Acid Rain – So What?

Dale French

Extensive scientific research and incalculable resources have been expended in the name of understanding and reducing acid rain in our environment. In looking back, is all the attention warranted? Some scientists have concluded that acid rain is solely responsible for the acidification of many lakes of the northeast and in particular in the Adirondack mountains of northern New York. Others claim it is a combination of acid rich soils and the rain, the rain being a minor contributor.

For one extensive overview we must look at the results of the publication, "Adirondack Lakes Survey: An Interpretive Analysis of Fish Communities and Water Chemistry, 1984-1987." This publication was produced by the Adirondack Lakes Survey Corporation (ALSC) and is available from the New York State Department of Environmental Conservation, Ray Brook, NY 12977.

From the Summary and Conclusion section we find information that would seem to refute most of the environmental claims of man made catastrophe. In Section 4.2.3, "If Fish Do Not Occur in a Lake or Groups of Lakes, Why Not?", there is considerable analysis of naturally acidic lakes, lakes with low oxygen levels and other lakes that regardless of acid level would not support fish. From the report, "Thus, based on these analyses, the estimated number of surveyed waters that lack fish for which mineral acids and acidic deposition are the most likely primary cause is in the neighborhood of 100-113 or about 30% of the fishless lakes sampled by the ALSC." (Bear in mind that, of those 30% there is still no link to acid rain being a greater factor in the lake acidification than the makeup of the drainage system surrounding those lakes.) "Factors not directly related to acid-based chemistry that were identified as associated with the absence of fish include small lake size, shallowness, high elevation with lower flushing rates and the occurrence of bogs or marginal bogs." Lakes in bog areas are generally considered naturally acidic. "In general, the numbers of lakes for which fish population losses were attributed to factors other than acidification exceeded those for which acidification was rated as the primary cause." The report goes on, "These findings are consistent with the conclusion that at least some of the fish populations have been lost from the Adirondack Lakes as a result of acidification and acidic deposition."

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Again, no clear indication about how much of the acidification is from precipitation.

In section 4.2.4, "Many of the lakes that are currently fishless (perhaps about half or slightly more than half) have always been fishless and would remain fishless even with reductions in acidic deposition." . . . "others are fishless, at least in part, because of natural acidity." A final conclusion in Section 4.2.5, "Thus, the majority of lakes currently supporting sport fish species would appear to be relatively insensitive to further acidification."

This information is from our own Department of Environmental Conservation. Whether this extensive research was conducted to prove that acid rain was the main culprit in this arena, I can not conclude. Many times studies are conducted to give credence to the obvious. The obvious here, is that a few hundred lakes do not have fish. But the conclusion that acid rain has caused this has been largely refuted. This particular study indicates that a small number are and have been affected from acidification but does not offer a premise as to the ratio of acidification due to rainfall or forest floor contribution.

Dr. Edward Krug, a director of environmental projects for the Committee for a Constructive Tomorrow, has conducted extensive

Dale French is the Supervisor of the Town of Crown Point, Essex County.

research into the issue of acid rain and its effect on our lakes. From a Dr. Krug article, "A number of lakes in the Adirondacks and Nove Scotia that are naturally acidic became more alkaline for several decades in the late 19th century and early 20th century—when massive cutting of trees and burning of stumps by lumberers reduced the acidity of the forest floor, and soil run off made it possible for species such as trout and salmon to survive. After lumbering and burning came to an end, forests grew back, and the soil run off, hence the waters, returned to their natural acidity. These changes in land use often dwarf in importance the impact of acid rain."[1]

". . .the influence of acid rain is uncertain. The Environmental Protection Agency's National Acid Precipitation Assessment Project (NAPAP) has determined that other stress factors (killing winters and severe droughts over the past 40 years, such as occurred at Camels Hump and other mountains) have been more important."[1]

"Perhaps the most important studies of the Adirondacks by NAPAP have involved the examination of fossil organisms and chemicals buried in lake sediments—what scientists call paleolimonology." "These studies reveal that high-altitude Adirondacks lakes, including Lake Colby and Woods Lake, have been fishless for most of their history. They also reveal that these lakes temporarily lost some of their natural acidity during the mid-to-late 19th and early 20th centuries—and during this period were filled with fish."[1]

"These findings are consistent with what we know from history. The Indians never lived in the Adirondacks. The Iroquois word "Adirondack" means "bark eater", telling us that the food supply, including fish, was never plentiful." [1]

"The notion that acid rain is responsible for acidity in lakes and streams is also contradicted by the existence of highly acidic surface waters in regions without acid precipitation. Fraser Island, Cooloola National Park and Tasmania in Australia, and the Westland area of New Zealand have no acid rain, yet are filled with highly acidic lakes and streams. Indeed the magnitude of acidic surface waters in areas without acid rain dwarfs that of areas supposedly 'devastated' by acid rain."[1]

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From a fairly technical paper produced by Dr. Krug in the Journal of Hydrology we could further explore the scientific side of this issue. Because of space, however, a quote from the conclusion of that article is more indicative to where the acid rain debate has gone, "To date, the pattern has been that research is initiated in response to political activists declaring something to be a 'crisis': a response which, unfortunately, legitimizes the assertions of catastrophe and does not deal with the problem of political interests coopting science." [2]

To further substantiate and illustrate the direction the acid rain debate has taken we refer to an article in Reason magazine, January 1992, "The EPA VS. Edward Krug" by William Anderson. "Krug, a soil scientist who had helped conduct a 10 year federal study of acid rain, spoke with some expertise. He told his audience that he and his fellow researchers on the National Acid Precipitation Assessment Project (NAPAP) had determined that acid rain was an environmental nuisance, not a catastrophe."

