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Celebrating 38 years of working to protect public health and the environment in Northeast Wisconsin

FALL 2023

PFAS: A Growing Health and Environmental Concern

Learn About Ways to Protect Yourself and Your Family

Introduction
by CWAC President Dean Hoegger

PFAS chemicals have seen a great deal of news coverage in recent years, and Wisconsin state government has finally begun taking steps to protect human health and the environment. What are PFAS chemicals? They are a class of per- and polyfluoroalkyl substances, now thought to be over 5,000, that are used in a wide variety of consumer products for their water and stain resistant properties. They are toxic chemicals believed to cause different kinds of cancer and other illnesses. They are often called forever chemicals because they break down very slowly and can accumulate in humans, and other mammals as well as fish and birds.

Efforts by Wisconsin have only begun to address the problem. There is much work to be done. CWAC has been writing about this concern for the past decade, including in the Spring 2020 issue, *Protect Your Family from the Threat of PFAS Contamination.* Then we questioned why Michigan had identified so many PFAS contamination sites while Wisconsin had identified so few. While Wisconsin has not only been slow to react to the threat, the DNR has also been under attack by the Wisconsin Manufacturers and Commerce (WMC), which has filed lawsuits to restrict the agency's authority.

In one such lawsuit, WMC tried to prevent the DNR from requiring industrial and municipal sewage treatment

See page 13 to register for our PFAS conference on October 27 at UW-Green Bay.

plants to test for PFAS chemicals. Under an agreement filed in Jefferson County, the DNR can require the tests [but cannot release the results to the public.] That agreement leaves the public uninformed about where sources of PFAS may be lurking in their communities. Knowing if PFAS is being sent to a treatment plant would provide important information needed to act.

Sewage treatment plants often have different incoming lines. Determining which line contains the toxic chemical would make it possible to determine the likely source of PFAS contamination. Since treatment plants are not removing PFAS prior to discharging water, PFAS is then dispersed into the environment, typically to rivers and lakes, where it is currently not feasible to remove it.

If the DNR testing finds evidence of PFAS going to a treatment plant from a business or industry, residents living in a broad area of concern should be notified. There is a substantial history of spilled chemicals entering ground water, from lead arsenic in cherry orchards, to [PFAS chemicals around dry cleaners.] Depending on the level of contamination, residents and public water utilities may need to have their drinking water tested if the water is coming from a well.

We must continue to demand that protecting human health and the environment takes precedence over politics, as well as the profits of companies contributing to the problem. We must not let those companies and their trade organizations stand in the way of solutions.

In this issue, you will learn about how PFAS chemicals impact our health, how big money lobbyists are trying to prevent the DNR from protecting citizens, and the difference you can make as a citizen and voter.

PFAS: A Threat to Human Health

By Dean Hoegger

Even at extremely low levels, exposure to certain PFAS has been linked to an increased risk of cancer. The U.S. Environmental Protection Agency (EPA) recently classified PFOS and PFOA as contaminants likely to be carcinogenic.

The National Cancer Institute (NCI) studies have found that "higher kidney cancer incidence and mortality have been observed among individuals with high PFOA exposures from employment in a PFAS-producing chemical plant or residence in the surrounding community with contaminated drinking water." This finding provides further evidence that supports the need to not only monitor but also make public discoveries of PFAS chemicals at sewage treatment plants.

While the research is limited, the NCI found evidence that PFOA is associated with increased risk of testicular cancer, and elevated levels of PFOA and other perfluorinated chemicals may be associated with increased risk of prostate cancer and mortality. The institute has also launched a study to assess the impact of PFAS chemicals on ovarian and endometrial cancers.

PFAS exposure has also been linked to other serious health problems, such as reproductive and developmental problems, thyroid hormone disruption, high cholesterol, ulcerative colitis, reproductive and developmental problems, negative impacts to the immune system, and more. Small children and pregnant women are particularly vulnerable to PFAS exposure. PFAS may increase cholesterol levels, decrease how well the body responds to vaccines, and reduce fertility in women. Some other studies have indicated that high levels of certain PFAS may increase the risk of thyroid disease, increase the risk of serious conditions like high blood pressure or pre-eclampsia in pregnant women, and lower infant birth weights.

