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**T**he record-breaking spring runoff has subsided on the Hudson River. The water level of New York's signature waterway is now just a few inches above normal.

For miles, the river flows smooth and clear, carrying the pure waters of the Adirondack snowmelt to their rendezvous with the Atlantic Ocean. In the North Country, the Hudson is one of North America's great mountain streams, cruising through gorges, crashing over boulders, churning into a white-water delight.

Around Glens Falls, however, the river runs not just into civilization, but into industry.

For years, the Hudson has been a commercial waterway, beginning with the log drives of the last century. The river's cascades and falls have turned the mill wheels and fed the canals that were the original engine of commercial New York. The river has also borne the burden of carrying away our waste, from sewage to toxic chemicals.

In the past decade, water quality in the Hudson has improved. But its remarkable spring beauty hides the invisible residue of an industrial disaster: the pollution of more than 185 miles of the river with hundreds of thousands of pounds of poisonous polychlorinated biphenyls, which cause cancer and birth defects. It's those PCBs that stand between us and a healthy river.

The fight over what to do about the poisons has raged for nearly a decade. In 1983, the federal Environmental Protection Agency declared the river, from Hudson Falls to New York City, one of the nation's largest and most complicated Superfund toxic-waste sites. The state Department of Environmental Conservation and some environmental groups have advocated dredging the contaminated river bottom and transferring the sediment to a landfill. That's still DEC's position, says department spokesman Ben Marvin. "barring conclusive evidence that other options will work as well or better."

But General Electric Co., the corporation that pumped 500,000 pounds of PCBs into the river between 1947 and 1976 from its plants in Fort Edward and Hudson Falls, says there is a better way. Bacteria will eventually break down the chemicals in the river, a "natural" process that the company wants to help along by introducing additional bacteria. GE, which could face hundreds of millions in PCB cleanup costs, claims its option would be much less costly and more efficient.

Against the backdrop of this debate, however, comes more bad news. In last year's annual tests of PCB levels in upper Hudson River fish, GE, the federal government and the state DEC all found a dramatic increase in PCB toxicity, as much as 300 percent over 1991 levels. Coming more than 15 years after GE stopped using PCBs along the Hudson, this "spike" sent shock waves through those concerned about cleaning up the river, forcing all sides in the controversy to look anew at their proposed solutions.

**O**n a clear spring weekend, the Hudson still belongs mostly to nature. Few of the pleasure boats and watercraft that will clog the river come Memorial Day weekend are afloat. Marina owners are getting their docks into shape. The temperature must rise a bit more before kids start awing from ropes tied to overhanging branches and splashing into the river.

There are more than 200 different types of PCBs. Each varies in the number and location of chlorine atoms attached to its molecular carbon rings. PCBs are odorless, colorless and range in consistency from heavy, oily liquids to waxy solids. Because they are fire resistant and don't conduct



# Roiling on the River

**To dredge or not to dredge?**  
For the communities along the banks of the Hudson River, that is the question.

heat or electricity well, they have numerous commercial applications, including insulation in electrical systems. PCB production has been banned in the United States since 1977.

Since 1976, the state has also banned all fishing on the river between Bakers Falls in the Village of Hudson Falls and the federal dam at Troy. Voluntary fish-consumption advisories are in effect from the dam south to New York City. Most affected has been the commercial striped bass fishery, which once earned New Yorkers \$40 million a year.

Although New York finally took action against the contamination in 1976, in that year it also let GE off the hook. The company agreed to contribute \$4 million to help study the extent of PCB contamination, but was not required to admit to any wrongdoing. Indeed, most of its PCB discharges had been permitted by the state. The settlement also absolved the company of any further liability for cleanup costs, now estimated to run as high as \$300 million.

Unfortunately for GE, the federal Superfund Law came along, requiring that known polluters bear cleanup costs. The

federal law superseded the sweetheart deal with the state. Since then, the company has been very involved in the debate about what cleanup methods to use.

**I** don't think it's exaggerating to say that this is the biggest development on PCBs in the Hudson since the contamination was discovered in the mid-1970s," Bridget Barclay, environmental director of the Hudson River Sloop Clearwater, says of the recent elevated PCB levels. "We are now dealing with a significant source of more PCBs getting into the river. It's unquestionably coming from GE's Hudson Falls plant."

