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Great Lakes cleanup: Mixed picture

By MARGOT BORNHOWER

MILWAUKEE, Wis. — The Great Lakes, North America's largest freshwater reservoir and the cradle of America's industrial revolution, are slowly recovering from decades of environmental abuse.

However, while industries and cities have spent billions of dollars cleaning up the chemical and sewage wastes they pour into the lakes, numerous problems remain. Fish are poisoned by mercury, pesticides, PCBs and other dangerous chemicals. Polluting water in Lake Superior contains asbestos, a possible cancer-causing agent, and some beaches have been closed because of sewage bacteria.

After a four-day tour around the lakes, Russell Train, the administrator of the Environmental Protection Agency, said recently: "In five years, we've come a long way toward cleaning up the Great Lakes. Transgressions are being brought to bear, and there are real success stories. But it is a very mixed picture. You can't cure the ill of 100 years overnight."

Problems Ailing

The years ago, sewage-polluted lakesides across the country during the "death" of Lake Erie. The 13,000-year-old lake has suffered from a variety of ailing processes — called "eutrophication" — which threatened to turn it into a swamp, and it became a national symbol of environmental destruction, sparking the fledgling ecology movement.

Cities around the lake, such as Cleveland, Detroit and Buffalo, were pouring untreated sewage and phosphorus into its waters. Phosphorus, a pervasive nutrient contained in food, insecticides, detergents and fertilizers, stimulates underwater plant growth — which, in turn, depletes oxygen necessary for fish to survive.

Today, the dead, oxygen-depleted areas — which once covered 60 per cent of the lake bottom — has begun to recede. However, Lake Ontario also is suffering from eutrophication and has not improved since 1967.

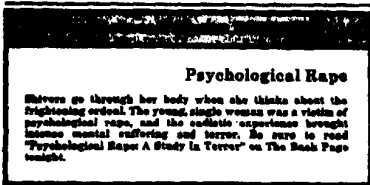
In the last five years, the United States has undertaken one of the largest public works programs in its history to build sewage treatment plants around the nation. Of the 116 billion allocated, about \$1 billion is to be spent in the Great Lakes region by December, 1977.

Today, about 60 per cent of the sewage produced by American living along the lakes receives adequate treatment. On the Canadian side, or per cent of the population is served by modern treatment plants.

Border Treaties

The lag, produced in part by federal grant tied paper, laid contractor bidding requirements and the other financial problems, has produced some tension between Canada and the United States. The two countries signed a treaty in 1973 stipulating a joint cleanup plan.

Under amendments passed in 1973 to the Federal Water Pollution Control



Psychological Rape

Shivers go through her body when she thinks about the frightening ordeal. The young, single woman was a victim of psychological rape, and the sadistic experience brought intense mental suffering and terror. He says to read "Psychological Rape: A Study in Terror" on The Book Page tonight.

Act, the EPA has authority to press money for sewer plants and to require industry to restrict discharges.

In 1972, it was thought that new sewage plants could clean up the phosphorus that was killing the lakes — although environmentalists said a total ban on phosphorus in detergents was needed.

Last week, EPA Administrator Train said the treatment approach had failed. "Even as we get our sewage treatment plants up, we're finding they don't give us adequate phosphorus reduction," he said.

"I don't see any answer to the problem short of a massive limitation on phosphorus detergents in the Great Lakes area," he said. The EPA will encourage states around the lake to meet restrictions — so far, only Indiana, New York and Minnesota have strict phosphorus laws.

Although adequate sewage treatment facilities in Great Lakes cities will not be ready until 1981 at the earliest, industry is well on its way to complying with clean water regulations by next year.

As a lifeline to industries' efforts, Train issued a hard but to use Minnesota Co.'s phosphorus plant in Trenton, Minn., and Republic Steel's plant Cleveland still.

Minnesota's products appear in such familiar items as Coca-Cola. East aluminum, Calumet tankers and this detergent. In the late 1960s, the plant, which is the largest phosphorus operation in the world, was dumping 1,600 pounds of phosphorus wastes a day into the Detroit River. Today, after \$160,000 worth of in-plant treatment facilities, the discharge is 30 pounds a day.

