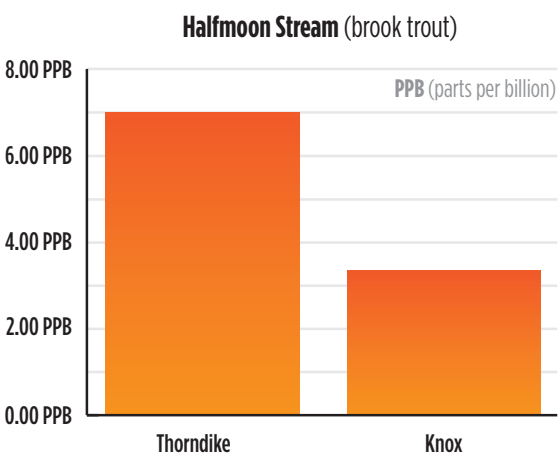
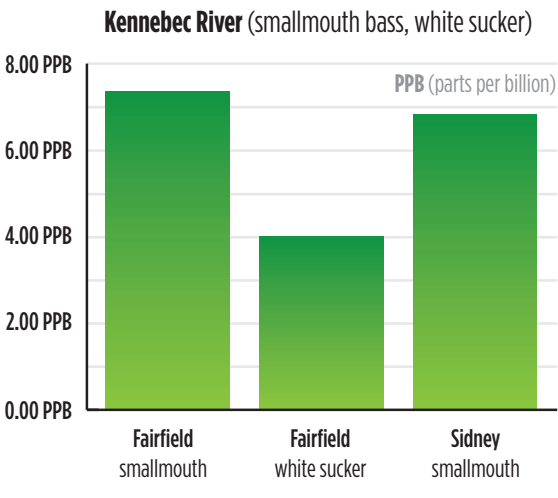
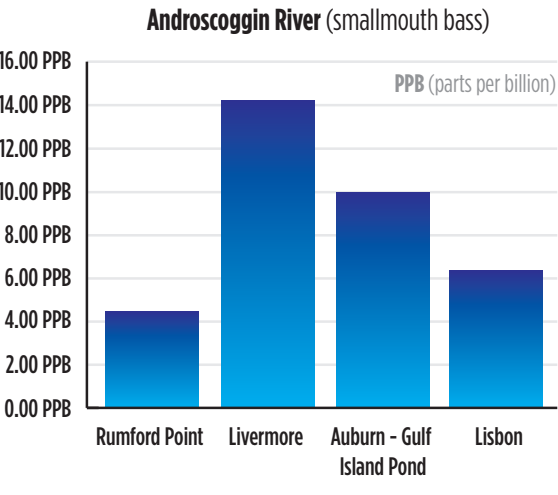


PFOS findings by species and location

Elevated concentrations of the forever chemical PFOS have been found in smallmouth bass, brook trout and white sucker tested at various locations in Maine in 2019.



SOURCE: Maine Department of Environmental Protection

STAFF GRAPHIC | JAKE LAWS

FISH

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Administration has yet to offer any guidance on safe levels of PFAS in shellfish or other seafood.

Any state consumption advisories likely would be along the same lines as those already in place for mercury levels in freshwater species in Maine lakes, ponds, rivers and streams. The warnings wouldn't apply to seafood caught in the ocean or found in grocery stores.

PFAS are a class of over 4,000 manmade chemicals that have been used since the 1950s in industrial and household products such as waterproofing or anti-stick coatings and in firefighting foam. Exposure to PFAS can increase the risk of kidney and testicular cancer, lead to high blood pressure or pre-eclampsia in pregnant women, cause changes in liver enzyme levels, and decrease how well children respond to vaccinations.

