



The Adirondack Council NEWSLETTER



to keep supporters informed of our activities

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TO SPRAY OR NOT TO SPRAY

Each spring an airplane flies over vast acreages of public and private land in about 25 towns in the Adirondack Park and on three separate days dumps a chlorinated hydrocarbon insecticide called methoxychlor into streams and rivers to "control" blackfly larvae. The chemical is rated "highly toxic" to fish and "slightly toxic" to birds. Studies have shown that non-target species of arthropods (invertebrate insects, crustaceans) are reduced by the spray. Some of these arthropods are beneficial, providing food for trout and birds. Methoxychlor, a chlorinated hydrocarbon, is a persistent insecticide, having long residual activity in soil and water.

Spraying methoxychlor is expensive, costing each town several thousand dollars yearly. It might seem worth the expense if the spray were effective since blackflies are a pest few people would mind doing without, and theoretically at least, more tourist dollars can be attracted to the Adirondack Park if blackfly numbers are controlled. A recent study conducted by Paul Smiths College, aided by the New York State Health Department and Trout Unlimited, has shown, however, that this larvicide spraying is not effective because it is rarely applied at the correct time. The spray is only effective if applied during the larvae stage of the blackfly. The time of the larvae stage varies for each stream. Unless each stream is monitored and the spray plane summoned to each at the precise time (an unworkable situation), the spraying is a futile exercise. In the Town of Brighton, during the two year study period the regular, scheduled spraying was ineffective because it was applied during the egg or pupal case stage of the insect. The Town Supervisor has already said his town will discontinue the program; "we felt it was totally ineffective last year. We were paying a pretty darn good price for the privilege of being eaten alive by blackflies."

Later on, in the month of June, three additional applications of another pesticide called dibrom occur in the same 25 Adirondack towns. This adulticide also costs each town several thousand dollars. Because dibrom is aimed at killing adult blackflies as they fly about, it is applied as a space spray over populated areas. Dibrom is an organophosphate chemical, belonging to a group of compounds that are relatively toxic but short-lived. It is quite toxic to fish and bees and moderately toxic to birds. It is relatively non-toxic to game species of wildlife. Little is known about its toxicity to many non-game animals, however.

Side-effects of both chemicals may include the destruction of fish and birds, either directly by poisoning or indirectly by the starvation of those species that depend upon insects for a food supply. What actually occurs may be rather complex, with the lack of food causing the animal to draw upon its fat supply, which often retains a variety of accumulated pesticides. The result is usually not dramatic. Dead birds and fish are not readily observed after spraying.

Many people have questioned the rationale of spraying for several years, arguing that the spraying should be curtailed until it can be proven that it is substantially effective on target species

and substantially ineffective on non-target species and the environment in general. Some of these people have requested the Department of Environmental Conservation (DEC), the state agency that approves the town spray programs, not to permit the spraying of their properties. Others have collected signatures on petitions to stop spraying in their towns, but to little avail. And in one instance recently, a group of citizens in one town initiated a lawsuit to enjoin the town from spraying their properties. Curiously enough, in the latter instance, and on at least two additional occasions, the town governments ignored the desires of their citizens and proceeded with the spraying, claiming a threat of encephalitis in the town or nearby. None of the encephalitis claims were substantiated, however, and in one instance a check with State Health Department personnel indicated that contrary to what the town had claimed, blood samples from several town residents showed no positive cases of encephalitis, no antibodies, and no sign of contact with that disease!

In the spring of 1979 it seemed there might be some ray of hope that the spraying program could be evaluated on a more rational basis. In compliance with the State Environmental Quality Review (SEQR) procedure, the Department of Environmental Conservation prepared a Draft Environmental Impact Statement (DEIS) and held a hearing on March 1. The statement was hardly adequate because not enough research and monitoring had been done to permit a thorough assessment of potential environmental impacts.

Several town fathers and people in the tourist industry praised the spraying program, stating that citizens no longer had to endure the obnoxious little pests and that a curtailment of the spraying would cause a significant loss of tourist dollars. Skeptics of the spray program criticized the report and raised questions that had not been answered satisfactorily:

—Why are private lands and streams passing through them sprayed without the landowners permission? The permit states that it "does not grant authority to spray private lands without the owner's permission." The permit also states, "issuance of the permit does not authorize the treatment of water lying on or passing through the property of others without their consent."

