

Tracking Acid Rain Across New England

Essay By Catherine Schmitt

Russell Pond, New Hampshire,
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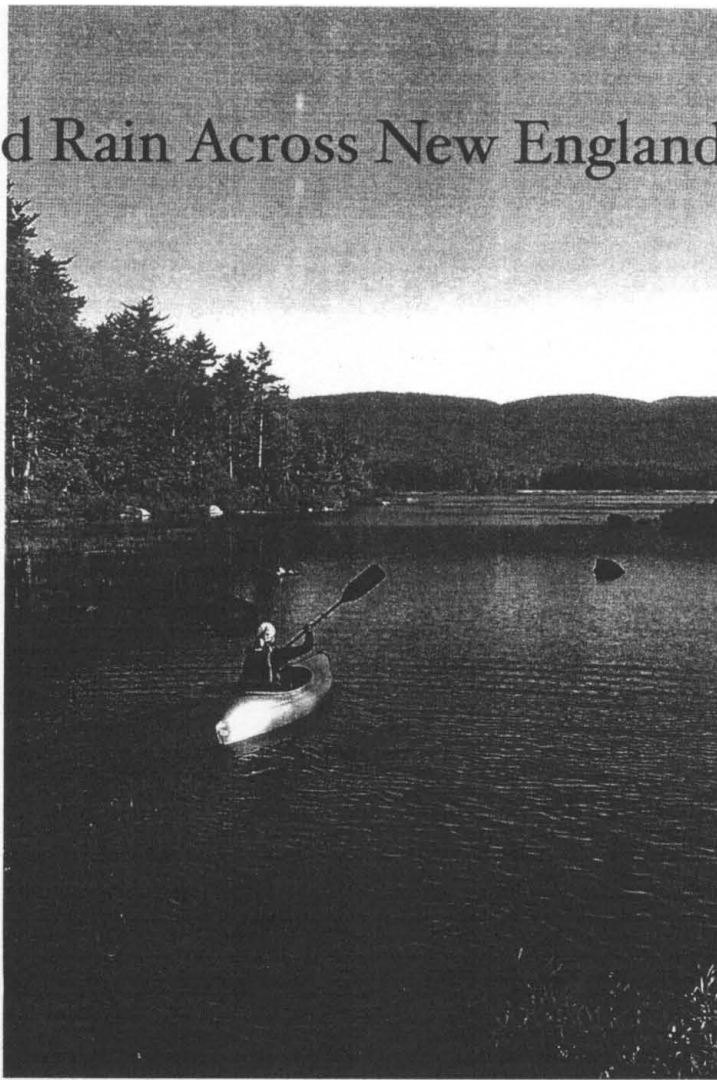
It is just before sunrise in the White Mountains, and the blank spot where the Old Man of the Mountain used to be is nothing more than a shadow of gray on gray. Ken and I turn off the Tripoli Road into Russell Pond campground. We untie the kayak from the roof of the car and grab sample bottles from a cooler in the back. I climb into the kayak and Ken gives me a push toward the middle of the quiet pond. Mars is a pinprick of light in the lavender sky above me as I reach into the water, rinsing and filling the plastic bottles. I paddle back to shore, we strap the boat back to the roof and put the bottles in the cooler. We leave Russell Pond before the nearby campers begin to stir from their tents.

This is the first of fourteen lakes we will sample today in New Hampshire; last week there were twelve in Massachusetts, Rhode Island, and Vermont. Next week I will visit two lakes in New York. We are taking water samples for a research project funded by the EPA to evaluate the effectiveness of the Clean Air Act Amendments of 1990. These lakes are a subset of more than 300 lakes being tested in New England. The lake-water chemistry is compared to other lakes in the Adirondacks, the southern Appalachians and Blue Ridge Mountains, all areas sensitive to acid rain. The Northeast is vulnerable to acid rain because weather patterns carrying pollution from the Midwestern U.S. and Canada converge over northern New England before heading out over the North Atlantic.

