

BREAKING

Federica Marchionni out as CEO of Lands' End

http://host.madison.com/ws/news/local/environment/hidden-streambed-phosphorus-key-to-lake-cleanup-county-says/article_e9bf8eab-9d15-5997-be6d-07105cf78a7c.html

EDITOR'S PICK TOPICAL

Hidden streambed phosphorus key to lake cleanup, county says

STEVEN VERBURG sverborg@madison.com 3 hrs ago



DANE COUNTY

Buy Now

DNR water quality specialist Mike Sorge fights his way through muck while helping Dane County study conditions in Dorn Creek northwest of Lake Mendota.

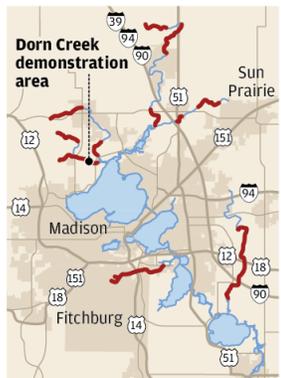
Millions of dollars have been spent to reduce the amount of nutrient-laden soil that runs off farm fields into Dane County waterways, where it creates masses of weeds, algae and bacteria.

Why then aren't the lakes getting cleaner? A growing body of research points to tons of fertilizer-rich muck that began piling up in stream beds long before recent conservation programs began.

Proposed Dane County streambed cleanup

County Executive Joe Parisi is proposing a \$12 million project to remove 870,000 pounds of phosphorus from 33 miles of streambed.

— Streambed to be cleaned



SOURCE: Dane County State Journal

A county study found that even if no additional nutrients washed off the farm fields — something nobody expects — stream bottoms by themselves for the next 60 years would ooze phosphorus into the lakes at levels exceeding the maximum now allowed under state law.

The findings spurred County Executive Joe Parisi to propose a \$12 million project to remove 870,000 pounds of phosphorus from 33 miles of waterways, a first step in dealing with so-called “legacy” nutrients that he hopes will become a statewide model.

“This is a breakthrough that we believe will allow us to achieve clean lakes in our lifetime instead of our grandchildren’s lifetime,” Parisi said.

Farm manure and fertilizer are the state’s most prevalent sources of lake and stream pollution. They have limited swimming, fishing and boating in hundreds of water bodies. And the list is growing.

Scientists have begun to question why there has been so little visible progress after decades of work aimed at keeping nutrients out of the water.

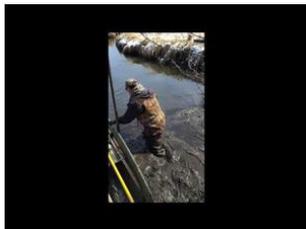
Enactment in 1972 of the federal Clean Water Act required states like Wisconsin to limit phosphorus pollution from factories, sewage plants and storm sewers.

Reductions were achieved, and now most nutrient pollution is delivered to lakes by rain and snow melt from barnyards and fields where manure and commercial fertilizers are spread. But for most farms, unlike industrial sources of phosphorus, runoff prevention is voluntary.

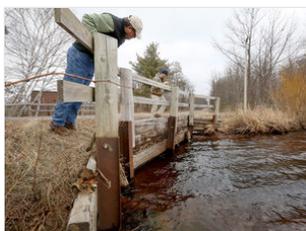
Dane County has been a leader in working with farmers to get government grants to help pay for roofs over barnyards to keep rain off, and planting of vegetation along stream banks to catch pollutants.

In recent years across the country, scientists have begun looking more closely at legacy phosphorus because measures preventing industrial pollution and farm runoff haven’t by themselves produced markedly cleaner water.

The U.S. Environmental Protection Agency said in a 2015 report that reducing industrial and farm sources alone will do little to stop unnatural algae blooms and tangles of weeds,



Measuring the muck in Dorn Creek 3 hrs ago



Fixes come slowly for growing list of impaired lakes and streams



20-year Yahara pact is state's biggest push to keep farm pollution out of lakes



State audit finds DNR ignoring own rules on water pollution



Troubled manure digester's new owner says new customers are key to future operation

especially in waterways without strong currents to carry sediments to another body of water.

