

# Cleveland

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"pollution in Lake Erie and many of its tributaries causes significant damage to recreation, commercial fishing, sport fishing navigation, water supply, and esthetic values."

The most dramatic evidence of damage is shown by the dwindling supply of desirable fish, which the scientists blame on pollution. Blue pike production was down from 6,855,000 pounds worth \$1,316,000 in 1956 to 200 pounds worth \$120 in 1963. The walleye catch was down from 5,035,000 pounds worth \$1,357,000 in 1957 to 433,200 pounds worth \$186,000 in 1962, according to the U.S. Bureau of Commercial Fisheries.

In Ohio, pollution abatement officials have chosen to deal with polluters by gentle persuasion. No one can deny that some progress has been made, but the rivers and lakes are pointed testimony to the fact it has not been nearly enough. Within the state, the Maumee, Sandusky, Black, Rocky and Cuyahoga Rivers have all been tagged "grossly polluted" after scientific investigation. Any citizen can make the same determination on the dirtied waters simply by looking and smelling.

The public uproar over pollution already has had its effect on the Ohio Water Pollution Control Board, which issues permits to industries and municipalities to discharge wastes into public waters. For the first time in the board's thirteen-year history, Cleveland's three steel companies were called to appear

before it in June to tell of their abatement plans. They promised to end by 1969 the discharge of pickling acid into the Cuyahoga River.

The Ohio Board has exerted its greatest pressures on the city of Cleveland. A \$300,000 city study is now underway to devise a master plan for pollution control in Cleveland. The problems are basic: An overloaded and antiquated combined sewer system, one plant that gives 32,000,000 gallons of sewage each day only primary or partial treatment and two secondary treatment plants that will have to increase removal of phosphates to meet the U.S. five-state recommendations.

THESE problems are not peculiar to Cleveland. They exist in every major Lake Erie city. The answers will call for expenditure of millions of dollars to improve municipal waste treatment. Millions more will have to be spent by industry to treat its own wastes. Already the mayor of Cleveland and governor of Ohio have called for more financial help from Washington.

No one knows yet what the eventual cost will be. But no matter what the final bill is, it will have to be paid. No longer can we countenance the pouring of municipal and industrial filth into our precious waterways. If we are to assure that future generations will be able to enjoy the esthetic and economic advantages of this invaluable heritage, it will be up to the present generation to end its wanton destruction. The alternative would spell disaster for not only the Lake Erie states but for the rest of the nation as well. —LOUIS B. SELTZER.

## 3. Los Angeles: Second-Hand Water

IN A SUBURB of San Diego called Santee, children now swim in lakes filled with reclaimed sewage. The lakes are part of a remarkable water reclamation experiment that in a sense epitomizes Southern California's relatively enlightened approach to the water problem. It is an approach worth examining, for while some water-rich parts of the nation this year were embroiled in desperate shortages, arid Southern California not only escaped that sort of ordeal but also has managed to ward off many of the East's water pollution problems.

Paradoxically, the Santee case is an example of what might be called deliberate pollution. The purpose of the experiment was to find out whether it would be possible to purify and reuse ordinary sewage to create a chain of small artificial lakes. Such an achievement would clearly be of benefit to a

place like Santee which, like so many communities in Southern California, must bring in its water from great distances, and must also go to great expense to dispose of its sewage. Santee gets most of its water from the Colorado River.

After extensive research and construction of a plant to treat the effluent, Santee's first lake was opened in 1961. Cautious health officials, however, barred swimming or fishing. After extensive tests, fishing was permitted but no one was allowed to take the fish home. Finally, last summer, scientists agreed that the lakes were sufficiently safe to permit normal fishing and swimming, and the children took to them with enthusiasm.

The Santee experiment has not gone unnoticed by its massive neighbor to the north. Water officials in Los Angeles have started work on a similar

project, and they hope to open their first recreation lakes within two years. As in Santee, the sewage water will be chemically treated, then injected underground to permit natural filtration by the soil.

Of all the cities in Southern California, Los Angeles obviously has the worst water problem. The city brings in most of its water from sources hundreds of miles to the east, and it has to fight for it. For generations, California has waged a bitter battle with its neighboring states, especially Arizona and Colorado, over water resources, and the fight will continue.

