

'Forever chemicals' in deer, fish challenge hunters, tourism

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Wildlife agencies in the U.S. are finding elevated levels of a class of toxic chemicals in game animals such as deer—and that's prompting health advisories in some places where hunting and fishing are ways of life and key pieces of the economy.

Authorities have detected the high levels of PFAS, or per- and polyfluoroalkyl substances, in deer in several states, including Michigan and Maine, where legions of hunters seek to bag a buck every fall. Sometimes called "forever chemicals" for their persistence in the environment, PFAS are industrial compounds used in numerous products, such as nonstick cookware and clothing.

The U.S. Environmental Protection Agency launched an effort last year to limit pollution from the chemicals, which are linked to health problems including cancer and low birth weight.

But discovery of the chemicals in wild animals hunted for sport and food represents a new challenge that some states have started to confront by issuing "do not eat" advisories for deer and fish and expanding testing for PFAS in them.

"The fact there is an additional threat to the wildlife—the game that people are going out to hunt and fish—is a threat to those industries, and how people think about hunting and fishing," said Jennifer Hill, associate director of the Great Lakes Regional Center for the National Wildlife Federation.

PFAS chemicals are an increasing focus of public health and environmental agencies, in part because they don't degrade or do so slowly in the environment and can remain in a person's bloodstream for life.

The chemicals get into the environment through production of consumer goods and waste. They also have been used in firefighting foam and in agriculture. PFAS-tainted sewage sludge has long been applied to fields as fertilizer and compost.

In Maine, where the chemicals were detected in well water at hundreds

of times the federal health advisory level, legislators passed a law in 2021 requiring manufacturers to report their use of the chemicals and to phase them out by 2030. Environmental health advocates have said Maine's law could be a model for other states, some working on their own PFAS legislation.

California Gov. Gavin Newsom, a Democrat, signed a bill in September that bans the chemicals from cosmetics sold in the state. And more than 20 states have proposed or adopted limits for PFAS in drinking water, according to the National Conference of State Legislatures.

More testing will likely find the chemicals are present in other game animals besides deer, such as wild turkeys and fish, said David Trahan, executive director of the Sportsman's Alliance of Maine, a hunting and outdoors advocacy group.

The discovery could have a negative impact on outdoor tourism in the short term, Trahan said. "If people are unwilling to hunt and fish, how are we going to manage those species?" he said. "You're getting it in your water, you're getting it in your food, you're getting it in wild game."

Maine was one of the first states to detect PFAS in deer. The state issued a "do not eat" advisory last year for deer harvested in the Fairfield area, about 80 miles (129 kilometers) north of Portland, after several of the animals tested positive for elevated levels.

The state is now expanding the testing to more animals across a wider area, said Nate Webb, wildlife division director at the Maine Department of Inland Fisheries and Wildlife. "Lab capacity has been challenging," he said, "but I suspect there will be more facilities coming online to help ease that burden—in Maine and elsewhere in the country."

Wisconsin has tested deer, ducks and geese for PFAS, and as a result

issued a "do not eat" advisory for deer liver around Marinette, about 55 miles (89 kilometers) north of Green Bay. The state also asked fishermen to reduce consumption of Lake Superior's popular rainbow smelt to one meal per month.

Some chemicals, including PFAS, can accumulate in the liver over time because the organ filters the chemicals from the blood, Wisconsin's natural resources department told hunters. New Hampshire authorities have also issued an advisory to avoid consuming deer liver.

Michigan was the first state to assess PFAS in deer, said Tammy Newcomb, senior executive assistant director for the Michigan Department of Natural Resources.

The state issued its first "do not eat" advisory in 2018 for deer taken in and near Oscoda Township. Michigan has since issued an advisory against eating organs, such as liver and kidneys, from deer, fish or any other wild game anywhere in the state. It has also studied waterfowl throughout the state in areas of PFAS surface water contamination.

The state's expanded testing also has proven beneficial because it helped authorities find out which areas don't have a PFAS problem, Newcomb said.

"People like to throw up their arms and say we can't do anything about it. I like to point to our results and say that's not true," Newcomb said.

"Finding PFAS as a contaminant of concern has been the exception and not the rule."

The chemical has also been found in shellfish that are collected recreationally and commercially. Scientists from the Florida International University Institute of Environment sampled more than 150 oysters from around the state and detected PFAS in every one, according

to their study in August. Natalia Soares Quinete, an assistant professor in the institute's chemistry and biochemistry department, described the chemicals as "a long-term poison" that jeopardizes human health.

Dr. Leo Trasande, a professor of pediatrics at NYU Grossman School of Medicine who has studied PFAS, said the best way to avoid negative health effects is reducing exposure. But, Trasande said that's difficult to do because the chemicals are so commonplace and long-lasting in the environment.

"If you're seeing it in humans, you're likely going to see the effects in animals," he said.

Wildlife authorities have tried to inform hunters of the presence of PFAS in deer with posted signs in hunting areas as well as advisories on social media and the internet. One such sign, in Michigan, told hunters that high amounts of PFAS "may be found in deer and could be harmful to your health."

Kip Adams, chief conservation officer for the National Deer Association, said the discovery of PFAS in states like Maine and Michigan is very concerning to hunters.

"With the amount of venison my family eats, I can't imagine not being able to do that," Adams said. "To this point, everything we've done has been about sharing information and making sure people are aware of it."

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