

BAD MEDICINE IN THE WATER

So many unused prescriptions are being flushed down the drain in the United States that researchers are finding evidence of major neurological damage in fish

By JULIET EILPERIN
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WASHINGTON — Academics, state officials and environmental advocates are starting to question whether massive amounts of discarded pharmaceuticals, which are often flushed down the drain, pose a threat to the nation's aquatic life and possibly to people.

In waterways from the Potomac to the Brazos River in Texas, researchers have found fish laden with estrogen and antidepressants, and many show evidence of major neurological or physiological changes.

No one has seen evidence of effects on human health, but a number are asking publicly why the federal government is not taking a more aggressive approach to what they see as a looming problem.

In October 2002, Maine's Department of Environmental Protection asked federal scientists to analyze water samples to determine to what extent prescription drugs had seeped into the state's waterways. Worried that discarded birth control pills, antidepressants and other drugs could affect the state's fishing industry and public health, the department's Ann Pistell hoped the federal Environmental Protection Agency's Northeast regional office could give her a speedy answer.

It was 2 1/2 years before she received a partial report identifying drugs in the water without a detailed explanation — it came in the past week — and she said she's still waiting for a full breakdown.

"We're sort of baffled and frustrated by the lack of a sample analysis," said Pistell, an environmental specialist. "We see this as an emerging issue. The more we find out, the more concerned we are."

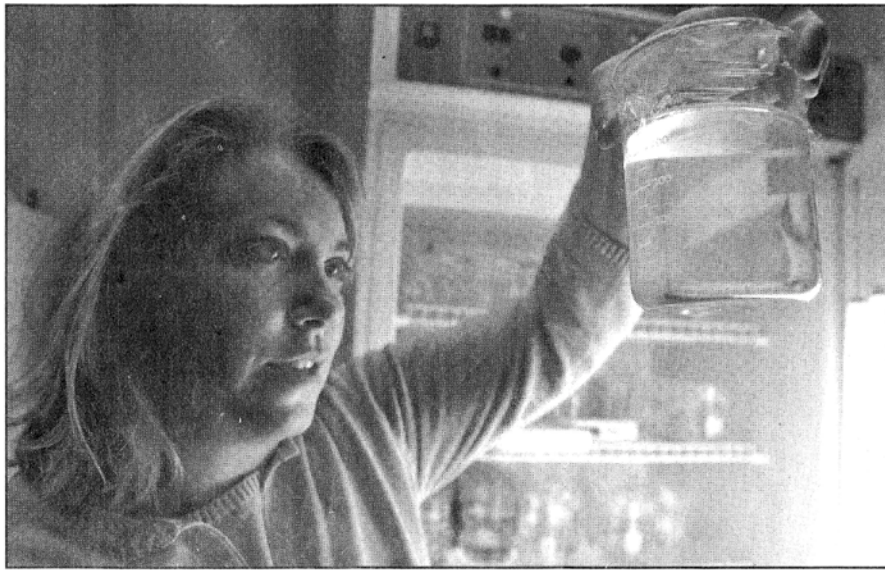
Some state officials have started organizing. Raoul Clarke of Florida's Department of Environmental Protection has worked with colleagues to establish a listserv where state and local officials can exchange information with concerned activists.

"There are many unanswered questions, but these things are showing up, and people are taking notice," Clarke said.

EPA officials say they are still gauging the seriousness of the threat. Technological advances in testing make it possible to detect very low levels of hormones and chemical compounds in waterways, they say, and it is unclear whether such levels harm animals or people.

Hal Zenick, who monitors health issues in the EPA's Office of Research and Development, said several agencies are working to determine whether such contaminants "lead to exposures, and do these exposures have implications for health effects."

Others, including drug manufacturers and sewage treatment operators, say that while they are monitoring the contaminants, their threat has been overstated.