—Why are statements in the DEIS so general and not supported by scientific evidence? For example: "Despite the reduction in hatching success, the population of breeding birds appears just as high in the treated areas as in untreated ones. The fact that birds are still present in significant numbers after 28 years of blackfly control, is an indication that decimation of the species is not likely to occur."

—Why be concerned only about decimation? There needs to be concern about actual or potential mortality. More studies are needed focusing on individual species and their status. The DEC should also review National Audubon and federal government studies (spring and Christmas counts, breeding bird census, etc.)

—Why isn't there adequate monitoring of the spraying procedure since mixing ratios and application methods are so critical (exceeding the recommended dosages of these

chemicals can be very harmful to non-target species)?

The final Environmental Impact Statement (EIS) showed little improvement over the draft. Critics of the spray program and the EIS process continue to argue that the program should cease until more is known about the efficacy of the spray and its side effects. The only immediate objection to stopping the program is that it is alleged certain tourist areas would sustain unacceptable economic loss. The DEIS contained unsubstantiated estimated tourist dollar losses in three Adirondack towns. That there was little basis for such estimates was confirmed in the final EIS, which included an additional estimate of a million dollar loss that would be sustained at Santa's Workshop if the program were discontinued. The basis for that addition to the EIS was an employee of the Workshop simply stating this was so at the DEIS hearing!

That more knowledge about side effects of the spraying program is essential is confirmed by extracts from two letters received from a DEC biologist:

"I am very concerned about the impact the organophosphates (dibrom is one) and carbamates may be having on a variety of wildlife ranging from birds to frogs, and I feel it is critical that we investigate the impact of the organophosphate carbamate pesticides more fully."

"It would be necessary to have a thorough monitoring program to find out what a spraying program does to the ecosystem. I don't see that coming about because government deals primarily with paper shuffling and cosmetics, rather than leading in discovering the impact of pesticides."

Another DEC biologist has written in a letter, "We agree that more control of spraying operations is needed, however manpower is very limited." All indications are that the spraying contractor rarely sees any DEC inspectors. When the contractor was interviewed by a newspaper reporter in May 1973 it was reported, "at times they mix their own chemicals when the standard shipments seem to lack the proper punch for a knockout blow."

As a result of the aforementioned study in the Town of Brighton, which has shown that blackfly larviciding is not presently working, The Adirondack Council has written DEC Commissioner Robert Flacke, as follows:

"In early 1980, DEC will again be issuing permits to 30 or so Adirondack towns to enable them to spray Methoxychlor into their streams on three separate occasions in May. Is there any conceivable way that this can continue to be justified? In view of the cost of the program and the potential hazards of introducing additional quantities of an ineffective chlorinated hydrocarbon into the environment, we are at a loss to see why this program should continue. At least a moratorium seems in order until the spray's effectiveness can be proven under actual field conditions."

The Council has not yet received a response to the letter. We hope we are wrong, but our guess is that the spraying will continue. Why? Because it has for many years and many programs within bureaucracy persist whether they have merit or not.

If you oppose the spraying program and own land in a town that sprays we hope you will request that your land not be sprayed. This should be done soon because towns are already planning and budgeting for next spring's program. The procedure to follow is:

- Write your town board with two copies to the Director, Bureau of Pesticides, DEC, 50 Wolf Road, Albany, New York 12233; include a map of your property that clearly shows where in the town it is located. Ask the Director of Pesticides that a copy of your letter be entered into both the larviciding and aldulticiding files.

- Ask your town board to let you know when the spraying will occur in case you may want to take cover or protect other things from the spray.

- Monitor the spraying as it occurs. Accurately note if any violations occur as to date, time of day, location. Use

binoculars to obtain any identifying numbers on the plane.

Try to photograph the plane in its violation, with an identifiable point of reference to its location, if possible.

- Notify the DEC and the town board if you suspect a violation.

If you note any violations we hope you will inform the Council about them. A record of infractions and suspected negative effects of the spraying will be helpful if legal action is initiated finally to stop this program until adequate monitoring and impact assessment are conducted. We encourage all concerned parties to carefully observe spraying operations. Permits state that methoxychlor, which is applied during May, is not to be sprayed in lakes and ponds. It is not to be applied to or allowed to drift into any known water sources. Dibrom, applied during June, is not to be sprayed into lakes and streams and no spray material is to drift into any known water sources.

