

EPA Recommendations for Contaminants to Monitor in Fish and Shellfish Advisory Programs

1. How did the EPA decide which contaminants to add to the lists of recommended contaminants for fish advisory programs to monitor?

The EPA developed the lists after a multi-year process that included extensive review of the published scientific literature for contaminants measured in species of fish and shellfish that can be found in the U.S. The EPA also conducted an external peer review of the process the agency followed.

This process included performing a literature search to identify contaminants that bioaccumulate in fish and shellfish and their corresponding concentrations. The EPA extracted data on the concentrations of contaminants in fish and shellfish from the published articles and toxicity information (e.g., reference dose and cancer slope factor) for contaminants from sources such as the EPA's Integrated Risk Information System and DHHS' Agency for Toxic Substances and Disease Registry. The EPA used each contaminant's concentration and toxicity information in advisory equations found in EPA's *Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories* to determine if the levels found in fish or shellfish would exceed thresholds for safely eating eight ounces of seafood per week, as recommended by the *Dietary Guidelines for Americans*, or thresholds for frequent eaters, who were assumed to eat five ounces of seafood per day. Those contaminants whose levels were found to exceed the thresholds are included in the *Contaminants to Monitor for Advisories* list.

For the contaminants without toxicity values, the EPA calculated a generic screening level for each group of contaminants to capture contaminants with fish tissue concentrations high enough to potentially be a human health concern. Based on the generic screening level comparisons, those contaminants with measured levels that would exceed thresholds for safely eating eight ounces of seafood per week are included the *Contaminants to Monitor to Watch* list.

2. Why is the EPA taking this action now?

The EPA is committed to protecting people and the environment from the impacts of PFAS. The Agency has increasingly detected PFAS in freshwater fish tissue on a national scale in the Great Lakes and large rivers across the country. The Agency is using the latest science that we used for the recently released [PFAS drinking water rule](#) to determine which PFAS compounds to include on the lists we recommend states, Tribes and territories consider monitoring for. These updated monitoring recommendations for fish advisory programs fulfills a commitment in Administrator Regan's [2021 PFAS Strategic Roadmap](#), where the EPA laid out clear actions it will take to research, restrict, and remediate PFAS.

3. When was the list last updated and what has the EPA changed as part of the 2024 update?

The *Contaminants to Monitor for Advisories* list was last updated in 2000. The EPA has added nine contaminants including PFDA, PFHxS, PFNA, PFOA, PFOS, microcystins (a cyanotoxin), BDE-47 (a flame retardant), amphetamine (a pharmaceutical), and lead to the existing list. These are now included in the updated *Contaminants to Monitor for Advisories* list. As part of the 2024 update, the EPA also created a new list, *Contaminants to Monitor to Watch*. This new list contains nine contaminants for which the EPA or other federal agencies have not yet released toxicity assessments of the effects on human health but has been found in the edible tissue of fish and shellfish at concentrations that may be of concern for human health.

In total, EPA is recommending states, Tribes and territories consider monitoring for an additional 18 contaminants in freshwater fish tissue.

4. Is the EPA developing any fish consumption advisories for the contaminants, especially the PFAS contaminants, that have been added to both lists?

In general, the EPA does not issue fish advisories under the Clean Water Act and the agency is not currently developing a fish consumption advisory for any of the new contaminants on these lists. Tribes, states and territories issue advisories for their local waters that are based on the amount of a contaminant found in specific animal species in a specific water body. For people who eat freshwater fish caught in local rivers and lakes, the EPA recommends they consult their Tribe, state or territory for information on local fish advisories to determine the safe number of freshwater fish to eat.

Under CWA section 104(b), the EPA provides guidance and other information to Tribes, states and territories to assist them in making decisions regarding fish advisories, including those related to PFAS. The updated lists serve as the EPA's recommendations to Tribes, states and territories of which contaminants to monitor for in fish in their local waters.

5. Why are state/Tribal/territorial governments the lead agencies for monitoring fish tissue and issuing fish advisories?

Tribes, states and territories are best positioned to determine which waters to monitor, and which contaminants are likely to have been spilled or discharged into local waters. To assist Tribes, states and territories in their decision-making regarding fish advisories, the EPA provides national guidance on developing fish monitoring and advisory programs, recommends analysis methods, and gathers monitoring data from National Aquatic Resource Surveys, and other information. The EPA does not have a regulatory role regarding development of fish consumption advisories for local waters. In addition, local agencies are better equipped than the EPA to identify and communicate risks to local populations who consume fish caught in specific waterbodies within their jurisdictions.

6. What is the health risk to people eating fish they catch from U.S. freshwaters that contains PFAS?

For people who eat freshwater fish caught in local rivers and lakes, the EPA recommends that they consult their Tribe, state or territory for information on local fish advisories to determine the safe number of freshwater fish to eat. Current scientific research suggests that exposure to certain PFAS may lead to adverse health outcomes. Specific health risks depend on the level of PFAS found in fish in local waters and how much fish a person eats. We know that the lower the levels of PFAS in fish, the lower the risk of health effects.

