

LAKES CONFERENCE

Solving septic pollution a matter of persuasion

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Contamination from failing septic tanks for roughly 50 years has been well-documented as a contributor of pollution in the Flathead Basin. The key to addressing the pervasive issue likely lies in proving to homeowners their system is failing.

“Collecting the science information is easy, but when you move into the social realm it gets more complicated,” said Mike Koopal, executive director of the Whitefish Lake Institute.

The implications for this issue, its challenges and potential solutions were at the center of a panel discussion Friday as the three-day Montana Lakes Conference wrapped up in Whitefish.

“We know that we have a problem on our landscape and it’s time to act rather than kicking the can down the road again,” Koopal added.

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SEPTIC

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Failing or improperly maintained septic tanks around Whitefish Lake and Flathead Lake have been long known to be causing contamination through septic leachate making its way into the groundwater and eventually into waterbodies. Wastewater contains high amounts of nutrients that can lead to harmful algae blooms in waterways, some of which are toxic. It also contains bacteria and pathogens that can be harmful.

More than one in six households in the United States use septic systems and roughly half of the households in Montana use septic systems, noted experts from the panel, pointing out that the issue of addressing failing systems goes beyond the Flathead Basin.

The challenge comes in Montana that homeowners are responsible for their own systems. But that's why educating homeowners regarding septic tank maintenance and the need for replacement is key, notes Sarah Halvorson, a geography professor at the University of Montana who is studying the social dimensions related to wastewater systems.

"We're putting the responsibility on homeowners to deal with wastewater, which can have an impact on our

collective resource that is a waterbody," she said. "That's why there needs to be some paradigm changes in thinking and how we move forward through education."

SEPTIC LEACHATE is the liquid waste that remains after the wastewater drains through septic solids. It contains elevated concentrations of bacteria from human waste, detergents and other household materials that are transported into groundwater.

Since the first study of Whitefish Lake roughly four decades ago by the U.S. Environmental Protection Agency to the most current data released by the Whitefish Lake Institute in 2012, studies have indicated a growing concern for human health and water quality on the lake.

More than half of the homes on Flathead Lake are on private septic fields. Septic contamination in the lake has been documented through several studies by the Flathead Biological Station.

Even properly installed and maintained septic systems have a life expectancy of between 15 and 30 years depending on site conditions. Flathead County as of 2020 had an estimated 30,000 septic tanks.

"Flathead County is the fastest growing county in the state," Koopal said. "We know that a large number of

those septic systems are between 30 and 40 years old. Even in good conditions a septic system only lasts between 25 and 30 years. With the rapid growth we're having we don't know what's going to happen."

Montana has no requirement to maintain or inspect septic tanks and has some of the lowest standards in the U.S., according to the Flathead Basin Commission, which combined with the Upper Columbia Conservation Commission earlier this year to form the new Western Montana Conservation Commission.

The Montana Department of Environmental Quality provides standards for the design of septic tanks, but local governments oversee installation. Because septic systems are nonpoint sources of pollution, DEQ deals with them through voluntary cooperation, said Andy Ulven, water quality planning bureau chief for the agency.

"There are some limitations that DEQ has for authority with septic systems," he said. "Septic systems follow low density development and that comes down to local government planning directing where that takes place."

Where DEQ and other state agencies, however, can play a role is in providing funding for connecting to centralized treatment systems, he noted.

ADDRESSING THE issue seems to center on convincing homeowners of the value of replacing failing septic tanks.

A previous attempt to get the Lion Mountain neighborhood that sits above Whitefish Lake to connect to the city's sewer system through annexation failed when the neighborhood pushed back because of the potential for increased property taxes. Research showed chronic signs of pollution in the lake where groundwater seeps into the lake.

A similar situation played out in Seeley Lake where Environmental Protection Agency testing has shown high levels of nitrates due to the density of aging septic systems. Grants were obtained to cover two-thirds of the cost but two ballot measures to implement a sewer system failed.

Opposition was tied to the argument of increased costs, noted panelists, but also with community feeling that by creating a septic system it would encourage more growth.

An environmental economist at the Flathead Lake Biological Station Nanette Nelson pointed to results from a focus group of homeowners in Whitefish and Bigfork showing that homeowners who knew their septic system was failing were highly motivated to replace the system. It wasn't enough for data to show septic contamination in a waterbody, homeowners had to know

it was specifically their system malfunctioning.

"Nobody wants smelly septic waste pooling up from their system," she said. "But the reason this is interesting is because it shows that if we have inspection programs that alert homeowners to potential failure rather than waiting, those inspection programs can help motivate homeowners to replace their septic systems."

What also swayed homeowners toward replacement was personal benefit, so it's important to focus on the personal benefit of replacement rather than just talking about how it helps the environment.

"We need to go behind the environmental impacts of septic systems and engage homeowners in how they benefit from replacement," Nelson said. "If our roof is leaking, we replace it, not because we want to but because it protects our investment. We need to engage homeowners to understand their septic system is part of that investment."

ONE SOLUTION for showing homeowners whether their septic system is functioning properly or not could come through further use of a synthetic DNA tracer. A study piloted by the Western Montana Conservation Commission used DNA tracers flushed into septic systems on Whitefish Lake and Lake

Mary Ronan — using what essentially amounts to barcodes to track the origination of the tracer and confirming the new technology can be used for lakes.

"That may be the way to track what's happening and demonstrate to homeowners that the leachate is coming from their system," Koopal said. "The issue with septic leachate is that because it's diffused into the lake there's a lot of finger-pointing when it comes to homeowners."

The conservation commission has also created a model of the physical risk of septic leachate on water resources across the basin. It takes into account the topography along with the age and density of systems to highlight areas in the basin that are the most susceptible to contamination. The interactive tool is aimed at providing information for the public and decision-makers.

"We want to get that data into the hands of the people that are making decisions and determining where the growth is occurring and how this data can factor into the process," said Emilie Henry, with the conservation commission. "It's also about getting into the community and educating folks about why this matters."

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