

By Michael Wentzel and Michael Shultz.

The River You drink - IV

More People, More Homes form Noose of Pollution

Protecting the waters of the Gunpowder River system from the many threats of pollution throughout the basin is an increasingly complex battle involving several governmental jurisdictions. This is the fourth installment in a five-part series by Michael Wentzl and Michael Shultz about the Gunpowder River.

Every day since May, 1914, the city of Baltimore has taken millions of gallons of water from the Big Gunpowder falls. As with a property owner who has the right to use his backyard, the city has rights to all the water in this stream that runs so freely through rolling hills and heavy forests. But times have changed since the first decade of the Twentieth Century when the city of Baltimore used its power to get the rights to Big Gunpowder's water from the General Assembly.

The city is no longer the rich relative telling its once poor, politically naive rural cousins what to do. It owns only 6 percent of the land of the 303 square miles in the Big Gunpowder drainage area, a measuring stick that makes it clear that the city alone cannot protect the incredible supply.

That investment faces more threats each day. The chemicals swept by rain from the land within the watershed feed algae in Loch Raven Reservoir that cost thousands of dollars to cleanse from reservoir water. That same algae could spread enough to choke the reservoir.

Sediment sifts into the streams and tributaries of the whole Gunpowder River basin, minutely lessening its flow and carrying the nutrients that feed algae. The failure of several thousand septic systems that serve homes along the Big and Little Gunpowder Falls and the Gunpowder River spew bacteria into the water. And the increasing demand for homes and apartments throughout the basin area means that today's problems will be magnified tomorrow by more pollution from more construction and more people.

There is a mass of people, experimental projects, technical plans and, depending on your point of view, strong and weak legislation that form a shield for Big Gunpowder's water. The system is so complex that it is impossible to tell if that shield will work.

The first pretty green algae bloom found its way into the headwaters of Loch Raven Reservoir near Warren Road Bridge in the summer of 1971. The *Chlorella*, as this brand of plant growth is called, extended into Western Run, one of the major tributaries of the reservoir. By the summer of 1973, the green algae were causing real problems in the Montebello filtration system. The summer of 1974 was worse, and in 1975 and 1976, a denser, blue-green algae took over.

The Montebello plants supply two-thirds of the fresh drinking water to 1.5 million customers in a 215 square-mile area that includes the city, much of Baltimore county, and parts of Carroll, Howard and Anne Arundel counties. These algae blooms change the character of the reservoir water, making it more difficult and more costly to treat. There is a coloration that can cause a thirsty person, at the least, to hesitate. The alkaline qualities of the water increase, and there can be a musty taste and swampy odor.

No health crisis exists yet, at least nothing to compare to the blooms in Lake Erie. These blooms were several feet thick and the gases caused by their decay could strip the paint from summer homes on the lake's shore.

There is a money factor. The cost of the additional chemical measures needed to remove algae from the water has averaged \$60,000 a year since 1973, a cost passed on to the consumer. And, these chemical costs increase annually as does the added strain on the filtration system. The effect on the reservoir - which truly is a living system - is unpredictable as the expanding blooms steal oxygen from the water, cut off sunlight and clog the flow with decay.

Richard Kretzschmar is the city's water division chief, and if he had his way, there would be strict limits on development in the watershed area and no sewage would be dumped into the Big Gunpowder. The reason is that Mr. Kretzschmar is haunted by chemicals - the phosphorus and other nutrients that flow in to the Big Gunpowder and ultimately into Loch Raven, feeding the algae. A great debate goes on over who is the real culprit in this chemical assault from what is known as non-point pollution. The phosphorus and nitrates can come from fertilizer, from sewage treatment plants and from water running off the land that collects animal waste and other organic materials.

A federal study conducted in 1974 showed that 30 percent of the phosphorus reaching Loch Raven came from sewage treatment plants at Manchester, and Hampstead in Carroll county. The rest presumably comes from agricultural and grass runoff. Mr. Kretzschmar says development is the villain, the apartment and housing developments that necessitate treatment plants and the runoff from their lawns and driveways. "The significant thing to look at is that Loch Raven has been around 60 years, and until recently we never had algae problems," he said. "Development is what brought it on. New York city had excellent water quality until development reached into the outlying areas where these reservoirs are located. Runoff from the new roads and the new developments has offset the improved farming methods."

