



# Statements and Speeches

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## THE URGENCY OF CONTROLLING ACID RAIN

A Speech by the Honourable John Roberts, Minister of Environment Canada, to the Air Pollution Control Association, Montreal, June 23, 1980

...I am pleased to address an audience where I do not have to dwell at great length on the fact that the issue of air pollution and air quality has changed very significantly over the past 15 years. We, and I mean both Canada and the United States, have tackled — and with measurable success, the most obvious forms of atmospheric pollution.

Back in the Sixties and Seventies, we rode out on our white charger like St. George and we slew the dragons. Today, many of us feel more like Don Quixote than St. George. We know that we are dealing with a far more subtle and insidious foe than we thought possible not too long ago.

In meeting the challenges of the Sixties and Seventies, it became apparent that as we solved the cases of gross, localized pollution, we had to address increasingly the underlying problem of resource use and management, of which pollution is often a symptom. We became aware of the persistent nature of certain chemical substances and their effect on health even at low levels of exposure — effects that are not immediately apparent.

My belief is that the Eighties — this decade — will be the time when we decide, as individuals and as nations, that it will be people and the environment and not people *versus* the environment in the future.

We can have both a healthy environment and a healthy economy. There is pessimism in some quarters, I know: people who suggest that industry doesn't care, science can't find the answers and, governments do not have the will to control air pollution when it means regulations that cut into the profitability of business. I don't believe that and neither do you, or you would not bother taking part in this important conference on the Air Pollution Control Association.

This is not to minimize the problems which lie before us. We have extremely serious problems to deal with — problems which will demand every ounce of our resolve and our intelligence.

Those problems are well known in this gathering but I am going to concentrate on the one which concerns me most deeply.

I am talking about the urgent need to control acid rain emissions from Canadian and American sources. Acidic precipitation is one of the most serious environmental issues facing our two nations today and on this issue I am going to take off the gloves and say some very blunt things, particularly since my audience is predominantly American.

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Right now, as I speak in terms of thousands of Canadian lakes — and quite a few American ones — a process is taking place which, if we, Canada and the United States, do not respond to as we should, is an inevitable as tomorrow's sunrise. You know what it is. It is the lowering of pH, the increasing of acidity. The process is simple. We know the rain is ten to 40 times as acid as it should be. We know these lakes, because of their geological setting, are poorly buffered, that it is only a matter of time — and for many not much time — until they take on the acidity of the rain. We also know that they don't have to get that acidic — only a pH of 5 — to lose their ability to sustain normal aquatic life, including fish, and thereby a major tourist and sport and commercial fishing industry. Already in Ontario alone — where the sensitive regions are much less extensive than in Quebec, or proportionately, our Atlantic provinces — there are 140 lakes which prove the truth of what I am saying. Atlantic salmon streams are also affected. I could take you today to many dead lakes — dead because of what man, not nature, has done. In the United States the number of already dead lakes is greater and in both countries the list is growing.

Many of these lakes contain increasing amounts of toxic heavy metals. Indeed I am told that these metals are what kills the fish in many instances. Those metals are there because the increased acidity in the rain immobilizes them — leaches them out of the soil and into the water. People talk about liming the lakes to restore the pH balance or prevent acidification. In some places in particular circumstances this may well be useful as a temporary expedient. But will it restore the lake to its original chemistry? Our experiments so far suggest not, and restocking of fish in some limed lakes has not worked. That sounds to me like irreversible damage, a terrible heritage for our children.

What of the soil drenched in acid rain or affected by dry deposition which some feel may be more damaging? Their chemistry is changing as surely as I am standing here looking at you. The only real arguments remaining among the scientific community are about the effects of these changes and most of these disputes are over the degree and speed of adverse effect on vegetation growth. Vegetation growth — it's such a neutral sounding expression. In Canada it means forests which sustain our largest single industry. That industry already faces the challenge of the newly expanding commercial forests of the southern United States. Are we to face as well the man-made further disadvantage of acid rain?

In Europe, the Organization for Economic Co-operation and Development (OECD) expressed the view in a recent report that the worst effects of acid rain were not likely to be on lakes and forests but on building surfaces and human health. We know less about both of these than we do about lakes but I scarcely find the OECD comments comforting. The deterioration of building surfaces would be gradual rather than sudden and therefore not necessarily noticeable, much less dramatic, except perhaps for valuable statuary. Yet I am told that if some of the early studies are valid the hidden cost to the Canadian and United States' economies of more frequent building repairs could be enormous.

What should I say about human health? My colleague, Monique Bégin, the Minister of National Health and Welfare, is concerned enough and has begun a major expenditure

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program of study into the possible health effects of acid rain. A British report on the health hazards of lead recently concluded that the major focus of concern over this problem should be on the lead being absorbed from lead pipes by the acidic waters of Scotland. Why are these waters acidic? At least in part because of acid rain falling on poorly buffered streams and lakes. The Scots are suffering because of their famous soft water, very much like that of the Canadian Shield. In Canada most of our major population centres draw their water from harder, better buffered sources, but what of New York City? What is the history of pH levels in its reservoirs? I am not suggesting a problem equivalent to that of Scotland if for no other reason than the much rarer use of lead piping. However, one could wonder what other metals may be picked up and what implications they may have.