Though largely dependent on other states for water, however, Southern California officials are also exploring resources within their area. Next summer voters will act on a bond issue that would provide \$850,000,000 for the construction of a vast tunnel and pipeline system to distribute water from Northern California to the arid southern sections. Studies also are afoot to build what would become the world's largest sea water desalinization plant—a \$300,000,000 nuclear-powered operation that could supply 150,000,000 gallons daily, enough perhaps for a population of 750,000. In addition, millions of gallons of waste water and sewage each day are being purified and channeled underground, where it mixes with natural water and filters up into wells.

In addition to obtaining water, Southern California has also been highly successful in protecting its extensive beaches from the threat of pollution. To be sure, the public had to learn about the dangers of pollution the hard way. As recently as fifteen years ago several major beaches in Southern California were closed as a result of pollution arising from faulty sewage disposal. The pollution stemmed not only from inadequate treatment of effluent but also from massive leaks in the pipeline system carrying effluent into the ocean. In recent years treatment has been vastly improved and the sewage pipelines have been replaced and extended in some areas as far as five miles out to sea.

Water officials in this area, with all their achievements, were badly jarred recently by the bizarre incident in Riverside in which some 18,000 people were stricken with severe digestive disorders. After considerable investigation it was concluded that the disorders were caused by the water supply—the nation's biggest water-borne epidemic in twenty-five years. Riverside gets most of its water from thirty deep wells that produce water so pure that the city does not see fit to chlorinate it. To this date no one knows for sure how the disease-carrying organisms, salmonella typhimurium, penetrated the water sup-

ply, but some theorize that a sewage leak will eventually emerge as the cause. Not all of Riverside's homes are connected to the city sewage system.

**S**OUTHERN California has never had to worry much about pollution of its rivers and streams for the simple reason that it has so few of them. Lake Arrowhead and Big Bear have traditionally been guarded with zealous attention by state officials. On the other hand, Lake Tahoe to the north, some 200 miles from San Francisco, has become the victim of appalling pollution. Once renowned for its pure azure water, Lake Tahoe today is rapidly losing its extraordinary clarity as its seventy-mile shoreline becomes lined with hotels and gambling casinos.

In an effort to save Lake Tahoe, California and Nevada recently initiated a cooperative effort to build a new sewage treatment plant capable of refining municipal waste into water of virtually drinkable quality. This effluent will then be pumped out of the Tahoe basin into adjacent Nevada—perhaps the first case of interstate “export” of treated sewage. The experiment is being underwritten in part by the U.S. Public Health Service, which is interested in its applicability to other parts of the country.

Despite this program, however, some skeptics fear that Tahoe, once ranked with Oregon's Crater Lake and Lake Baikal in the Soviet Union for its remarkable purity, will eventually be transformed into just another muddy basin.

—PETER BART.

Consider, first, sewage.

“Most of the counties of Florida,” says Robert Ingle, director of research for the state Board of Conservation, “have some pollution from industrial waste or sewage. I know of no community on the coast, including Miami, that has an adequate treatment plant.”

Twenty years ago, when Florida's population was not yet 2,000,000, treatment plants numbered fifty; a year ago, with the population at 5,500,000, they numbered 1,000. A dozen municipalities still discharge untreated sewage into fresh-water streams. The inland condition is not much better than the coastal.

Dade County (principal city: Miami) does not have a county-wide sewage system. Fifty-five per cent of Dade's homes have septic tanks, an equally grave danger, since drainage from them may poison underground waters. Broward County (principal city: Fort Lauderdale) has 100,000 septic tanks, and some areas are nearing the saturation point from seepage. Broward's sixty treatment plants serve only 36 per cent of its people. The sewage is 95 per cent treated; the other five per cent contains chemicals and hepatitis and dysentery germs. In few of Broward's thousand miles of inland waterways may one swim in safety.

As to industrial chemicals and debris, a single example may be cited. On the shore of Florida's panhandle the Fenholloway River empties into the Gulf of Mexico. Once it was a clear and beautiful stream, but twenty years ago Taylor County, through which it passes, induced the state legislature to declare it an industrial river. Now it is known as Black Fen. It has been made so by waste from a cellulose factory.

