



# ST. MARY'S RIVER WATERSHED ASSOCIATION

[Public Employees for Environmental Responsibility](#)

[PEER Fact Sheet](#)

[US Environmental Protection Agency](#)

[Maryland Department of the Environment](#)

[MDE on the St. Mary's River](#)

[St. Mary's Health Dept.](#)

[European Environment Agency](#)

## LAB REPORTS

[PFAS in crab, oyster, and Rockfish](#)

[PFAS in water & oysters](#)

[MDE's PFAS Report](#)

[NEW LINK SMRWA 2020 Scientific Report](#)

[NEW LINK SMRWA 2020 Report Addendum](#)

[MSU and Texas A&M 2002 Study: PFAS in Oysters](#)

Commercial manufacturing of PFAS began in the 1940s, and industry has expanded production ever since. Since 2010, many PFAS chemicals have been voluntarily phased out by eight US chemical companies, but PFAS are still widely found due to its legacy of use and persistence in the environment. New "short-chain" and Gen-X fluorinated compounds have replaced, or are replacing, the older ones.

would really be a virtually safe dose, you're getting down at about 0.1 ppt. [parts per trillion] Well, that's really low. And that's only for one PFAS."

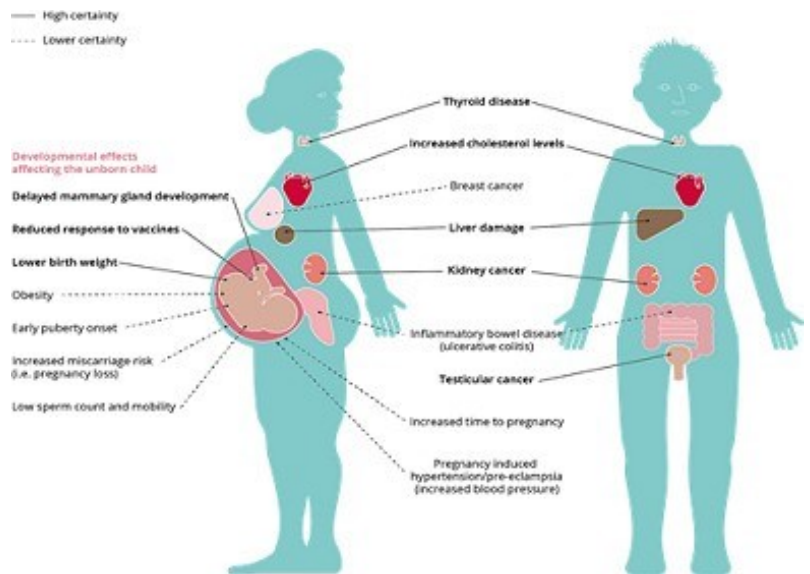
Dr. Birnbaum was speaking about many, if not all, of the PFAS family of chemicals. Studies in lab rats found similar health responses to the newer "short chain" and GenX chemicals at extremely low doses as they had with PFOA and PFOS. It's important to understand that these chemicals accumulate in our bodies and the health impact is likely the sum total of all of them.

## What are the health concerns?

Dr. Linda Birnbaum, former director of the National Institute for Environmental Health Sciences, argues that even minute amounts of PFAS are health concerns and that newer compounds act very similarly on lab rats. Therefore the whole class of PFAS should be regulated as one. (Watch the Maryland Public Interest Research Group's November 16, 2020 panel discussion on PFAS in Maryland.

"If you look at the data, pancreatic tumors are present at very, very low concentrations from PFOA [in rats]," Birnbaum told the audience at the conference. "If you use the pancreatic tumors in the rats in the [National Institute for Environmental Health Science National Toxicology Program] study to calculate what

PFAS are associated with suppressed immune function, thyroid disease, testicular and kidney disease, cancers, and liver damage. Newer short chain and GenX compounds have been studied little but scientists studying them currently are finding that they have similar toxicology to long chain PFAS.



*PFAS effect on human health published by the European Environment Agency. Retrieved from: <https://www.eea.europa.eu/themes/human/chemicals/emerging-chemical-risks-in-europe>*

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### SPECIFIC PRODUCTS

TFF = Take-Out Food Packaging

CR = Take-Out Food Packaging

Other recent studies have associated PFOS and PFOA with hepatotoxicity, neurotoxicity, reproductive toxicity, immunotoxicity, thyroid disruption, cardiovascular toxicity, pulmonary toxicity, and renal toxicity in laboratory animals and suggest these conditions may affect in-vitro human systems.

area—such as the Chesapeake Bay.

