year 2000.

Both countries are on target for reducing nitrogen oxide emissions. Canada has already fulfilled its sulphur dioxide reduction commitment, but the U.S. still belches out more than two million tons of sulphur dioxides per year more than its goal.

The U.S. produces more than 20 million tons of sulphur dioxides to Eastern Canada's 2.3 million. So no matter how much Canada cuts back, if the U.S. doesn't meet its goals, reducing acid rain damage will be difficult.

Ellen Schwartzel, air program manager for the environmental group Pollution Probe, which researches the effects of toxic chemicals, wants new regulations to control nitrogen oxides.

Barbara Lukaszewicz, former manager of the acid rain program for Environment Canada, says, "[Acid precipitation] has fallen from public view as a concern. It is on the backburner to other issues.

The acid rain problem is not solved and it is an issue that will go beyond the year 2000."

Lukaszewicz adds: "The challenge isn't over yet. The causes for acid rain have gone down, but 10 per cent of Eastern Canada will still be acidified by the year 2000."

The problem with the agreement is that it is based in the seven Eastern Canadian provinces, says Kevin Jardine, atmosphere and energy campaign coordinator for Greenpeace.

He is upset there is "not the same level of scrutiny in Western Canada."

Jardine says that in their attempt to produce vast quantities of natural gas, western provinces are not taking the necessary precautions and acidic emissions are not monitored properly.

Human use of natural gas creates nitrogen oxide, which produces acid precipitation.

But Lukaszewicz says acid precipitation "is not a Western Canadian problem" because western region lakes are less prone to acidification due to such things as limestone deposits, which neutralize acids. There is also less of an industrial base in the west to produce acidic emissions.

But even in Eastern Canada, some environmentalists have said the goals are set too low and governments are complacent.

"Look at what [former prime minister] Pierre Trudeau was able to do. Trudeau was willing to stand up to the oil and gas industry," says Jardine. "We haven't seen that from [Prime Minister] Jean Chrétien."

Other findings from the report show that growth rates have fallen for sugar maples in Ontario and Quebec in the last 30 years, and acid fog has harmed white birch in southeastern New Brunswick.

The national advisory issues coordinating committee, a new federal-provincial task force composed of government, industry and environment groups, will develop strategies to deal with acid precipitation over the next three years.

What is acid rain, and who cares?

Acid precipitation, which comes in the form of rain, fog, snow and dry particles, starts as a colourless gas emitted from smokestacks and exhaust pipes.

The main gases are sulphur dioxide and some nitrogen oxides.

Nitrogen oxides come from motor vehicles and power plants. There are more than 12 million motor vehicles in Canada and more than 140 million in the U.S.

Sulphur dioxide is emitted by burning coal and oil to generate electricity, and by smelting ores to get nickel and other valuable metals.

Most of these emissions in Eastern Canada come from 20 coal- and oil-burning power plants in Ontario and the Atlantic provinces, as well as six big smelters in Ontario, Quebec and Manitoba.

In the U.S., there are 400 coal-burning power plants and industrial boilers.

Both sulphur dioxide and nitrogen oxides combine with oxygen, hydrogen, or water molecules to form dangerous chemicals like sulphuric acid, nitric acid and ammonium. These chemicals are dissolved in water or stay as dry particles in the air.

This precipitation can travel hundreds of kilometres before falling back to the earth, meaning it can travel from the U.S. to Canada and vice versa.

Half of the sulphuric acid precipitation falling on Canada has been blowing north from the U.S.

About 150,000 of the 700,000 lakes in Eastern Canada are estimated to have become more acidic due to acid precipitation. Although scientists have not been able to link slightly higher acidity to damage to the ecosystem, they fear there are unseen harms in these lakes.

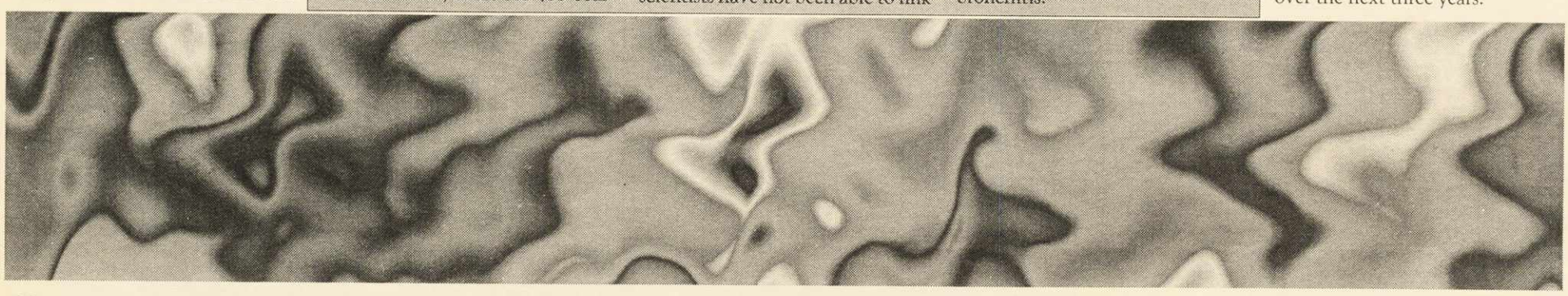
But 14,000 lakes are already highly acidified, to the point where they have lost species or their ecosystems have been severely disrupted.