Yet having referred to heavy metals, I must say that the principal concerns over health effects cited by most authorities are in another area entirely – the inhalation of fine particulates. Here the concern relates primarily to effects on people with respiratory ailments. More research is needed, the arguments continue but so does acid rain.

We know for a fact that the increased acidity in the rain – and in dry particulate deposition – is caused by sulphates and nitrates in about 70 per cent to 30 per cent proportions, the precursors of which are sulphur dioxide and oxides of nitrogen. There are arguments about the precise behaviour of  $\text{NO}_x$  in the atmosphere but much less about  $\text{SO}_2$ . We know that high stacks designed to reduce local pollution not only send the  $\text{SO}_2$  and  $\text{NO}_x$  further afield but, in the case of the former, provide more time for it to be changed into the acid-causing sulphates. And we know where the pollutants are coming from in both countries. Atmospheric modelling is a relatively new science and the arguments go on about the accuracy of this or that specific calculation of the movement and transformation of pollutants. But from where I sit the arguments are mostly over points of detail – precise amounts of fall-out in a given place from a given source. No knowledgeable person questions the basic fact that these pollutants are going up, moving considerable distances and coming down in an acid-causing form. Also we know that at least half of the acid rain falling in Canada has its origin in the United States.

The solution is therefore very straightforward. We must reduce drastically the amount of acid-causing pollution that is being emitted in both our countries. I am told that it is technically possible to effect such reductions. The only stumbling block is cost. How much and to whom?

In Canada, we are examining that question urgently – not from the perspective of wondering whether we should take action but with the intention of selecting the best means of doing the job. The provincial government has already begun in Ontario by putting a lid on the International Nickel Company's  $\text{SO}_2$  emissions at a level of 1,100 tons a day below current allowable emissions and mandating a further 25 percent reduction in two years. We're not stopping there! Through a joint Canada-Ontario structure we will be developing much tighter emission requirements to be implemented later in this decade. We are also going after other major pollutants both smelters and power plants. In a word we've started to move. I might add that our

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newest smelter at Timmins, Ontario, now under construction, will have 97 per cent SO<sub>2</sub> removal.

By contrast, the United States is not only predicting significant increases in SO<sub>2</sub> and enormous increases in NO<sub>x</sub> but is pursuing deliberate action to make sure it happens. I realize that my American colleague, Doug Costle, deplors this situation as much as I but he needs the support of the American people if he is to secure the authority needed to reverse this situation. We are so concerned about the seeming lack of awareness of the average American about acid rain that we are seriously considering handing leaflets on the problem to every tourist who enters our country from the United States. We have not yet chosen an appropriate theme. Perhaps it should be "come see our fish and forests before they fade to a memory".

Canada and the United States have committed themselves to developing an air-quality agreement designed to deal with this problem. I sense that it will be some time before any agreement with real bite can be signed, mainly because the legislative authorities needed in the United States to bring about rapid and major reductions in SO<sub>2</sub> and NO<sub>x</sub> emissions appear to be lacking.

For that reason we are also pressing for an interim understanding which would obligate both the United States and Canada to use existing authorities to the full limit in an effort to bring about some improvement in emission-reduction while an agreement is being prepared.

Critics of early control action within Canada argue that there is no point in imposing expensive control requirements because the growth in U.S. emissions will simply occupy the space we are thereby vacating. That argument fails to recognize the geographic location of some of our major emitters and the relief which reductions obtained from them can offer some of our most sensitive areas. Nonetheless, there is enough truth in the argument for me to place equal importance on securing major reductions in U.S. emissions. Stated very bluntly, I see no reason why Canada's ecosystems — let me be blunter yet, Canada's people, tourist camp operators, fishing guides, commercial fishermen, loggers, other forest product workers, building owners and tenants and possibly our asthmatics or others with respiratory illnesses — should have to pay the price of keeping the electricity rates of those coal-producing middle-western states well below those now being paid along the United States eastern seaboard.

Some Canadians among us have spoken darkly about "environmental aggression" and I reject that phrase because it suggests a deliberate act designed to hurt another. There is no malice in the acid rain from the United States, nor I assure you in the much smaller amount of acid rain we send back. What we are experiencing is the result of a genuine lack of understanding of the consequences of what seemed like a reasonable cost-effective control mechanism — high stacks and dispersion. What we failed to do was to build into our equations the hidden cost, the damages being done to distant interests. We today understand the inappropriateness of such control mechanisms and I commend the United States for its control at source requirements in its new source performance standards for SO<sub>2</sub> emissions from thermal power plants. I would like

see these extended to  $\text{NO}_x$ , especially in view of the projections for emissions of that pollutant. However, the real challenge is to apply the same concept to existing sources. I am confident that when the American people understand what they are doing to their neighbours and to themselves, they will respond to the challenge with the same determination they brought to bear ten years ago near the beginning of what some call the environmental era. There is still time to save some lakes and to reduce some of the other effects of acid rain to which I have referred. But there is not much time. We should have started years ago.

I urge you, the professionals in the air-pollution field, to carry this message back home. We in Canada have started in earnest the great task of controlling acid rain. We invite the United States to do the same.