

In other words, it doesn't appear that a great number of septic systems were leaking or failed, certainly not enough to cause the high level of contaminants at Alma.

Borrello is quick to point out that there is always some level of human waste in any body of water and that could represent a danger to those who use the river as recreation, but the results upstream in the townships were "insignificant."

Trouble is, the tests did not separate human from animal waste, still allowing those to raise the animal or human question - again.

"The animal population is the size of a large city," said Alma City Manager Phil Moore. "We are sick and tired of arguing if it's animal or human waste."

Alma gets about 20 percent of its water supply from the river.

Since neither the state or the federal government is taking a lead in this, Moore said the city is partnering with Borrello and the college to determine once and for all if the cause of the problem is human or animal waste.

Tests should begin in May.

Once the cause is determined, "it's easier to address the problem," Moore said.

For his part, Borrello said two things are known: there has been direct dumping of manure into the river. These acts have been observed. However, it's only been done by a small minority of the farms.

The second thing is that a vast majority of farmers obey all the rules and regulations on waste set down by the state, Borrello said.

Clearly however, it appears those rules may not be enough and the rules have to change.

And therein lies the biggest problem.

"There's no appetite in Lansing or Washington to address this head on," Moore said.

So, along with the city, the Healthy Pine River group is hoping to join forces with other river cities and community groups facing the same problem in Michigan to bring about that change.

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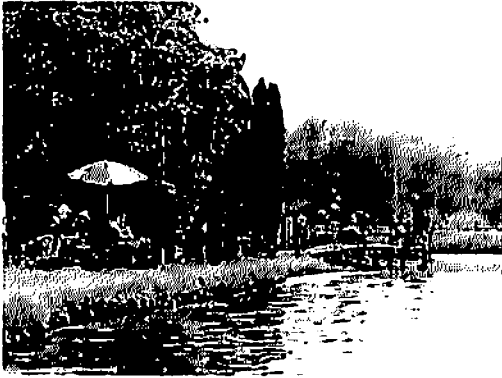
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## Tests continue on Pine River but no cure in sight

*By Linda Gittleman, The Morning Sun*

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That ol' Pine River may just keep rolling along, but it still continues to deteriorate.

Even since as recently as 2013, the river at Alma has gotten worse, said Gary Rayburn, organizer and chair of the Healthy Pine River organization, a community action group dedicated to fixing the problem.

Every now and then, said Rayburn, who lives on the river, he sees "stuff" floating down the Pine.

"I don't know if it's grass or manure," he said. "But every year, the

water gets dirtier."

The river has been tested, revealing high levels of E-Coli, along with very high levels of nutrients and antibiotics.

It's long been suspected that the river's contamination is coming from large animal farms or concentrated animal feeding operations.

But the question keeps being raised: is it animal waste or human waste?

Here's a look at some facts:

Gratiot County has more cows than people.

According to the last U.S. Department of Agriculture report, Gratiot has nearly 48,000 cows, while the human population is a little more than 42,000.

Pigs number more than 60,000.

Dairy cows each eat an average of 100 pounds of food a day, according to the University of Illinois, while beef cattle eat up to half that amount each.

Common sense might easily indicate that animal waste is the culprit, making its way into creeks, ditches and streams and ultimately the Pine, but the question is asked repeatedly: couldn't it be human waste?

To get to the bottom of the human or animal question, Alma College Geologist Murray Borrello and some of his students went upstream last fall to see if there was evidence of leaking or failed septic systems in the Riverdale, Sumner and Elwell areas.

Basically, they saw little difference and in some spots the river was healthier than where Honeyoye Creek empties into the Pine just outside of Alma.