So here we are crisscrossing New England, from one lake to the next. From Skokes Pond, an unexpected hole punched in the coast of Massachusetts, surrounded by a twisted maze of private sandy drives, towering mansions, and salt-worm cottages, to Rhode Island's Copicut Reservoir, reached by a road rougher than a dry riverbed. At Copicut we note that the water levels are higher than last year, the drought is over and what were exposed shorelines are now wetlands soaked to the brim.

Touring the New England landscape, we see that sprawl is everywhere. It's in Plymouth, in Belchertown, in Kingston and in Keene; each year there is a little less green and a few more "No Trespassing" signs. I remembered Muddy Pond in central Massachusetts as a tranquil beaver-dammed lake in the woods, but this year the woods have been razed and a road is being built. A lone backhoe pushes the fresh soil around, and pauses so that we can hike by. On a hot, dusty day earlier in the summer we waited in the construction-zone traffic on Route 100 in Vermont where they are erasing a mountain and moving a river so that the road can be straighter so that tractor-trailers can go faster around the turns.

When we are sampling, most people just stare at us as they drive by, though a few are interested in what we are doing. Not everyone is happy to see us. As I paddle back to shore at one crowded New Hampshire pond, a man comes out of his house and walks to the end of his dock and yells at me, "This is a



KEN JOHNSON

Another day on the job, Catherine Schmitt sampling water quality in New Hampshire's North Pond.

private pond!" I explain to him that we are doing sampling for the Mitchell Center for the EPA and we come every year. "No you don't," he says. He says people have come before and taken water samples from his pond and then tried to tell him what to do with his land. We explain that we are sampling for acid rain, and not algae, and we are not there to tell him what to do with his Technicolor green lawn.

Later in the day, at Hodge Pond, I decide I'd rather drag the boat through the cold stagnant water of the bog than hike through the mosquito-hung woods; my legs are scraped and scratched by leatherleaf twigs. Ken and I swear at the thirsty bugs and the thick woods and the heavy boat.

It may seem strange to sample water as a measure of clean air. Lakes are a mirror, not just of the sky on a quiet morning, but of the pollution falling from the sky. Fossil fuels are burned, smoke loaded with sulfur and nitrogen rises to the sky. The chemicals stick to dust that settles back to earth, or mixes with rain and snow, turning water to a weak solution of acid. So anything that affects one aspect of the environment eventually reaches all the others. Smokestack exhaust becomes acidic rains; air pollution becomes water pollution.

Some of these lakes that we are visiting have been sampled for decades in an effort to track improvements in water quality as air pollution declined

due to the Clean Air Act. The 1990 Clean Air Act Amendments have been successful in reducing the amount of sulfuric acid in rain, but lakes in New England have not recovered as well as lakes in other areas such as the Adirondacks and southern Appalachians. Though scientists are not sure why, somehow the years of acid rain have reduced the lakes' ability to bounce back. It will take longer records to understand trends in ecological responses. So we continue to monitor the lakes, year after year after year, tracking progress, trying to understand where we are going by knowing where we've been.

By eight in the evening we are at Ivanhoe Pond. Mars is bright, as it was this morning. The only sounds are distant roads, the day's last chorus of cicadas, and the splash of my paddle hitting the inky-black water ironed flat by the weight of the day. Bats cartwheel and dive at the surface of the lake around me. When I turn around to paddle back to shore it has gotten so dark that I can barely see the landing I set out from. I call out for Ken but he is busy at the car, and I slowly make my way along the shore, looking for him. As I drift by houses with rooms lit golden by lamps, I see people inside, making dinner, watching TV, unaware of my presence. I find Ken at the launch and we drag the boat out of the water one last time, and begin the long dark drive back to Maine.

Catherine Schmitt and Ken Johnson are research assistants at the Senator George J. Mitchell Center for Environmental & Watershed Research at the University of Maine.

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