Until recently, Republic's largest steel mill discharged oil, iron, rust, aluminum, ammonia and cyanide in 70 million gallons of water a day. A few years ago, the Cuyahoga River, which empties into Lake Erie, became as dirty from steel and chemical companies' discharges that it caught fire. After spending \$100 million for water treatment facilities, Republic now discharges wastes that are cleaner than the water it takes in, studies show.

While most of the 400 industrial dischargers along the Great Lakes have agreed, often reluctantly, to comply

with the water pollution control laws, 17 plants, including four owned by U.S. Steel, are violating the EPA's rules.

Republic Steel and Arcon, owners of Reserve Mining in Silver Bay, Minn., are locked in conflict with the federal government over the company's removal of Lake Superior. Reserve Mining has discharged 37,000 tons of taconite tailings daily for 11 years, contaminating the drinking water of Duluth with asbestos fibers. A possible carcinogen (cancer-causing agent).

Although it may recently have become a focus of environmental action, "We're discussing new problems that we didn't have in mind when we started to clean up the lakes in 1972," Train said.

"The only solution we have to PCBs and other chemicals is legislation to stop them before they leave the laboratory. But until Congress passes hard enforcement legislation, we have no effective hands on them," he added.

PCBs (polychlorinated biphenyls) are a pervasive, man-made chemical found in transformers, paints, paper, plastics, refrigerators.

PCBs are known to cause birth defects and illness in humans, and they have been found in fish in all five of the Great Lakes.

Packing Industry Bait

Although Minnesota, the sole manufacturer of PCBs, has voluntarily restricted their production, PCB levels do not appear to be declining in the Great Lakes. Salmon, trout, catfish and other fish have been found to contain dangerous quantities, leading to warnings from some health experts and a severe curbing of the lake's commercial fishing industry.

At a meeting last week of the International Joint Commission, which oversees U.S.-Canadian water quality, scientists revealed the presence of a suspected cancer-causing chemical, in fish and herring gull eggs in Lake Ontario.

However, the pesticide dieldrin and heavy metals such as lead, zinc and nickel also are found in lake fish in hazardous concentrations.

"Lately, it's been the toxic material of the month," said EPA Regional Administrator Gerald Rasmussen. "It's

discovering in one billion of dollars spent on cleaning up sewage and to find a new chemical which you don't know how to treat."

Recent research has revealed that restricting industrial and municipal discharges is not enough. A substantial amount of water pollution is caused by airborne substances of undetermined origin. In the case of Lake Superior, it comes from as far away as St. Louis.

Phosphorus fertilizers blown off the land where farmers have spread them, PCBs are transported or evaporate into the atmosphere. Lead floats from automobile exhaust pipes into the lake waters.

Phosphorus from agricultural runoff is considered today a bigger problem than it once was, and a problem that cannot be treated so easily with technology as sewage disposal. The EPA is undertaking educational programs with the Agriculture Department to teach farmers and to overfertilize, plant too near rivers or forests in the fall before the snow melts and erode chemicals into the rivers.

Almost half of the phosphorus loading — and consequent oxygen depletion — at Lake Erie comes from agriculture, rather than from industry. The Maumee River basin near Toledo is especially polluted from agriculture. Urban runoff — from dumpsites, septic or basement drains — also damages the lakes.

All the sewage problems will not be solved even when the \$1 billion worth of plants are built. Most cities have combined sewer systems, so that every time it rains, water rushes down the streets into the sewer system and overflows the treatment plant. The overflowed plants then discharge raw sewage into the lakes and rivers.

The EPA estimates it would cost an additional \$5 billion to convert combined sewer overflow problems in the Great Lakes area.

Another tough problem is where to dispose of the accumulating tons of sludge, the lumpy-looking residue left over from industrial and city treatment plants. Burning sludge causes air pollution, burying it runs up valuable land and risks seepage into ground water and rivers.

On his trip, EPA Administrator Train visited two Great Lakes facilities to publicize innovative sewage programs.

Milwaukee's Jones Island plant, which serves 1.1 million people, turns sludge into a coffee-colored, odorless waste fertilizer. It uses up valuable land and sells it on the open market.

In Monroeville, Minn., the county sewage treatment system, the wastes of 125,000 people, a large amount of sludge is used to plant corn and several chemical plants to irrigate a 15,000-acre farm. Sandy and clayey sludge from a nearby river is sold for planted areas, and purifies the wastewater, which drains into its system and into Lake Superior. The corn is tested for potentially dangerous chemicals.