But the EPA and the state Department of Natural Resources suggest dredging nutrient-laced sediments only after measures are in place to limit runoff so that new nutrient-rich sediment doesn't replace the old.

However, for places like Dane County, which has made significant efforts to reduce runoff and plans to continue them, dredging may be beneficial, said DNR spokeswoman Jennifer Sereno.

The DNR also cautioned in a 2015 memo that sediment removal can be costly and it has the potential to harm wildlife habitat.

But Dane County has calculated that dredging phosphorus from streams is 15 to 20 times less expensive pound-for-pound than the measures that are taken to prevent agricultural runoff.

And removal of sediment — which is more than 2 feet thick in some stream sections — is expected to expose the original gravel stream beds and allow regeneration of fish populations that are now absent, Parisi said.

Vacuum equipment

In the dredging project's pilot phase, county workers will wade into a 300-foot section of Dorn Creek northwest of Lake Mendota and use a hydraulic dredging system to vacuum up sediment, said county storm water engineer John Reimer.

The operation is scheduled to begin in October under a permit issued by the DNR. The aim is to remove 200 cubic yards of sediment estimated to hold 1,800 pounds of phosphorus, Reimer said.

The dredging and analysis of 50 core samples pulled from the creek and surrounding farm fields were paid for under a \$60,000 budget item approved two years ago.

Laboratory tests showed phosphorus in concentrations seven times the levels found in the fields, Reimer said. The nutrients in the sediment tended to rise toward the surface and leach into the water above, he said.

If this fall's dredging is successful, the county will seek permission to remove sediment from the rest of a 2.3-mile leg of Dorn Creek between highways M and Q.

The county has tentatively identified 11 sections of stream where sediment accumulation is substantial, Reimer said.

In addition to Dorn Creek, the county will investigate parts of the Yahara River north of Cherokee Marsh, as well as lengths of Token, Sixmile, Door and Nine Springs creeks.

Closer study of each place would be completed before work would begin, Reimer said. Measures to limit runoff from surrounding farms would need to be in place, and conditions for dredging, possibly including cooperation of nearby landowners, would be necessary, he said.

Parisi said he will ask the County Board to fund the four-year project as part of the budget he plans to announce on Thursday.

Proper disposal

Compared to mechanical dredging done with a backhoe, the hydraulic method the county will use is less damaging to stream banks and less likely to unearth pollutants and allow them to float downstream, said Jim Killian, a DNR water resources management specialist.

Dredging river beds to remove pollutants is nothing new. Since 2004, the state has dredged from 500,000 to 600,000 cubic yards a year from the bottom of the Fox River to remove the toxic industrial pollutant PCB, or polychlorinated biphenyl.

Killian said he wasn't aware of any previous project in Wisconsin aimed exclusively at dredging phosphorus from stream sediment.

Dane County removed sediment from the bottom of Stewart Lake about eight years ago to restore fish habitat and eliminate nutrients that caused algae blooms.

The county hasn't worked out details of what will be done with the stream sediments.

For the initial Dorn Creek project, the slurry will be pumped through a pipe to containers made of materials that will allow liquids to slowly leak out and soak into land owned by the

county.

A polymer will be added to sediment to bind solid particles together, said Mike Sorge, a DNR water quality engineer who has worked on the project.

The land is surrounded by sensitive wetlands, so the process will need to be watched carefully, Sorge said.

Reimer said care will be taken to ensure that nutrients in the sediment don't end up back in the water. It may be mixed with prairie or wetland plant seeds and used to restore former cropland that isn't already saturated with phosphorous, Reimer said.

Or it could be used as a fertilizer by a company that markets garden soil or by farmers whose fields need phosphorus, he said.

Steven Verburg | Wisconsin State Journal

Steven Verburg is a reporter covering politics with a focus on environmental issues for the Wisconsin State Journal.