Estimates of Americans currently exposed to PFAS in their drinking water range from 10 million to over 200 million. Many foods are also a leading source of PFAS either from the containers used for cooking, transport, and storage of food or from the food itself. Food from polluted waters or grown on polluted land can contain PFAS.

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### Where are PFAS found?

PFAS chemicals can be found in almost all household items considered non-stick, non-stain, oil-resistant, fire-resistant, and water-resistant. It can be found in cosmetics, hand sanitizers, lotions, sun screens, dental floss, furniture, drapes, and carpets—items we use every day. Paints, pesticides, photography, and food containers may contain PFAS.

Aqueous Film Forming Foams (AFFF) used to put out fuel fires were first developed in the mid-1960s by the Navy and have been refined since. AFFF products of this era up until 2015 contain PFOA and/or PFOS - two of the most studied and deemed harmful PFAS chemicals. (Most of the 8000-plus compounds have never been tested by independent science.) In training drills at airports, jet fuel is ignited, then trainees use the AFFF to put it out. Early on, spent AFFF was sent on to the local wastewater treatment plant or left to disperse in storm water drainage ditches, and leaching into the soil and ground water. Wastewater treatment plants were and mostly remain unable to process AFFF and the PFAS chemicals pass through their systems and are sent on to the discharge

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### What's in St. Mary's River?

The St. Mary's River Watershed Association (SMRWA), the Maryland Department of the Environment, and the Public Employees for Environmental Responsibility have all tested the waters of the St. Mary's River for PFAS. All three also tested oysters; PEER also tested a blue crab and a Rockfish caught nearby in Cornfield Harbor. All three studies had similar findings for the waters of the St. Mary's River—minute quantities of PFAS were in most locations tested. Several compounds were found in some areas. Total PFAS ranged from 1.1 ppt to 13.7 ppt. The focus of all three groups' testing was the Navy's Webster Outlying Field as a potential source or hotspot. But testing done further upriver, at the mouth of the Patuxent, and near Maryland's eastern shore (Fishing Bay was 6.79 ppt to 12.47 ppt) also detected PFAS.

Oysters tested by SMRWA and PEER and the one crab had detectible total PFAS of similar range. The highest oyster was 2070 ppt of five PFAS compounds and the crab had 6,650 ppt of eight PFAS

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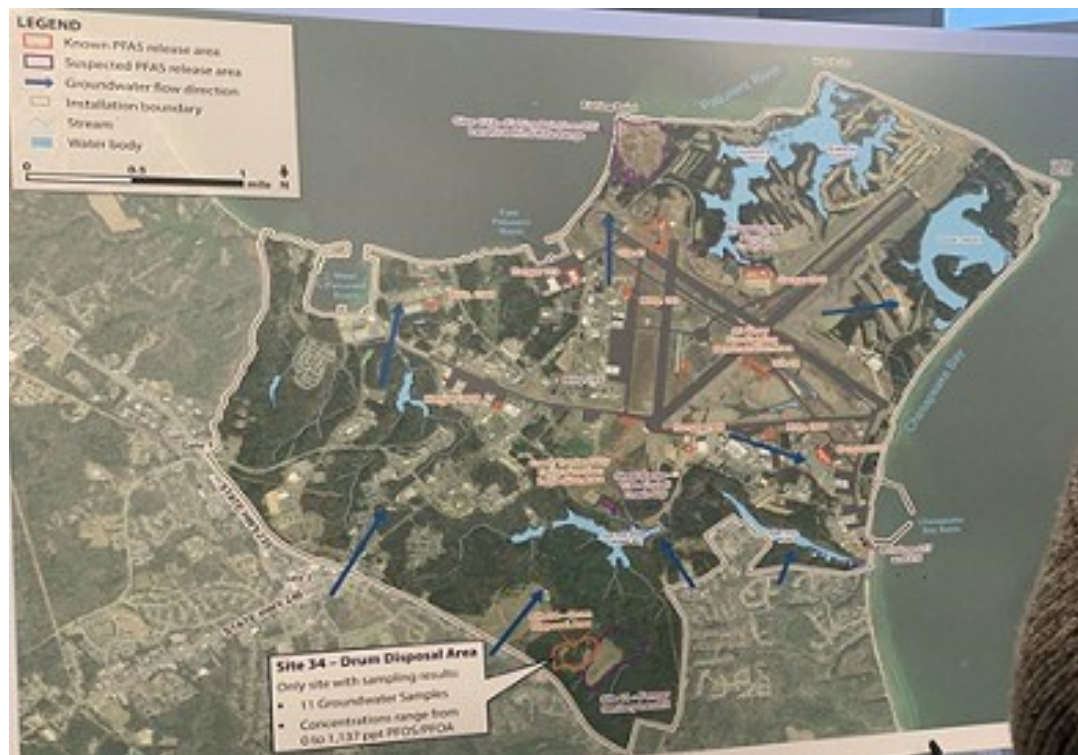
compounds. By far the 23-inch Rockfish, which is believed to have been three years old, had the highest concentration of PFAS compounds at 23,100 ppt. The lab that MDE used for analysis was unable to detect any PFAS in oysters; their detection level was 1000 times higher than the other labs that SMRWA and PEER contracted.

