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K-STATE RESEARCHERS FIND THAT POLLUTION OF FRESHWATER BY NITROGEN AND PHOSPHOROUS COSTS THE UNITED STATES AT LEAST \$4.3 BILLION ANNUALLY

MANHATTAN — Pollution by phosphorous and nitrogen isn't just bad for lakes, streams and other bodies of fresh water. According to researchers at Kansas State University, it's also bad for Americans' pocketbooks.

Freshwater pollution impacts individuals on a level as basic as how much they spend on bottled water, said Walter Dodds, professor of biology at K-State. If you worry about what's in the tap water, you might be shelling out more money for the bottled variety, he said.

If your municipal water plant has to spend more money to treat the water coming through your tap, your water bills will increase. If you own a house on a lake that is becoming increasingly polluted, your property values likely may drop. If that lake is a recreation destination, your local economy could take a hit, too.

"Monetary damages put environmental problems in terms that make policymakers and the public take notice," Dodds said.

He and the K-State researchers looked at U.S. Environmental Protection Agency data on nitrogen and phosphorous levels in bodies of water throughout the country. Nitrogen and phosphorous are nutrients that are applied to plants as nutrients.

Dodds said that the majority of this type of pollution is from nonpoint sources —that is it's not flowing into a lake or stream like sewage outflow coming from one pipe. Rather, the nitrogen and phosphorous are reaching the water from various points, such as, for example, runoff from row crop agriculture across the surrounding countryside.

The researchers calculated the money lost from that pollution by looking at factors like decreasing lakefront property values, the cost of treating drinking water and the revenue lost when fewer people take part in recreational activities like fishing or boating.

The researchers found that freshwater pollution by phosphorous and nitrogen costs government agencies, drinking water facilities and individual Americans at least \$4.3 billion annually. Of that, they calculated that \$44 million a year is spent just protecting aquatic species from nutrient pollution.

"We are providing underestimates," Dodds said. "Although our accounting of the degree of nutrient pollution in the nation is fairly accurate, the true costs of pollution are probably much greater than \$4.3 billion."

The research appears in the Nov. 12 online issue of Environmental Science and Technology. Co-authors include current K-State students Alyssa Riley, doctoral student in biology, Manhattan, Tyler Pilger, master's student in biology, Wichita, and Wes Bouska, master's student in biology, Brookings, S.D.; as well as Jeffrey Eitzmann, May 2008 master's graduate in biology; Kristen Pitts, August 2008 master's graduate in biology; Joshua Schloesser, August 2008 master's graduate in biology; and Darren Thornbrugh, December 2007 master's graduate in biology.

Dodds said he anticipates the research being used by policymakers because it documents the extent of the nutrient pollution problem in the United States and one facet of why it matters.

"Putting environmental problems in terms of dollars allows people to account for the actual costs of pollution," Dodds said.

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