

## John Peckenham: On a mission for safe water

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The recent news coverage of pharmaceuticals in drinking water, "What's in your water" (BDN, March 11), has caused many people to wonder what is in their drinking water. This is always a good question to ask, and most people in Maine will be comforted to know that the chance of finding pharmaceuticals in their water is very low. Maine is fortunate in that much drinking water comes from very well-protected sources, and the Maine Drinking Water program works with the 2,200 public water suppliers to ensure that the water that reaches your tap is high-quality.

The detection of pharmaceuticals in reservoirs, lakes and streams is a reminder that there are consequences to how we care for our health and appearance. No one anticipated this problem, but we can take steps to try to improve the situation. Researchers at the University of Maine are already leading the nation in new ways to understand and manage the presence of pharmaceuticals in water.

Many chemicals occur in very small amounts that are impossible to detect without very sensitive laboratory instruments. Research by professor Touradj Solouki in biomedical and environmental sciences improves our ability to identify pharmaceuticals and unknown chemicals that are present in complex mixtures. For example, he and his researchers have been able to enhance detection limits and measurement accuracy, setting new scientific standards for detecting the presence of such substances.

Hormones have been detected in wastewater that drains into the Penobscot River, and professor Greg Mayer has been studying how specific hormones might affect exposed fish. The dramatic decline of Atlantic salmon in North America has been attributed to a variety of potential factors, including contaminants in rivers. Professor Adria Elskus has been examining the potential effects on fish health of combined stressors such as blueberry pesticides, acidic water from acid-rain, and toxic aluminum that accompanies acidic water in Down East rivers. She is also investigating whether Penobscot River sediments contain toxic chemicals that could be released when the dams are removed, and she is developing nonlethal techniques for identifying polluted fish populations in Maine.

Benjamin Franklin coined this useful thought: "An ounce of prevention is worth a pound of cure." If we can get pharmaceuticals out of the waste stream, we will see fewer ecological and human exposure consequences. Professor Len Kaye, director of UMaine's Center on Aging, is leading a first-of-its-kind program to improve the stewardship of pharmaceuticals. Until recently, people were encouraged to flush old and unused drugs down the toilet. Little did we know that this practice was creating a new problem in our waters. Using a U.S. Environmental Protection Agency grant, the center has established a pharmaceuticals-return program, and it is managing a consortium pressing for new ways to curtail the storage or casual disposal of potentially dangerous medications.

Last August, the Maine Water Resources Research Institute helped sponsor a Portland conference on pharmaceuticals and personal care products, and this research group is now working with the New England Interstate Water Pollution Control Commission to develop and fund a research agenda to address this important issue.

The safety of our water supplies is critical to human health and our way of life. The people of Maine can be proud that UMaine scientists are on the leading edge of research and science-based activities aimed at assuring drinking water quality and safety.

*John Peckenham is the director of the Maine Water Resources Research Institute and a research scientist at the Sen. George J. Mitchell Center at the University of Maine.*

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