"It was a message that environmentalists in the audience didn't want to hear."

"Congress ignored NAPAP's findings and when Krug tried to point out that the federal government is forcing utilities to spend billions of dollars to solve a problem that doesn't exist, a federal agency did everything in its power to keep the media from listening to him. Krug's research has upset the plans of Washington's most powerful bureaucrats, and they aren't happy." According to this article Dr. Krug was called a "scientist of limited credibility" by the Environmental Protection Agency. "The agency, under pressure, later recanted those accusations." This article also mentions that, ". . .the Ohio Valley, which has the nation's most acidic rain, has no acid lakes or streams." A telling exchange in this Reason magazine article is between CBS 60 Minutes reporter Steve Kroft and David Hawkins with the Natural Resources Defense Council after Ed Krug had appeared on 60 Minutes in December of 1990. "Kroft also interviewed David Hawkins, a former administrator who is now with the Natural Resources De-

fense Council (NRDC). Hawkins simply dismissed the NAPAP study as irrelevant, stressing that the NRDC had always ignored NAPAP and had concentrated, instead, on policy making based upon the assumption that acid rain was an environmental disaster. According to NRDC's Hawkins, "The environmental community has spent almost no effort attempting to even monitor the progress [of NAPAP]. . . We have been working on trying to get legislation in Washington."

If in fact the acidity of the rainfall can be measured as a minute factor in the overall acidification of lakes in certain areas, the reduction of the acid components of industrial discharges is an insignificant, possibly even, immeasurable remedy. If Dr. Krug is correct and only 2 or 3% of the total acidity can be traced to rainfall then reducing this by 25 to 50% does nothing to forestall lake acidification. Even if the breakdown is 60-40 and we reduce the 40% by 25 to 50% what have we gained? Reducing the 40% by one half means that we still have 80% as much acid reaching the lakes as we do now. Bringing in the factor that only 100-113 lakes can be scientifically shown to have been measurably affected by acidification and that the acidification process has not been proven as coming from rainfall or more specifically, our midwestern industries, why are we even considering saddling America's industries with billions more in costs?

Much lip service in Congress has been given to the concept of cost benefit analysis. If industry has to spend several billion to comply with stricter emission standards we all will pay in the end. Some industries will pay, some will close and some will move. If by forcing industry to comply, we add a few years to some life forms in a certain lake, it is too large a price to pay for what our society may suffer as a consequence.

It is widely accepted now that the spotted owl debacle in the north west was but a means to cripple the logging industry. What is the expected result of the crippling of midwestern industries? Industries do have alternatives. Logging industries in South America are thriving and the cry is, "Viva St. Spotted Owl".[3] The headline for this article is, "It's not cheap labor that is driving U.S. paper and timber companies to invest abroad, but government policy". It goes on, "People in Chile speak gleefully of St. Spotted Owl. This legendary figure, an icon for environmental extremists in the U.S., is helping make Chile prosperous. Some of the same "stakeholders" in America's north west lumber industries have large holdings in South America and are thus riding high on the wave of windfall profits generated by the environmental policies of America. Likewise only a few businesses/companies threatened by acid rain legislation will suffer bottom line reduction. Some will pass on costs. If competition precludes such increases, others will move to areas where there is little in the way of environmental legislation and conduct business as usual with, in all likelihood, increased profits. Some workers will lose jobs but that's the price we must pay to keep the environmental industries in business.

There are particular environmental organizations that have "hung their hat" on the devastation of acid rain and indeed have solicited much funding to slay this windmill. They would better serve environmentalism if their attention was turned to another initiative. Some come to mind but it would involve extensive travel to far away places. (We can handle it if they can.) The environmental degradation in many third world countries (primarily caused by the suffocating poverty under which these populations survive) requires a kind of "if we don't act now" attention. If the top environmental organizations made this a major project not only would the third world benefit but America would most probably once again become the leader that it should be, given the possibility that many in the environmental industries would be out of the country. However, this will not happen because there is little wealth, money, riches, plunder, etc. in these poorer countries and the well heeled environmental organizations would suffer significantly in their portfolio profiles.

If Congress reacts to the acid rain issues the same as it has to spotted owls, global warming, wetlands and navigable rivers in deserts, ozone depletion, etc., then another nail goes in the coffin of our nation. □

Notes

[1] Policy Review, spring 1990, "Fish Story—The Great Acid Rain Flimflam" Edward C. Krug

[2] Journal of Hydrology, 128 (1991) 1-27, Elsevier Science Publishers B. V., Amsterdam—Review of acid-deposition—catchment interaction and comments on future needs

[3] Forbes—February 12, 1996, "Viva St. Spotted Owl" by Phyllis Berman with Peter Spiegel