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POLICY IMPLICATIONS

The Economic Impact

*by Ross Howard**

When Rosemary McCarney started today she mentioned there would be doctors, lawyers, scientists and a politician. I should probably sit down. I am none of the above.

I feel I should warn you that my interest in the subject of acid rain and my remarks are not necessarily shared by everybody. I would like to begin by illustrating another point of view and I quote,

If you follow the national papers, you will find that somebody is orchestrating a pretty careful strategy, because every other day there is a new article about the acid rain problem written by reporters who know not a damn thing about pollution, the techniques of pollution, or the chemistry of pollution. They are writing such preposterous and absurd things that what it is going to do is create an intellectual climate, an attitudinal climate which will probably cause the EPA or Congress to lurch forward into an acid rain program that is based on nothing more substantial than were the automobile pollution standards of 1971.

That statement was made roughly one year ago by David Stockman, now Director of the White House Office of Management and Budget, who last week eliminated most of the staff members of the Council of Environmental Quality. Mr. Stockman was also instrumental in the recent budgetary evisceration of the Environmental Protection Agency. Stockman indeed wields both a sharp tongue and sharp knife.

I don't wish to approach the subject of the economic impact of acid rain on a contentious note, but in defense of both my profession and the much more important issues at stake, perhaps my contribution will lead you to conclude that persons such as Stockman are saying preposterous and absurd things designed or inadvertently intended to create an attitudinal climate that will unfortunately cause EPA or Congress to lurch backward to an acid rain program no more substantial than those which failed to prevent the thalidomide tragedies, the Love Canal, or Three Mile Island. By the way, today is the anniversary of Three Mile Island. I

* Environmental Editor, Toronto Star. Author, *Acid Rain: The North American Forecast* (Anonsi Press, Toronto, 1980).

wonder if Mr. Stockman reads Canadian books.

As previous speakers have indicated, today nowhere east of a line between Hudson Bay and Louisiana enjoys an annual average of "clean" rain. My home in Ontario averages rainfall with a pH of about 4.2, which is as bad as anywhere on the continent with extrapolated evidence that more than 4,000 lakes are dead or dying. East toward Nova Scotia, rivers such as the Mersey, Roseway and Sissiboo now flow virtually devoid of once prime salmon fisheries.

In the Adirondacks, more than 170 of the lakes are dead or dying. Approximately 83 percent of surveyed waters in North Carolina now reveal limited acid buffering capacities. There is a group of lakes near Jacksonville, Florida with seriously depressed pH levels. There are about a thousand lakes in decline in Minnesota, and problems in Como Creek Watershed in the Rocky Mountains of Colorado. Back home in Ontario, the crude measure is that about 11 ounces of sulfuric acid falls on every acre of southern Ontario every year. In the winter of 1979 the problem wasn't acid; it was vinegar.

It rains on more than just lakes. There exists very broad-based information on all kinds of environmental effects of acid rain. Commercial crops, obvious damage to frogs and salamanders, and murky evidence about the growing haze between New York and Richmond, Virginia must all be considered. There is physical damage to buildings and property. The EPA is using tombstones as excellent chronological signposts of the rate of property damage by acid rain, and the Porsche-makers now claim that their vehicles are resistant to acid rain in one of their ads.

I apologize for taking so long to get to the economic part of this talk. I agree that to date most of the discussion on acid rain has really only focused on physical evidence, and the discussions of economic issues are centered on simply the cost of stopping it. Recent studies indicate some of these costs have been exaggerated, but more importantly the cost figures are deceptive. They loom as large as they do, as if in a cave, casting a shadow of galloping inflation, corporate poverty, and price hikes because they stand alone. The other cost of acid rain, the economic damage, has been left unstudied, unconsidered and unstated.

Among those who would cast deceptive shadows I can do no better than to quote one such caveman, Mr. Stockman, and I quote from the same April, 1980 speech:

I keep reading those stories that there are 170 lakes dead in New York that will no longer carry any fish or aquatic life and it occurred to me to ask the question, 'how much are the fish worth in these 170 lakes?' Does it make sense to spend billions of dollars to control emissions in Ohio and elsewhere if you are talking about a very marginal volume of dollar value, either in recreational terms or commercial terms.

Mr. Stockman is adept here at casting the billions of dollars abatement figure and belittling the damage. Indeed, there has been far too lit-

the research done on the economic impact of acid rain. Consider that the dead lakes in the Adirondack State Park, which lies only one day's drive away from 55 million Americans, register 1.6 million fishing trips inside of the park per year, generates 16 million dollars in the local economy—have been linked to an economic loss exceeding \$1.5 million in 1979.