7. What advice does the EPA have right now for people who practice subsistence fishing?

Fish, including locally caught freshwater fish, are of vital cultural and economic importance to many people, and are an importance source of sustenance and protein. That is why EPA is working to protect the waters in which fish spawn and live from these contaminants and is taking steps within its authorities to address water quality and contamination challenges to many bodies of water under EPA's jurisdiction. Transparency about what contaminants are present in fish is an important part of that process, and EPA believes it is important for people who consume locally caught, freshwater fish to understand and consider the health risks that higher levels of consumption may pose.

For people who eat freshwater fish caught in local rivers and lakes, the EPA recommends that they consult their Tribe, state or territory for information on local fish advisories to determine the safe number of freshwater fish

to eat.

8. Has EPA monitored fish near where I live?

The EPA does not survey many local waterways. Localized testing is needed to determine if they contain contaminants that may pose a potential health risk. The EPA collaborates with states to conduct freshwater fish contamination studies from a national perspective. Information about the contaminants found in national monitoring surveys are available on the EPA's [Studies of Fish Tissue Contamination](#) web pages. These include information on mercury, PCBs, and some PFAS compounds.

The EPA is currently analyzing samples from lakes nationwide and has found PFAS in fish collected from U.S. rivers and the Great Lakes. The agency's 2018-2019 National Rivers and Streams Assessment (NRSA) reported that PFOS was detected in 91 percent of the fish samples collected; this reflects a significant decrease of samples with detectable levels of PFOS from the earlier 2013-2014 NRSA study. For the Great Lakes studies that the EPA has conducted since 2010, PFOS has consistently been detected in every sample. In addition, PCBs and mercury were found in 100 percent of the fish samples.

9. Is there any EPA/federal funding available to Tribes, states and territories to conduct monitoring for the listed contaminants?

The EPA provides assistance to states (including territories and the District of Columbia), interstate agencies, and eligible Tribes under section 106 of the Clean Water Act. This funding can help to establish and implement ongoing water pollution control programs. Section 106 grant funds can be used for water quality monitoring and other activities. More information can be found on the [Water Pollution Control \(Section 106\) Grants](#) page.

10. Are any jurisdictions already testing for PFAS in fish? If so, does the EPA have examples of what they've done with that data?

Alabama, Connecticut, Indiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Washington, and Wisconsin have issued advisories for some PFAS in their local waterbodies. Additional state monitoring programs including Alaska, California, Colorado, Hawaii, Illinois, Kentucky, Vermont, and Virginia are analyzing fish tissue for some PFAS.

11. Does the EPA anticipate that fish advisory programs will find the new contaminants that are being added to the monitoring list?

In general, whether a contaminant is found in fish will depend on the history of land use and discharges into a particular waterway. The EPA has detected PFAS compounds in fish when conducting the National Aquatic Resource Surveys. For example, the agency's 2018-2019 National Rivers and Streams Assessment (NRSA) reported that PFOS was detected in 91 percent of the fish samples collected; this reflects a significant decrease of samples with detectable levels of PFOS from the earlier 2013-2014 NRSA study. For the Great Lakes studies that the EPA has conducted since 2010, PFOS has consistently been detected. However, those surveys use a statistical survey design and do not sample every waterbody, so the states are best positioned to determine which specific waterbodies have fish containing PFAS and whether the levels found in fish are high enough to warrant a consumption advisory.

12. How often does the EPA update the contaminant monitoring list?

The EPA's recommended list was last updated in November 2000, but many states regularly update what they monitor for based on local conditions. For example, at least half of the states are already monitoring for PFAS

compounds in fish, and at least 16 have issued fish consumption advisories for some PFAS compounds such as PFOS.

13. Does the EPA anticipate that states and authorized Tribes will use the EPA’s upcoming national Clean Water Act section 304(a) recommended human health criteria for PFAS as a basis for issuing a fish advisory for any of those PFAS when comparing their monitoring results?

No, the EPA does not anticipate that states and Tribes will use the upcoming national Clean Water Act section 304(a) recommended human health criteria for PFAS as a basis to issue fish advisories. The EPA has been issuing recommended water quality criteria to protect human health at a national level for decades, and to the best of the EPA’s knowledge, states and Tribes do not use them directly to issue fish advisories on local waterbodies.

Both the criteria and fish advisories use the same basic risk equations and the same human health toxicity assessments. A key difference between fish consumption advisories, which are issued by states and Tribes, and CWA section 304(a) recommended water quality criteria, is that fish advisories are designed to protect people from eating contaminants in particular fish species from specific local waters, whereas the national CWA section 304(a) recommended criteria are health-based values designed to protect people eating fish/shellfish and/or drinking water. In addition, fish advisories are expressed as recommended number of fish meals per time period, whereas water quality criteria for PFAS will be expressed as the concentration in ambient water that protects people from lifetime exposure to a contaminant from drinking water and eating fish and shellfish from surface water.

The agency anticipates releasing draft national CWA section 304(a) recommended criteria for PFOS, PFOA, PFBS, and HFPO-DA (“GenX chemicals”) for public comment in late 2024. However, the available data suggest that the PFAS studied do not partition equally in water and fish. For example, study results indicate that PFAS with fewer carbons (e.g., PFBS) are found at higher levels in water than in fish, whereas longer carbon chain PFAS (e.g., PFUnA) tend to be found at higher levels in fish than in water.