The highest new concentration was found in September 1991 near the Thompson Island Dam, eight miles downstream from the GE Hudson Falls plant. There, PCB concentration levels were comparable to those found in the river in the 1970s, about 100 times the average concentration in the late 1980s. Similar results came in from Port Edward and even farther downriver in Schuylerville. At one

location, sediments had PCB levels of 2,000 parts per million. "These are very, very hot sediments," Barclay observes. The state believes that to eliminate the chemical from the food chain, any cleanup must reduce the contamination level to .01 parts per billion.

The leading suspect for the new source is the GE facility located on a high bluff just below the Fenimore Bridge in Hudson Falls. Between the plant and the river are the ruins of an old mill, dating back to the last century. Part of the mill was a channel raceway that diverted water to drive the turbines. A gate had been installed to close off the channel, but it apparently fell into disrepair.

"It's believed that what has happened is that PCBs were seeping through fractures in the bedrock, or old sewer or utility outflow lines, then into this old raceway structure," says Barclay. "The consensus is that the flow of water was drawing PCBs out of the bedrock, into the river."

The raceway channel has since been closed by the DEC.

The cleanup negotiations between GE, DEC and the EPA have included talks about what to do with the contaminated so-

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Waterdance: (left) the Hudson River above Stillwater; (above) a view of GE's Hudson Falls plant.

at the Hudson Falls plant. But a more serious concentration of PCBs appears to have permeated the soil under the factory than anyone suspected.

Possible plans for coping with the elevated PCB levels will be discussed today (Thursday), when the EPA's Science and Technical Advisory Committee meets at the Sheraton Airport Inn on Wolf Road. The committee was set up to help re-evaluate the Hudson River's designation as a Superfund site.

Both the state department and GE will report to the committee on their investigations into the new PCB source. It seems likely that the EPA will make the final decision about how to handle the crisis, sometime after the reassessment process is complete next year.

Jack Batty, a spokesman for GE, would not comment on what the company will say at today's meeting.

"As you know, we found the high levels and reported it immediately," he said. "It's been a very intensive search. (The source has) been elusive to say the least, but we're making progress."

Out on the river, it's hard to believe in the PCB crisis. The bright green of trees bursting to life contrasts with the clear blue sky and the billowing white clouds. The river seems at peace. The songs of red-wing blackbirds, starlings and robins fill the air. Ducklings trail their mother along the shoreline with military precision. A lone osprey perches on a dead branch, waiting for a meal to venture too close to the surface. Two great blue herons look positively prehistoric as they troll in the marshes and wetlands.

The Hudson looks surprisingly clean. The state has brought the problem of municipal sewage discharge under control. In Queensbury and Waterford, and downriver in Rhinebeck, Port Jervis and Poughkeepsie, residents drink the water, aided by filters and chemical additives. They don't seem worried about the toxins.

"PCBs are not very soluble in water," says Tony Forti, a research scientist with the state Department of Health. "The big

concern is fish consumption, because fish bioaccumulate to a large degree.

"That's the ironic thing," he says. "The Hudson has been cleaned up quite a bit. But the PCB problem remains. You can't see it, you can't taste it. But it's in the fish."

The word is out among the people fishing illegally along the path of a 34-mile canoe trip last weekend between Fort Edward and Waterford. A man casting for bass from his rowboat says he will throw back anything he catches: "They're not safe to eat."

But there's also a general antagonism against the state for banning fishing on the upper Hudson. One resident complains that local youngsters are growing up without access to the time-honored sport. A state employee tells us that he's got his own secret bass cove. (Don't ask—it's a secret.) He wouldn't eat the fish, either. Too many ulcers on their bodies and things wrong with their fins, he says. But this informal survey represents only a tiny fraction of those fishing. In 1988, an estimated 26,800 licensed anglers spent 232,100 days on the river.

A more extensive survey conducted by Clearwater between June 1991 and July 1992 was more disturbing. After interviewing 336 Hudson anglers, Clearwater found 58 percent planned to keep their catch. While the percentage was just 22 percent in the upper Hudson, where the problem is worse, it was 72 percent in the lower Hudson.

Shortly before sunset, at the Schuylerville Yacht Basin, Judy Schmitt-Dean is getting her marina ready for summer. She is also chairwoman of EPA's local Citizen Liaison Group, which, like the Science and Technological Advisory Committee, was created to carry out the federal Superfund reevaluation.

Although the federal agency is neutral about whether or not to dredge, Schmitt-Dean isn't. "Dredging," she says, "is the technological equivalent of the Edsel."

But, she adds, the best person to talk to is Sharon Ruggi, a local activist and resident PCB expert.