Studies elsewhere, such as New Jersey, New Hampshire, and North Carolina, have had similar results comparing fish and oysters. Generally, it appears that fish have about ten or more times as much PFAS as oysters.

## What are my greatest risks?

Scientists believe that seafood and drinking water are responsible for much of the PFAS found in human blood. Other significant sources might include a personal product, such as hair spray and eyeliner, or the ongoing use of Teflon®-coated cook ware or certain carryout containers including burger boxes, wrappers, disposable bowls, and bags for French fries, sides, and desserts.

PFAS was not detected in most of the drinking water deep wells tested in St. Mary's county that we are aware of. METCOM has tested its larger wells, but it



*Suspected release and flow of PFAS contamination on the Patuxent Navy Base that was presented at a public meeting hosted by the US Navy on March 3, 2020 at the Lexington Park Library. SMRWA file photo of a US Navy poster.*

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is not known if these tests have become recurring as is necessary since PFAS flow through the underground aquifer. Additionally, the best labs in the world can detect just four dozen or so of the 8,000-plus compounds known.

Some surfactants and surface treatments contain PFAS. Some high end oils and greases have PFAS (look for "PTFE" on the label). Artificial turf is likely to contain PFAS.

Emerging science on PFAS is looking at absorption through the skin, once believed not possible. Check your hand sanitizer list of ingredients for anything containing fluoride, fluoro, or any acronym beginning with "P."

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### Who to believe?

The EPA has this statement on it's website:  
*To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, EPA has established the health advisory levels at 70 parts per trillion. The EPA does not regulate other compounds. [\[Click here to read EPA's statement\]](#)*

Sweden has set a slightly higher regulatory limit of total PFAS detected in drinking water at 90 ppt. The European Union's regulatory limit is 200 ppt total for 20 specific compounds.

These regulatory limits are not even

close to what Dr. Birnbaum and others suggest. Birnbaum, along with the Environmental Working Group, Toxic-Free Future, and other health advocacy groups, are pushing for the safe drinking water limit to be 0.1 ppt total for all PFAS compounds detected.

Visit our many links to read more opinions and studies, and our governments' statements and publications. We highly recommend you watch the panel discussion [\*PFAS in the Chesapeake\*](#) that aired on Facebook November 16, 2020. Then you should decide for yourself and your family how you will or won't reduce PFAS in your life.

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### Where Can I Get My Water Tested?

Lab testing of drinking water for PFAS is expensive. Only a few labs in the US are EPA-certified to test for PFAS. Some others will perform these tests and they do charge less—as low as \$200. Very important in choosing a lab is understanding their threshold of detection. A high threshold is less expensive. (Remember above we mentioned that MDE tested oyster at a high threshold—therefore, they found no PFAS. We expect that PFAS was in those oysters as other lab tests confirmed PFAS in oysters nearby.)

Certified labs test for certain PFAS compounds and generally group them together. You can choose to have them

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test for 14 compounds, 28 compounds, 32 compounds, or more. Of those labs that are EPA-certified, RTI Labs in Michigan charged SMRWA \$295 to test for 28 compounds. Their threshold of detection is also quite low at 4.5 ppt. Eurofins lab in Pennsylvania charged SMRWA \$356 to test for 32 compounds with the lowest threshold we've found, 0.44 ppt. Eurofins requires a "field blank" as well, which actually doubles the cost to \$712. A field blank is a sample taken at the sampling site using PFAS-free water. It is used to confirm that the samples are not contaminated. (It is easy to contaminate a sample since PFAS can be on our clothes, on our hands, or ambient in the air. Remember, we are talking in parts per trillion).

Of these three labs, only Eurofins can test animal flesh or blood with a low threshold.

RTI Laboratories David Howell 540-422-1532 cell Call between 11:00 and 7:00 EDT  
<https://rtilab.com/>

Eurofins Laboratories 717-656-2300  
LancLabsEnv@EurofinsUS.com <https://www.eurofinsus.com/>

Microbac Online inquiry form <https://www.microbac.com/residential-water>