KNIGHT RIDDER TRIBUNE

Rebecca Klaper, an ecological genomics scientist at the University of Wisconsin at Milwaukee, recently exposed fathead minnows to a popular anti-cholesterol drug at a level that was only slightly higher than what now occurs in area streams. She stopped the experiment, planned to last a week, after 24 hours because the fish already were struggling to survive.

Thomas White, an environmental consultant for the Pharmaceutical Research and Manufacturers of America (PhRMA), said industry studies indicate there are "no appreciable human health risks" and no "appreciable impacts on the aquatic environment" linked to drugs in the water.

In recent months, however, scientists have issued a series of findings suggesting that discarded drugs, which pass through municipal wastewater systems and into rivers, lakes and streams, could affect the environment. In 2002, a U.S. Geological Survey (USGS) study found these kinds of contaminants in 80 percent of the 139 streams it sampled in 30 states. Other researchers suspect that hormones and medicines in the water may be responsible for effects on wildlife that include feminizing male fish and making others sluggish or uninterested in eating.

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"They were sitting at the bottom of the tank, barely moving and barely breathing," Klaper said in an interview. "We're concerned (these pharmaceuticals) are not only having an effect on aquatic organisms, but on human populations as well."

Timothy Gross, a USGS toxicologist, has spent several years studying how fish are faring downstream from Las Vegas. He examined three species — carp, largemouth bass and the endangered razorback sucker — and detected "a very large and

marked decrease in sperm quality and quantity" in all three populations.

There are enough carp and bass to withstand such effects, Gross said, but the razorback sucker may not recover. "When you have a species already on the brink, this may push them over the brink," he said.

Senate Minority Leader Harry Reid, D-Nev., who has secured \$2.5 million over the past decade to fund the Geological Survey's water quality studies in the Las Vegas Valley, said the government needs "to do a comprehensive national study to determine how these contaminants might affect our health, our water supplies and our environment. I think it would be irresponsible not to provide funding on this issue. It is a wise, and necessary, investment in our future."

But several rank-and-file EPA employees said senior agency officials have expressed little interest in the subject. Hilary Snook, an EPA research scientist who has been analyzing pharmaceutical levels in about 45 water samples from Maine, Connecticut, New Hampshire and Vermont, said he has yet to receive funding from headquarters for the project. As a result, he said, his office lacks the money to complete the study quickly.

"I don't think there's much political will at all" to tackle the issue, Snook said. "We should at least look at it. We shouldn't be burying our heads in the sand."

State and local officials are growing increasingly impatient. David Galvin, who manages the hazardous waste program in King County, Wash., is coming under pressure from county residents to collect unused pharmaceuticals from hospitals as well as from elderly residents' homes. He is working with the nonprofit Product Stewardship

Institute in Boston to start a national dialogue between drug manufacturers and government agencies on how to minimize the environmental impact of discarded medicines.

"Otherwise, we at the local level are going to be stuck with figuring out how to deal with it and having to pay for it," Galvin said. "I'd rather that not happen."

Maine officials hope to establish a program that would encourage consumers to mail back unused drugs to be incinerated, and they want drug manufacturers to pay for it. But in February, according to a letter obtained by the Natural Resources News Service, PhRMA wrote that it was "opposed to the recommen-

Chemicals in U.S. waters

Pharmaceuticals were among the most common chemicals found by a team of government researchers who sampled 139 waterways downstream from cities or livestock across the United States.

Percentage of streams where traces of chemicals were found:

STEROIDS 89

NONPRESCRIPTION DRUGS 81

Insect repellent 75

Detergent metabolites 69

Disinfectants 66

Plasticizers 64

Fire retardants 60

ANTIBIOTICS 48

Insecticides 45

Polycyclic aromatic hydrocarbons 44

HORMONES 37

OTHER PRESCRIPTION DRUGS 32

Antioxidants 29

Fragrances 27

Solvents 24

SOURCE: U.S. GEOLOGICAL SURVEY

dition that manufacturers solely fund this approach."

Pistell and others would like to start taking back medicines, but, she said, "the state is not in a position to pay for it."