Ruggi has followed the controversy since the late '70s, when the DEC first proposed dredging the river and came up with a proposed PCB landfill site next to the river in Fort Edward. A state siting board gave the project the go-ahead, but they were blocked in court by a group called Citizen Environmentalists Against Sludge Encapsulation. So the DEC selected another site, and it turned out to be Ruggi's farm.

"In the fall of 1985, we got a knock on the door saying 'You're it,'" Ruggi recalls.

She says state officials said they would be willing to buy the whole 100-acre farm at market value, but that if the family fought them, they would take only the 55 acres they needed, and the Ruggis would be left to get the best deal they could for the rest. "They weren't too nice to deal with," she says bitterly.

But the Ruggis did fight, and after three and half years of hearings, the siting board rejected their farm. The department has since renewed its efforts to turn the original site into a landfill. Ruggi, meanwhile, has become a leader of CEASE.

"I am definitely anti-dredging," Ruggi declares, "because it will require the establishment of a toxic waste dump. I do firmly believe in the biodegradation theory. Not because I'm a scientist. But I have attended so many meetings, and I have listened to the science that surrounds this project. Therefore I think that the problem is definitely taking care of itself. When you weigh that against the creation of a toxic waste dump, we are much better off leaving (the PCBs) where they are."

Ruggi also has little use for Clearwater's Barclay, or Scenic Hudson, another group that favors dredging.

"They are absolutely not sincere," Ruggi contends. "And I say that because they refuse to address the science of this project. I tried to sort this out in my mind. And I've come to the conclusion that they are not an environmental group. They are a special-interest group, because their only focus is the Hudson River. An environmental group must be equally concerned with the water, the land and the air."

While the river was being dredged, Ruggi explains, airborne PCBs would escape. The same would be true at a landfill, until it was capped. "You cannot say that establishing a toxic waste dump, which will be open to the air for probably two summers, is better," she continues. "All they say is get them out of the river."

Ironically, Ruggi thinks some good has come of the new increase in PCB levels. Although the environment has suffered another blow, she says, it's good to know where the problem is coming from.

It seems that during the siting board hearings, there were always some odd PCBs turning up in the tests that didn't show the same amount of "weathering" as most of those in the river. One theory was that the PCBs were entering the Hudson from sources other than GE, through sewers and storm drains. But no one seems to have thought about the problem lurking under the old Hudson Falls plant.

At least Ruggi and Barclay agree on one point. "My suspicion," says Ruggi, "is that this has been (the source) all along."

Biodegradation "may have tremendous potential as a cleanup technology," says Barclay. "If you take the PCBs and isolate them in some kind of containment setting. But that should not be confused with GE's contention that if you just leave it in the river it will take care of itself."

GE spokesman Batty confirms that the company believes the chemicals will eventually decompose. But true elimination of the chemical has yet to be accomplished in any natural setting.

Argues Barclay: "In the lab, you can get bacteria to partially break down some PCBs. That's where the science ends. All the rest of it is just GE PR."

And Barclay says cleanup advocates absolutely are concerned about creating a hazardous waste landfill: "It's not an ideal situation regardless of where it's sited. But you have to put it in perspective. They already have a toxic dump. And it happens to be the Hudson River. There are no ways to prevent that toxic waste from spreading down the river. It's completely uncontrolled."

The alternative is a modern landfill that's properly lined, monitored and capped. It's the "lesser of two evils," Barclay says.

And the activist thinks the EPA will eventually decide to dredge. The federal agency has already tested the technology in the Sheboygan River in Wisconsin and New Bedford Harbor in Massachusetts, where no measurable PCBs were detected afterward, according to Barclay.

The weekend trip down the Hudson snakes past long, lazy stretches of wild banks, dairy and sod farms, and charming country homes. The canoes pass through six lovingly maintained locks, part of the Champlain Canal, built between 1916 and 1919. The locks help get around several waterfalls, and the canal uses the Hudson until it goes inland at Fort Edward.

Around every bend, the paddlers expect to see Huck Finn and his friend Jim, two fugitives floating to an imaginary and elusive freedom. Several kids are out ignoring the state's fishing ban—but it's the thought that this beautiful, but polluted, river has in some measure been taken away from us that lingers.

There must be thousands of youngsters growing up along the Hudson who should be spending hours at her side, tossing hooks and lines in the water, learning lessons of life and nature, as kids have for eons. But they can't.

That loss is one of New York's great calamities. How long will it be until her beauty no longer hides her toxic tragedy?