Commissioner La Bastille can offer much more detail on that subject, but last year she quite correctly noted "The fisherman don't spend money to dabble in dead lakes." Admittedly, the cost of calculating the direct damage by acid rain is far more intricate than just the technical solutions. Perhaps even worse, until very recently there had been no effort to consider at least the value of what is at stake in dollar terms, which would surely be a critical first step.

Consider the marginal volume of dollar value in the Province of Ontario, which is on the receiving end of acid rain sources in Ohio and elsewhere. Ontario's countryside attracts several million tourists per year for fishing, recreation and cottaging. Tourism is Ontario's second largest industry yielding \$5 billion in annual revenue, 470,000 jobs, 50 million person-days of holiday per year, \$900 million in the Muskoka region, plus \$200 million per year by local cottagers. That Muskoka region is also where the worst of the acid rain falls most steadily. The current scientifically established toll indicates 150 certifiably dead lakes, 4,000 assumed to be, and 44,000 susceptible within 19 years.

I admit it is not easy to quantify the cost or value of an acid impacted lake to a Canadian or American cottager with his \$50,000 investment in a summer chalet with his water ski boat and beer cooler. It is difficult to say whether the lack of fish and frogs and birds, including the bald eagle, matters to city dwellers who drive for hours each weekend to sit beside increasingly clear acidified waters. I note, however, that even our provincial premier retreats north to his island in Georgian Bay, where acid shocks in the tributaries are killing the fish. Unfortunately to date, the Ontario premier has preferred to sail above the troubled waters rather than dabble in them or the politics associated with the demise of the lakes. Ontario's stake in acid raid is simply immense.

The loss of the Nova Scotia salmon fishery has been estimated at \$600,000 per year to the local economy. The New England states have just blown \$10 million on cleaning up the polluted and choked rivers for salmon restocking, only to now discover that there is high acidity in the waters and consequently no new salmon.

Fourteen years ago the now President Ronald Reagan issued his immortal rejoinder, "A tree is a tree. How many more do you need to look at?" I suggest Mr. Reagan consult the \$19 billion per year Canadian forest industry which provides the United States with cheap pulp, paper, and newsprint.

In 1971, in Sweden where the effects of acid rain and environmental conditions are strikingly similar to those in North America, the government studied the acid rain impacts and concluded that by the year 2000

the country will have suffered a 13 percent decline in forest growth. That loss would precipitate a seven percent loss of the pulp and paper industries raw material base by the year 2000, equalling a \$40 million loss per year. In Canada, where we're already short two million acres of prime forest due to savage harvesting methods, the forest industry is many times larger than Sweden's and the acid rain losses could be far more dramatic.

Consider property. The Canada National Research Council estimated acid rain damage of \$285 million per year in 1977. That number has been discarded. It's considered grossly below the scale today. The United States Council on Environmental Quality put property damage due to acid rain and other pollutants at two billion dollars per year in 1979. In human health costs, the EPA estimates sulfur dioxide alone causes \$17 billion per year in the United States health costs. Economists and health care professionals estimate that on a national basis, premature death causes an \$80,000 loss in income alone.

As said earlier, these figures represent only a first step. It seems grossly insensitive to the concept of cost benefit analysis to have already declared abatement costs to be enormous and unacceptable, when the damage costs aren't yet even determined. Nevertheless, some leaders attempt to shape our social and political policies on this basis.

Consider the costs of abatement briefly. First, they are almost fully quantifiable now. Second, the technology is effective. To cite only the case of coal fired power stations, Japan has employed 95 percent reliable pollution scrubbers removing 90 percent of sulfur dioxide fumes to accomplish a 50 percent cutback in emissions since 1967, despite a 120 percent increase in energy consumption. Ironically, much of this technology is American invented, designed, and installed. These figures were reported to Congress by a United States industry and government task force in 1977.

Let's examine more carefully the billions of dollars to which Mr. Stockman refers. First, under the 1979 final revisions of the Clean Air Act, all new coal fired plants, as many as 350 of them by the year 2000, must apply better, but not best available, technologies to reduce emissions. The cost of these scrubbers is indeed large, nearly \$10 billion in addition to the capital cost of power plant expansions. The EPA, however, pointed out in considerable detail in 1979, that that extra cost is minute when compared to the total capital cost of the program, estimated at an incredible \$770 billion in 1995. Pollution scrubbers are indeed a small price to pay. They will increase utilities' annual revenue requirements only two percent, which in 1995 translates into only a \$1.20 higher monthly electricity bill for residential customers.