The treatment plants at Manchester and Hampstead, two of the five public plants in the basin, will have upgraded treatment methods to remove more phosphorus by this summer, when the blooms begin. But the city water chief would like to see all sewage diverted away from the Big Gunpowder. "Even if we ignore the cost of advanced treatment methods, these methods still provide nutrients to the stream." Mr. Kretzschmar said. "The whole problem of development in the watershed will have to be faced someday."

Wayne McGinnis, of White Hall, is 100 percent farmer. He is proud, hard working and forward looking in his methods. There is a bumper sticker on his car that says, "Agriculture is serving you three times a day," just to remind you how he feels. Wayne McGinnis, a massive 6 foot 7 former University of Maryland and basketball center, is angered by accusations that run-off from farms provides the nutrients that clog the city's water with Algae.

He lives with his wife and three children in a stone house built in the sight of a good, clean spring and farms 540 acres raising corn and cattle for beef. Many of the springs that rise on his southern Baltimore county farm ultimately find the Little Gunpowder Falls. Under a table in his kitchen are the careful maps of his farm that describe the rich soils and advise him on the land's best uses and on good sediment control. Mr. McGinnis is a firm believer in good farm management. He's an evangelizer of good farming techniques as a supervisor in the Baltimore County Soil Conservation District.

"I am concerned about the amount of false information many governmental and non-farming people have about pollution," he said. "The farmers are not the sole polluters. Everyone is responsible. It's not just the cow on my stream, it's the apartment houses, parking lot too." Mr. McGinnis tells a history of the farm his grandfather bought and the changing techniques of farming. His grandfather planted a 20 acre field with straight rows of corn and had erosion problems. He figures that the land has lost as much as 6 inches of topsoil since his grandfather's day. His father learned contour farming methods and that helped stop some erosion. The major evolution of this farming generalization is the phasing out of the farmer's basic moldboard plow through no-till or minimalist-tilling farming. The labor and energy that go into plowing are gone, replaced by a method that plants the seed into a mulch of corn stalks, for example. This method, with the use of herbicides, provides an equally abundant crop and greatly decreases soil erosion.

In Baltimore county, about 75 percent of the corn is raised by this no-till method. The technology is different, but farmers are available to teach it. Mr. McGinnis said no-till farming along with other erosion projects, could eliminate much of the farmer's contribution of nutrients to Gunpowder's water. "Farmers were conservationists long before it was popular," Mr. McGinnis said. "Farmers know their land must be preserved. I'm not in favor of a no-development policy, and I think we have to move toward better farm policy and better land-use policy."

Gould Charsee is the state-contracted planner who has been working for months putting together a water quality management plan for the gunpowder River basin. He is a meticulous man who prefers hiking the Gunpowder to listing its ills. The basin study includes a broad assortment of scientific inquiry, natural history and trivia. The lengthy report, which often seems like an exercise in tedium, is required for every basin in the state before the federal government will fund many projects. The report offers one way, even if it is complex, to exert pressure to clean up the streams. The report, now at the printers, should be available at Harford and Baltimore county libraries soon. Public hearings on the plan have not been set.

Gould Charsee sees failing septic systems as a major threat to the basin and a threat to the life of the stream - but often a more immediate threat to the health of people, as bacteria-ridden water backs up or flows free.

About a third of the Gunpowder basin's 80,000 people have on-site septic systems, and many of those systems are failing. There is a list in the basin report that outlines the toll. Severe problems are seen in Carney, Perry Hall and White Marsh, and the list indicates that nearly 100 percent of the 1,100 properties in Bowleys Quarters and Seneca Park have septic failures. The report says there are failures in the Cockeysville and Hampton areas that are of concern because of the nearness to Loch Raven.

Most of these areas are within reach of the Baltimore county sewerage system, but it is difficult to predict when the hookups will begin. The Perry Hall area, the Wildcat Branch watershed, where there are major septic failures, and many other Little Gunpowder areas, however, have not received planning attention, the report says. Then there is the Joppatowne plant, which services the community built by Levitt Corporation in Harford county more than a decade ago. The population is about 8,600 in this planned town of 1,900 homes and 550 apartments. The sewage treatment plant, on Little Gunpowder Falls, recently has been taken over by Maryland Environmental Service after a history of erratic treatment performance.

There were frequent high-bacteria discharges and high solid counts, and the plant has contributed to the problems in the estuary. The report says continued growth without sewers is compounded by the added runoff created by construction. But, the circle isn't broken by sewers, because treated sewage can load the stream with phosphorous. Still, the basin study says, the water quality remains good. But it is far from settled.