Fertilizers and insecticides, some containing harmful chemicals, reach bodies of fresh water in rain runoffs. Citrus waste in some areas is dumped into lakes,

## 4. Miami: Too Much Too Soon

**N**ATURE WAS bounteous in providing Florida with fresh water. The state has 30,000 named lakes, the largest of which, Okeechobee, measuring thirty-five miles each way, is a natural reservoir. There are several rivers of size, and numerous smaller ones. Of seventeen first-magnitude springs, one is Rainbow, near Ocala, a city about a fifth of the way down the center of the peninsula. About Rainbow, John Pennekamp, associate editor of the *Miami Herald*, has written: “[It] gushes forth five times as much fresh water daily as Miami uses: enough to supply all the industries and municipalities of the state or the drinking requirements of all the people of the world.”

And Rainbow is uncontrolled.

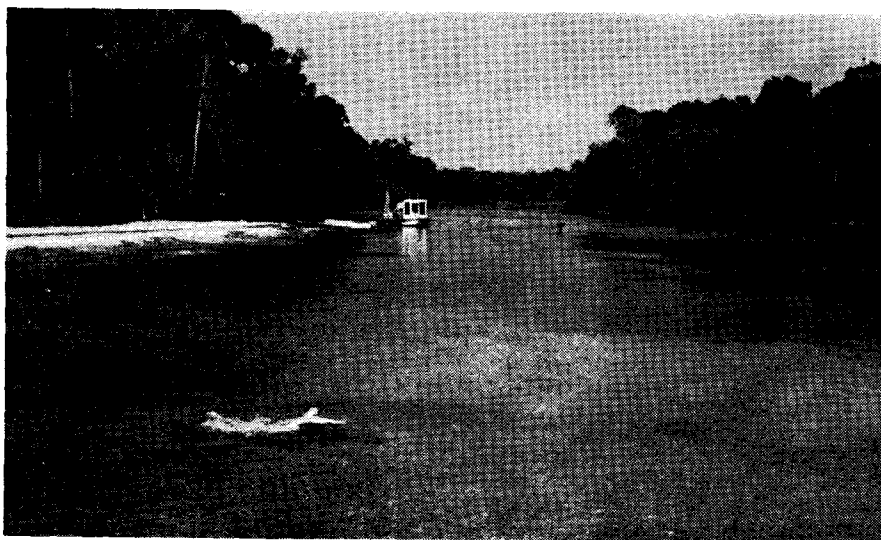
Beneath Florida's surface are two massive water deposits known as aquifers. Powered wells reaching down as little as twenty feet bring up potable water from the shallower Biscayne Aquifer, which serves southeastern Florida. Drilling into the deeper Floridan Aquifer produces artesian, or “self-powered,” wells. Near Ocala, artesian water can be struck at seventy-five feet, near Miami at 1,000 feet. The Floridan water is sweet at the lesser depths, salty at the greater. This aquifer's depth is as much as 3,400 feet at Miami, which is eight feet above sea level; Ocala is at 300 feet. The gradient causes the artesian flow. The Biscayne Aquifer is recharged by rainfall and a flood control system, the Floridan Aquifer mainly by rainfall in the state's central highlands.

Florida has thousands of artesian wells. Lee County alone, on the Gulf coast, has a thousand such wells. A geologist estimates that the uncontrolled ones squander enough water daily to supply Fort Myers's 22,500 population

for seventy-seven days. Less than five days' waste could keep the city in water for a year.

To the supply aspect of Florida's water problem only one more fact need be added: the state's average annual rainfall of approximately 57 inches is twice the national average.

In view of all this abundance, one might ask: why worry? The fact is that Floridians do not worry—not enough anyhow—about what is happening to their water supply. Besides the wanton waste, many fresh water sources have been polluted, are being polluted or are in danger of becoming polluted. Pollution factors are as follows, not in order of importance: sewage, industrial chemicals and debris, fertilizers, pesticides and insecticides, citrus waste, boats, detergents, salt.



—Florida State News Bureau.

Alexander Springs, in Ocala National Forest  
—one of seventeen first-magnitude springs.