Acid precipitation also dissolves harmful metals, which find their way into food chains and water supplies.

Vegetation growth is altered. Acids combine with nutrients like potassium to form chemicals which can dissolve in water and which wash away from the soil.

Direct contact with the precipitation is also suspected to affect growth.

Suspected health impacts on humans include decreased lung function and higher incidence of acute bronchitis.



Short-term farming draining, harmful

by Barbara Müller

Farming is the biggest industry in the U.S. It grows 13% of the world's wheat, 25% of the world's corn, and 62% of the world's soybeans. Their success is envied all over the world.

But should it really be envied?

In the last 100 years, half of the topsoil has been used up. The water is over-consumed and polluted. The problem is we always ask "how much can be produced this year?"

What no one cares about is for how long can the Earth give us this much before it is used up and what is the real cost?

There is constant procrastination of long-term planning since short-term profit is on everyone's mind. Who takes priority — the farmers (short-term), or the public (long-term)?

Farmers are constantly encouraged to increase their production. To do so, they must buy expensive machinery and pay more for the chemicals they use to get bigger yields. Then what happens is that field machinery costs more than income from the crops.

The farmers worry most about the increase in interest rates, and making money to pay off debts. To get enough money not to go bankrupt they use up the land to its limits. Soil erosion and water depletion are the results of such practices, but this exploitation is not thought of.

We squander soil and water, stretch the soil use with our technology (fertilizer and pesticides). The erosion, which is due to mismanagement and over exploitation, wastes many acres of land. However, in the short-term the erosion losses are viewed as little, so the farmers do not worry for the long-term consequences.

Once the land is gone due to erosion, it cannot be used any more, for it takes 500 years for one inch of topsoil to become rich and able to grow food. Small farmers cannot compete with the large farms, so they are forced out of business.

To make some money with their land which they do not use, they lease their land. The farmer who leases the land thus wants the most he/she can get out of it as quickly as possible, no matter what the long-term consequences because he/she only has the land short-term. Thus, due to short-term decisions for best profit, much erosion occurs. The care is for money, short-term economic interest.

They need immediate resolutions for immediate problems.

Due to labour efficiency, there has been a 500% labour decrease, because of an increase in productivity. The concentration on machines makes good profit. For example, the tomato industry: Economically, the consumers pay more since the machine increases costs, and the quantity is unknown. The outcomes are great — now. But what is the future?

The land and farmers are hooked on chemicals such as herbicides and insecticides.It is thought to be the way of the future, due to the high income. The yields are still growing, but there is no more need. There is no more market. No one to export to.

The farmers, however, think this way: the farmer who gets the biggest yield may have the biggest surplus, but will have the biggest income. Thus even though the resources are exhausted for markets which aren't there, farmers see it as being better to continue this way.

The number of chemicals which the farmers are now dependent upon are still rising. Again there is low priority to long-term studies. DBCP and DDT have been found in drinking water. The chemicals are washed through the soil and into the water system.

According to some statistics, 62% of chemicals used have not been sufficiently tested, where cancer and birth defects are results, and 90% have not been tested in regard to genetic mutation. Specific chemicals have been tested but what about when the chemicals are mixed? Those are not tested.

POINTLESS PONDERABLES

No answer from last week's question, because there was no question last week. Our apologies to the droves of frothy-mouthed fans who almost lynched the entire *Gazette* crew at the news of no Pointless Ponderables. Sorry.

This week's question:

You and your best buddy, Zeke, are hanging around in the Grad House. Zeke fancies himself quite the hunter.

"Yep," says Zeke as he spits another wad of chewing tobacco and blood onto the floor (he's got gum cancer by the way), "I got me this h'yar lucky rabbit's foot myself. Bagged 'im last June. Did all the preservin' work on th' foot, and stuck my keys to it. Fancy, huh?"

You look at the rabbit's foot Zeke dangles in front of you. It *is* a nice job. The white foot looks to be in good shape, despite spending it's time either in Zeke's pocket, or his pickup. Then it hits you.

"I happen to know you didn't get that rabbit's foot, Zeke, you lying, two-faced bastard! And now you'll pay!" You stand up, pulling out a snub-nosed gatling gun from your pocket.

Three seconds later, Zeke is a liquid.

How did you know Zeke was lying?

Answers can be dropped off at the Gazette, room #312 in the SUB, or can be emailed to gazette@ac.dal.ca. The first person to submit the correct answer gets their name published in the next issue — so run, don't walk!