Blackfly spraying is representative of an increasing dependence on chemicals in this country. By their very nature, chemical controls are self-defeating, because they have been devised and applied without taking into account the complex biological systems against which they have been blindly hurled. Rachel Carson told us in *SILENT SPRING*, "the really effective control of insects is that applied by nature, not by man. Populations are kept in check by something ecologists call the resistance of the environment, and this has been so since the first life was created. The amount of food available, conditions of weather and climate, the presence of competing or predatory (and parasitic) species, all are critically important."

Sometimes the result of chemical spraying has been a tremendous upsurge of the very insect the spraying was intended to control, as when blackflies in Ontario became many times more abundant after spraying than they had been before. Under the stress of intensive chemical spraying, the weaker members of insect populations are often weeded out. Frequently only the strong and fit individuals remain to defy our efforts to control them. Life cycles can also be affected. Perhaps that is why blackflies seem to occur in some areas throughout summer and into autumn, yet old-timers tell us that years ago blackflies were rarely encountered after mid-July.

We hope that someday the advice of Dutch biologist C.J. Brieger will be heeded:

"It is more than clear that we are traveling a dangerous road... We are going to have to some very energetic research on other control measures, measures that will have to be biological, not chemical. Our aim should be to guide natural processes as cautiously as possible in the desired direction rather than to use brute force... We need a more high-minded orientation and a deeper insight, which I miss in many researchers. Life is a miracle beyond our comprehension, and we should reverence it even where we have to struggle against it... The resort to weapons such as insecticides to control it is proof of insufficient knowledge and of an incapacity to guide the processes of nature that brute force becomes unnecessary. Humbleness is in order; there is no excuse for scientific conceit here."



ON ACID RAIN

Acid rain, or acid precipitation, as it is more properly called, is a widespread international environmental problem. It has become the focus of much attention and recently was the subject of an international conference in Toronto in which The Adirondack Council took part. The conclusion of many of the conferees was glum. As our nation resorts to further coal use, the problem appears to have no end in sight. Painful solutions will be required to merely maintain

the status quo and this appears to be not enough.

Acid precipitation begins with the burning of fossil fuels, particularly coal, in heavy industry. Two gases, sulfur dioxide and nitrous oxide are emitted. Most of the nation's sulfur emissions, and one fourth of the nation's nitrogen oxide emissions come from power plants.

The problem of acid precipitation was exacerbated when Congress enacted air quality standards in the early seventies that required reductions in air pollution levels in given areas. The techniques for achieving the standards were left up to the polluters. Since there was no requirement that pollutants be reduced in quantity, but merely in concentration, industry took the inexpensive approach and raised stack heights to disperse their emissions high up and downwind. Most of the polluters in the U.S. are in the midwest, the Ohio River Valley in particular. But the huge generating plant in Sudbury, Ontario contributes one percent of the total annual emissions of sulfur throughout the world from its 1250 foot tall stack.

Downwind of these tall stacks are the eastern provinces of Canada, the Appalachian Mountains, and the Adirondacks. The rain and snow that fall on the flanks of these mountains are picking up the sulfur and nitrous oxide gases from the atmosphere and forming acid solutions. As a result, on top of Whiteface Mountain the pH reading for cloud moisture and precipitation has been measured at an acidity approaching that of vinegar, or 30 times the acidity of normal rainwater. And this is not an isolated occurrence.

The consequences to the Adirondacks have been severe and have prompted several letters from The Adirondack Council to the press, including the following letter published in The New York Times on November 21, 1979:

To the editor:

Much attention has been placed recently on the problem of acid precipitation. Here in the Adirondacks the problem is especially severe. 56 percent of the lakes above 2000 feet elevation are devoid of fish and there is a likelihood that the forests are being deprived of nutrients. This is due to the fact that the Adirondack lakes and soils lack the pH buffers that exist elsewhere in the northeast. Now there is also evidence that some of the high elevation lakes are filling in at an abnormal rate with aquatic sphagnum mosses and mats of algae and fungi. Apparently the oxygen breathing microorganisms are not decomposing these plants as they normally would, despite plenty of dissolved oxygen in the water. This raises the possibility of death at the lower end of the aquatic food chain. Meanwhile the anaerobic bacteria under the mats are having a field day, producing that rotten egg smell in wilderness lakes more typical of the East River on a bad day.

The acid precipitation problem is not specific to the Adirondacks. In other areas as well, cars rust out faster, building facades begin to disintegrate and there is even evidence that nitrogen-fixing bacteria in legume crops, like soybean and alfalfa, are being adversely affected. Nitrogen-fixing bacteria normally replenish the soil with essential nutrients...