On the question of the roughly 60 United States oil fired plants now being converted to coal, without adherence to the new source performance standards and thus in violation of the Canada-U.S. Memoranda of 1979 and 1980, it is worth noting that the coal to be used costs one-third

to one-fourth the price of imported oil on a BTU basis. I don't think anyone would suggest that America should not turn to greater coal use. The savings to be realized within the annual \$80 billion per year oil import costs to the United States are significant. Yet little of that saved money is being applied to pollution controls.

There remains, however, the question of existing sources of acid rain emissions. International Nickel in Sudbury, for example, is the world's largest single source, as Americans are quick to point out. A recent exhaustive Economic Council of Canada study concludes that this most notorious, noxious, and recalcitrant smelter can accomplish a 50 percent abatement, using existing technology, within five years and for \$400 million. That is a wholly affordable cost for this the richest, lowest cost non-ferrous smelter in the world.

INCO has no substantial disagreements with the findings. In fact, as the study documents, all four of the principle Canadian smelters, producing half of Canada's total SO₂ emissions, can abate for \$1 billion with less than a one percent reduction in corporate profits.

As I said, the study is recent and unprecedented in its detailed analysis. It shows INCO, for instance, would save \$200 million in energy costs over 20 years and could still produce a salable sulfuric acid byproduct. We in Canada are still awaiting substantive action by the appropriate governments.

Coal fired power plants, which produce only 15 percent of Canada's emissions, can be 50 percent cleaner, by retrofitting scrubbers at a cost equalling only an added 10 percent on the rates for consumer electricity, according to a recent federal government study not yet released. Our utilities, all publicly owned in Canada unlike in the United States, are beginning to take effective steps, aided by federal funds in some cases.

Here in the United States the situation is admittedly more complex. The roughly 250 existing coal fired plants that operate with virtually no emission controls, violate current limitations without protest or penalty, or seek to boost their emissions to a higher level. This latter situation prompted Ontario to lodge an unprecedented intervention at the EPA only three weeks ago. The intervention is a nifty piece of legal and scientific work, something every acid rain critic should read on a rainy day.

Retrofitting existing plants will indeed be expensive. The Tennessee Valley Authority claims \$1 billion is needed to cut its 2.1 million tons per year emissions from fourteen plants. It can, however, be done. The dirtiest coal in this country can be mined and burned safely and cleanly in scrubber-equipped plants as the Congressional Office of Technology pointed out in May 1979. It is worth noting that the use of scrubbers in fact means use of more coal. Legislation which requires all power plants to enter a program of abatement is needed for the following reasons: to avoid the competitive disincentives of clean versus dirty coal; to equalize the costs through federal subsidies; and to impose pollution taxes geared to a rate of reduction. Such legislation would end the private producers'

and utilities' environmental blackmail concerning the loss of jobs in the mines. This kind of legislation does not exist nor is it contemplated. Legislation which exists in lesser form may this year be further downgraded.

As a Canadian I don't have all the facts and figures about the real cost of such a program, but from what I have seen of the industry statements, newsletters and advertising, neither does the industry nor certainly the public. I hear no clear-cut choices being offered based on cost benefit analysis. In fact, what I encounter most often are denials that acid rain is happening, that no damage has been proven, that the damage is inconsequential and, most common of all, I hear that more scientific studies are needed. In other words, go back to square one and pretend the facts must be rediscovered.

As Dr. Eville Goreham, biologist, academic, researcher and former presidential advisor on acid rain put it to me in an interview for my book, and I quote,

In something of this magnitude I can't see the sense of sitting isolated in some ivory tower studying and reporting what has already happened if it can be prevented by some reasonably based prediction and advocacy. I am sure it was impossible to convince the Romans their empire was about to collapse. It took 4,000 deaths in the London smog in 1952 to change England's mind about pollution controls. But does it require a catastrophe here to change our minds about acid rain?

Obviously Eville Goreham is talking about the preventive-reactive approach: pay now or pay forever.

I was asked to discuss the policy implications of the economic impact of acid rain. So far I have been presenting facts and reasonably based predictions. Notwithstanding Mr. Stockman, I think that is the appropriate role for me as a journalist. The policies which may develop out of this and other presentations are up to you and everyone else.