PFAS foam in Van Etten Lake. Photo credit: Michigan Department of Environmental Quality.

The PFAS Crisis

LONG-LASTING CHEMICALS THREATEN THE GREAT LAKES REGION

The Great Lakes region is home to 85% of North America's freshwater, providing drinking water for 30 million people, supporting vital habitat for wildlife, and serving as the foundation for a regional economy which supports more than 1.3 million jobs that generate $82 billion in wages annually.[1] However, fish, wildlife and the tens of millions of people living in the Great Lakes basin are at risk due to the spread of dangerous chemicals called **per- and polyfluoroalkyl substances**—also known as PFAS. These toxic chemicals are contaminating the water in the Great Lakes region and across the country—threatening the health of people and wildlife. PFAS can be found in a range of consumer products, including shoes, carpet, clothing, fabrics, non-stick cookware, paints, and pizza boxes. PFAS are also found in firefighting foams used at military bases, airports, oil refineries, and some fire stations. The unique chemical structure of PFAS leads to varying characteristics, including the ability to resist heat and repel water and oil, which is why they are so widely used in industrial and consumer products.[2] But the very properties which make PFAS chemicals useful for modern life also create a unique threat to the environment and people, including wildlife and our water supply. These nearly indestructible chemicals don't readily degrade in the environment, which has led to widespread contamination and long-lasting risks of exposures, including in the Great Lakes region.

Hazardous to Humans and Wildlife

Many PFAS are persistent, bioaccumulative, and toxic, with risks to humans, fish and wildlife. The chemicals are linked to tumors in animals, lower reproductive success in birds, and liver, kidney and immunological effects in laboratory animals. Because many PFAS bioaccumulate (get taken up in organisms) and biomagnify (increase in concentrations up the food chain), the chemicals can have impacts on fish and game species which are cornerstones to hunting, angling, and the Great Lakes economy overall. Birds can be affected as well, as evidence of contamination has been found in tree swallows, great blue herons, terns, gulls and bald eagles.

In humans, exposure to elevated levels of PFAS has been linked to increased risk of testicular cancer, liver and thyroid disease and immune system disorders.[3] At present there are more than 2,230 known sites contaminated with potentially dangerous levels of PFAS in 49 states. In addition, as many as 1,500 municipal drinking water systems may be contaminated with PFOA, one of the most common PFAS compounds. This puts up to 110 million Americans at risk of exposure to hazardous chemicals while drinking, bathing, cooking or cleaning.[4] In Michigan, the state's Department of Health and Human Services in

Photo credit: Jennifer Hill

2018 issued an advisory recommending against consumption of any fish from the Huron River and other bodies of water in five counties near the city of Detroit.[5] The former Wurtsmith Air Force base, located in Oscoda, Michigan, was the first former military site where PFAS contamination was discovered. Clark's Marsh, just south of Wurtsmith, is covered by a Do Not Eat venison advisory for whitetail deer taken within 5 miles of the Marsh as well as a Do Not Eat wildlife advisory for all animals living within the Marsh—the first ever of its kind in the country.

The risks and impacts of PFAS contamination are especially impactful to low-income communities who rely on subsistence fishing and hunting as a healthy and accessible option for protein, as well as those who may not have access to safe and secure drinking water. Often times the communities put in harm's way due to this type of contamination are predominantly communities of color.

A Push for New Laws and Regulations

Beginning in 2000, facing public health, regulatory and legal concerns, major U.S. manufacturers of PFAS chemicals have voluntarily phased out production of certain PFAS compounds.[6] But limited use remains from existing stockpiles, not all manufacturers have participated, many PFAS are not addressed through the phaseout agreements, and consumers can still be exposed to PFAS in products imported from countries where the chemicals are still in use. And even if new uses are limited or eliminated, substantial clean-up efforts are still required to remediate past contamination.

At present, there are no mandatory federal standards for safe levels of PFAS in drinking water. While some state governments have adopted or proposed new regulations to regulate PFAS, including Michigan, Indiana, Minnesota, Pennsylvania, New York, and Wisconsin in the Great Lakes region, a comprehensive federal approach is needed to make meaningful change in how PFAS chemicals are regulated, addressed, and cleaned up across the country.[7]

The National Wildlife Federation is working to address the issue of PFAS by advocating for strong policy solutions and investments at the state and federal levels that both prevent the use of these toxic chemicals and swiftly clean up contamination. We support science-based laws and regulations to confront the growing PFAS crisis, as well as renewed efforts to find safe, non-toxic substitute materials. We need high standards to protect people and wildlife, particularly communities of color and low-income communities, paired with funding solutions that do not place unfair burdens on cities and residents who already pay a high cost for safe drinking water.

Our Policy Priorities

- Establish protective federal drinking water and groundwater standards for PFAS.
- List PFAS as toxic substances federally.
- Increase the Department of Defense budget that reallocates resources to states to cleanup PFAS contaminated sites (such as former Wurtsmith Air Force Base in Michigan).
- Increase federal resources to state and local utilities to help control and mitigate PFAS in their wastewater and drinking water systems.
- Increase funding for agencies such as the US Environmental Protection Agency, US Geological Survey, and US Fish and Wildlife Service to expand environmental research and monitoring, including PFAS exposure and effects studies in fish and wildlife.
- Push for Great Lakes states to use the Clean Water Act, Safe Drinking Water Act, and federal cleanup laws to develop more rigid PFAS discharge and cleanup criteria, to designate PFAS of concern as hazardous, and to develop enforceable, protective PFAS drinking water standards.

Our Research Priorities

Federal and state agencies should expand research in several areas, including:

- Inventory PFAS sources in the Great Lakes region.
- Develop a better understanding of environment cycling.
- Increase monitoring of human exposure to the effects of PFAS, especially in communities that are historically more vulnerable to this type of exposure.
- Continue to study potential PFAS impacts on birds, reptiles, amphibians, and mammals.

1 Michigan Sea Grant, "The Dynamic Great Lakes Economy: Employment Trends from 2009 to 2018", October 2020
2 Consumer Reports, "Should You Be Concerned about PFAS Chemicals?" April 8, 2019
3 Agency for Toxic Substances and Disease Registry, "Per- and Polyflouroalklyl Substances (PFAS) and Your Health," June 24, 2020
4 Environmental Working Group, "Update: Mapping the Expanding PFAS Crisis," April 18 and July 30, 2018
5 Detroit Public Television, Great Lakes Now, "PFAS: All fish in Michigan's Huron River unsafe to eat," September 5, 2018
6 Interstate Technology Regulatory Council, "History and Use of Per- and Polyflouroalkyl Substances (PFAS)," November, 2017
7 National Conference of State Legislatures, "PFAS State Legislation and Federal Action", January 2021

To learn more about our work to address the growing PFAS contamination crisis in the Great Lakes region and about the work of the Great Lakes Regional Center of the National Wildlife Federation, visit us at **www.nwf.org/great-lakes** or contact one of our team members:

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