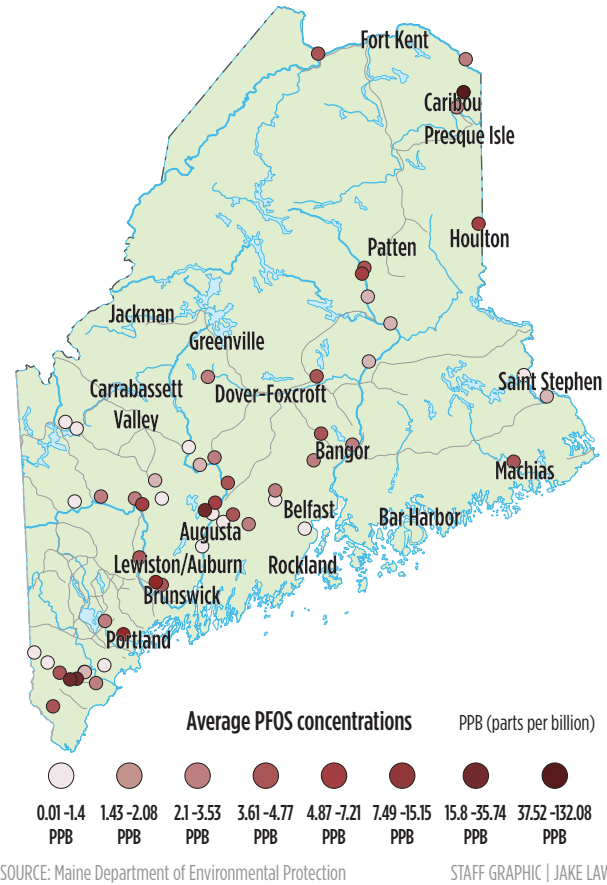
The Maine CDC sets thresholds, or "action levels," over which it would consider issuing a consumption advisory for recreationally caught freshwater fish. Over the years, it has adjusted the action level for perfluorooctane sulfonate, or PFOS, the most commonly found and studied of these compounds, which now stands at 34 parts per billion.

But State Toxicologist Andy Smith said he and his team are working to adjust the action level for PFOS to "about 10 times less than it is now" based on new toxicology data from the federal Agency for Toxic Substances and Disease Registry, setting the PFOS toxicity value at 2 nanograms per kilogram per day.

Dropping the action level to 3 or 4 ppb would bring many of the samples the Maine Department of Environmental Protection has collected over the hazard threshold. For more than

Forever chemicals found in Maine fish

Researchers in Maine have found elevated levels of a type of forever chemical known as PFOS in freshwater fish at several sites across the state from 2014 to 2020. The Maine CDC is considering a health advisory for fish containing more than 3 to 4 parts per billion of PFOS.



half of the sites and species sampled in 2019 and 2020, the department found average concentrations of more than 4 ppb, according to a dataset provided by DEP Aquatic Toxicologist Tom Danielson.

Due to the presence of mercury, Maine CDC already has a fish consumption advisory in place.

Pregnant women and children are advised not to eat any freshwater fish from Maine inland waters, and all others should limit their consumption to two meals per month, or one meal per week for brook trout or landlocked salmon. Certain polluted waterbodies have greater restrictions. Smith said that when considering

whether to issue a PFAS-related advisory, Maine CDC would evaluate whether more restrictive advisories are needed compared with those currently in effect.

The presence of forever chemicals in Maine fish started to become known about 10 years ago, when the U.S. Environmental Protection Agency sampled fish from five rivers in Maine as part of a national survey of urban waterways across the country and found smallmouth bass with elevated concentrations of PFOS in the Androscoggin River in Lisbon and the Kennebec River in Waterville.

Scientists in DEP's Surface Water Ambient Toxics, or SWAT, monitoring program began sampling in streams around the former Loring Air Force Base, a site used for firefighter training activities, after the chemicals were found during federal cleanup efforts there. They found brook trout in the area with PFOS concentrations as high as 1,080 ppb, and all but one was over the Maine CDC's action level at the time of 42 ppb. That prompted the team to collect more samples. They looked in areas with potential sources such as wastewater treatment plants, industrial areas or downstream of farms where PFAS-contaminated sludge may have been spread.

Since 2014, they have found elevated PFOS concentrations in fish at various locations downstream of industrial sources and wastewater treatment plants on the Mousam, Presumpscot, Androscoggin and Kenne-

Please see **FISH**, Page A10



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