The Baltimore County council has a lot to do with what happens to the Big Gunpowder's water. These council members and the county administration make the laws that decide future land use in the watershed area. In the past, the city might have had the power to force, or at least cajole, the laws the city wished. But more recently, "We had to go to them {Baltimore county}," Brent A. Hartley, city watershed manager, said. He was on a number of committees with city and county representatives that discussed phosphorus-loading, land use, sediment control and a number of other standard topics that revolve from water.

"We didn't really have enough protection for something that serves one and a half million people," Mr. Hartley said. "We got more than we expected, and we were pleasantly surprised. I don't know if that legislation will improve matters, but it will prevent things from getting a lot worse a lot quicker. That legislation is really three complex packages - resource conservation, zoning, landowners can build only a limited number of homes on their land. This is aimed at preserving agricultural land. The land the city was concerned about, of course, is the land that borders its reservoirs and the Big Gunpowder and its tributaries.

The county partners, in the case of RC2 (agricultural) and RC1 (watershed) zones protecting these areas, recommended much stricter controls than the County Council passed. This protection diluted even further when, according to one count, in the middle of last year, owners of 48 tracts of land involving 3,429 acres in the watershed received zoning approval before the comprehensive zoning maps were changed.

This week, the county council approved changes to the development control act that farther affect the watershed zones. One amendment, by Councilman Clarence E. Ritter (R, 3d) allows additional subdividing for construction in these zones during an 18-month to 2-year study of growth. The county administration objected to this amendment, saying that agricultural and watershed lands are environmentally sensitive and that the control act was designed to protect them. A reply by Councilman Eugene L. Kibbe (R, 4th) runs against the city's plea for protection."he said, "RC4 is not environmental protection," he said," it's just watershed."

However, the County council has passed unanimously a new sediment control law that will toughen regulations for grading permits and silt runoff from developments as well as require the posting of a bond to insure the performance of these sediment regulations. It is not just rules, regulations and ordinances that work for the Gunpowder River system. There are people like Harry J. Sanders, a Harford county teacher. who leads annual hikes on the Little Gunpowder as well as annual efforts to clean the stream. Mr. Sanders, who speaks of the Little Gunpowder with the nostalgic little told childhood memories, headed a drive to move state dumps away from the stream and to bring discharges from factories in line with state law. The dumps were moved but he discharges are not always clean. "There are times when I walk this river that I could bet I was a kid again,"he said,"When I'm out here, I am a kid again."

There is Save Our Streams, a Baltimore county group that advocates adoption of a section of a river. The river's foster parents then should hike the banks of the adopted stream and report polluters to the proper officials and conduct voluntary clean-up.

"The Regional Planning Council, through the Baltimore county planning office, is conducting a federally financed version of this in what is called the 208 Program, a year-long attempt to figure out the pattern of non-point pollution along the entire stream. The RPC hopes to use the results of this plan to draw ways to control the elusive brand of pollution, which comes from runoff from farms, roads and housing developments.

Though similar studies have been conducted in other river basins and failed to accumulate results, the planners here are hopeful. In the city, Jerry A. Valcik, the creative, neatly-dressed water quality chief, speaks of clean water with undiluted affection. He wants to put a bubble machine in the algae-troubled areas of Loch Raven in an effort to provide oxygen and movement in the water to prevent algae growth.

Mr. Hartley, the city's watershed manager, is a burly man who has charge of the 17,580 acres in the city's water supply system. He's been manager for 3 years and has worked in the city water division for 29 years. "Naturally,"he said in his office at Liberty Reservoir, "we have a vital concern in any sources of pollution." Mr. Hartley can tell a lot of stories about the watershed. "There is the forestry program for more than 2,700 acres in the watershed that has planted 2,721,313 trees there since 1955. and the sawmill and logging program that has provided the city more than 18 million board feet of lumber in 20 years at a return to the city of more than \$2 million through use of lumber in city projects and sales.

There is the experimental tree study that is going on in the watershed to determine what configuration and type of trees best control erosion. Then there is the watershed's extensive recreation program, probably one of the largest in the nation. He has a slide show that includes these stories as well as a look at the water quality testing that goes on in 50 streams and the reservoirs. But, the story that tells best how the city would want its watershed treated is one about the ordinary-looking storage tank that now holds oil outside watershed. Hartley is proud of this one. "This tank didn't cost anyone any money, except maybe labor costs,"he said,"We found the tank floating in Loch Raven after Tropical Storm Agnes. We cleaned it and dried it out. Those railroad ties it's sitting on, we found them in the reservoir, too. We don't waste anything. We're careful."