In addition to the problems mentioned above, acid precipitation causes other impacts as well. The potential damage to terrestrial systems may ultimately be more catastrophic than to aquatic systems. Tests done by the EPA have linked acid precipitation to reduced germination of seeds and loss of seedlings. Acid rain has been shown to leach nutrients from plant tissues and cause deformities in foliage. Nutrients are also known to leach from soils, and soil bacteria are inhibited from decomposing surface litter.

Perhaps most disturbing, heavy toxic metals such as aluminum, cadmium, lead and mercury become soluble and available for root absorption. These heavy metals also become available in the aquatic food chain.

The economic impact of acid precipitation on the Adirondack Park is very real. Although the economic loss has not been

documented for the forest industry, declines in forest growth rates have been demonstrated. Declines in fish populations in the Park alone are estimated to cost \$700,000 to \$1 million a year in tourism losses.

If we add to these losses the cumulative effect on all of the northeast, eastern Canada, and the increasingly affected areas of the south and west, the economic impact is staggering. According to a report submitted to the President's Council on Environmental Quality the corrosive effects of acid precipitation on construction materials, fabrics and other surfaces alone are estimated at \$2 billion a year in the U.S.

The health effects of sulfur dioxide and nitrous oxide emissions in the dry state are also very real. According to Gus Speth, Chairman of the Council on Environmental Quality, a recent study in New Jersey found that reductions in sulfur dioxide and particulates over the last six years are now saving over 2,000 lives a year.

So what is being done, or can be done to alleviate this pervasive problem? The Council's letter to the Times continues:

When will our society and that of our Canadian neighbors wake up to their environmental priorities and put scrubbers on the fossil-fuel-fired facilities? This technology is over 90 percent effective at removing sulfur dioxide, a cause of acid precipitation as well as serious breathing disorders. Scrubbers will only add about 15 percent to the cost of operating these facilities, and about 3 percent to consumers costs according to the EPA.

State and federal tax incentives and subsidies to aid industry in achieving the necessary scrubbing should be considered to spread the cost of cleaning up our air to all citizens. Additionally, the Clean Air Act should be amended to insure that existing point sources of the gases involved meet stringent performance standards. Ample evidence indicates that it's time for action. Delay will lead to more lifeless waters and other deleterious effects.

Stephen Scholle

The Adirondack Council

About 350 new fossil fuel plants will begin operation within the next 10 years. This summer the EPA announced emissions standards for these new plants: 70 percent sulfur removal for the cleanest coal (mostly in the west) to 90 percent for the dirtiest. The rule is considerably weaker than the 85 percent across-the-board clean-up EPA proposed earlier, and the 95 percent sulfur removal standard that environmentalists believe is mandated under the Clean Air Act as "best available control technology."

Most distressing is the estimate that 70 percent of the problem is caused by power plants built before 1970, the year Clean Air provisions went into effect. Coupled with Canada's power plants that require no scrubbing devices, it is clear that amending the Clean Air Act to require retrofitting of older plants is an important step in controlling sulfur dioxide emissions. Some kind of effort on Canada's part is also crucial. An international treaty on air pollution is being worked out at present between Canada and the U.S. and this should prove helpful. In addition, both countries should endorse the washing of whatever coal is burned. Washing coal is inexpensive and can reduce the sulfur content by 25 to 40 percent.

On another front, EPA is presently considering relaxing the State Implementation Plan (SIP) of Ohio to increase emissions from two coal burning facilities. Should the EPA decide in Ohio's favor, a suit will be brought by several plaintiffs including The Adirondack Council, the State of Pennsylvania, the Sierra Club Legal Defense Fund and the Environmental Defense Fund. Any further relaxation of SIPs will undermine the effort to clean up our air and our rain.

Coupled with energy conservation, the above solutions may make headway in curbing what is perhaps our most pervasive pollution problem yet.

*A copy of the last financial report filed with the New York Department of State may be obtained by writing: New York Department of State, Office of Charities Registration, Albany, NY 12231 or The Adirondack Council.

The Adirondack Council is funded solely through private contributions and grants.

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The Adirondack Council

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A coalition of the National Audubon Society; The Sierra Club, Atlantic Chapter; The Wilderness Society; The Natural Resources Defense Council; The Association for the Protection of the Adirondacks; and other concerned organizations and individuals.

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