HEALTH GUIDELINES FOR PFAS IN DRINKING WATER

PFAS substances for which an EPA health indicator exists

Contaminant	EPA Health Indicator
Perfluorooctane sulfonate (PFOS)	4 ppt*
Perfluorooctanoic acid (PFOA)	4 ppt*
Perfluorohexanesulfonic acid (PFHxS)	9 ppt
Hexafluoropropylene oxide dimer acid (HFPO-DA) (GenX)	10 ppt
Perfluorononanoic acid (PFNA)	10 ppt
Perfluorobutanesulfonic acid (PFBS)	2,000 ppt

*Because PFOS and PFOA are likely to be carcinogenic, the EPA has determined that the maximum level of these substances in drinking water at which no known or anticipated adverse effect on the health of persons would occur—allowing an adequate margin of safety—is 0. However, the lowest concentration at which PFOS and PFOA can be reliably measured in drinking water is 4 ppt.

On November 6, 2020, the Wisconsin Department of Health Services (DHS) recommended groundwater standards not to exceed 20 ppt for PFOA and PFOS, two common PFAS chemicals, as well as four others. The DNR supported these recommendations, but the Natural Resources Board set the standard at 70 ppt for PFOA and PFOS in drinking water. Shortly thereafter, the EPA set an even lower recommended level of 4 ppt.

What level of PFAS is considered unsafe?

The best scientific information available suggests that exposure to PFOS and PFOA is harmful, even at very low levels. EPA's recent scientific findings indicate that no level of either of these two substances is safe. EPA has also established health-based safety indicators for PFBS, GenX, PFHxS, and PFNA. See the table at the bottom of page 2 for more information.

Often exposures to PFAS come from multiple PFAS chemicals, so the health risk must be evaluated accordingly. The hazard index tool is designed to evaluate exposure to multiple PFAS chemicals, which can provide the evidence needed to demand that a water utility take action. The tool is recognized by the EPA and the Wisconsin Department of Health? As you will see in the examples below, the hazard index is calculated by dividing the detected levels of each PFAS compound by an available health indicator. However, it does not calculate the effects of additional exposure to non-PFAS chemicals, such as PCBs, heavy metals, etc.

EXAMPLE #1

PFAS substances with EPA health indicators

detected level → 7 ppt (PFHxS)

EPA health indicator → 9 ppt

$$\frac{\text{7 ppt (PFHxS)}}{\text{9 ppt}} + \frac{\text{4.5 ppt (PFNA)}}{\text{10 ppt}} = \text{1.15}$$

EXAMPLE #2

PFAS substances without EPA health indicators

detected level → 18.6 ppt (FOSA + NEtFOSE)

DHS safety standard → 20 ppt

$$\frac{\text{18.6 ppt (FOSA + NEtFOSE)}}{\text{20 ppt}} + \frac{\text{48 ppt (PFDA)}}{\text{300 ppt}} = \text{1.09}$$

EXAMPLE #3

A combination of PFAS substances with EPA health indicators and without EPA health indicators

detected level → 7.2 ppt (GenX)

$$\frac{\text{7.2 ppt (GenX)}}{\text{10 ppt}} + \frac{\text{20 ppt (PFBS)}}{\text{2,000 ppt}} + \frac{\text{7 ppt (FOSA + NEtFOSAA)}}{\text{20 ppt}} = \text{1.08}$$

EPA health indicators: 10 ppt, 2,000 ppt

DHS safety standard: 20 ppt

If the Hazard Index is greater than 1, your water utility should take action.
Table courtesy of MEA.

How does PFAS get into drinking water?

PFAS can get into drinking water when products containing them are used or spilled onto the ground or into lakes and rivers as well as from manufacturing and disposal. PFAS move easily through the ground, getting into groundwater that is used for some water supplies or for private drinking water wells. When spilled into lakes or rivers used as sources of drinking water, they can get into drinking water supplies. PFAS in the air can also end up in rivers and lakes used for drinking water.

How are people exposed to PFAS?

Drinking food or water containing PFAS is the main cause of PFAS exposure. PFAS chemicals cannot be easily absorbed into the skin, so contact with water that contains PFAS poses a very low health risk. The next article will discuss exposure to PFAS from eating fish from Wisconsin waters.

Credit Midwest Environmental Advocates' *PFAS FREE DRINKING WATER: A guide to talking with local officials about PFAS pollution in municipal drinking water* for much of the information in this article and the introduction. MEA has been a significant partner in CWAC's work, especially with legal actions, for the past several decades.

Other Resources:

https://www.militarypoisons.org/testing-and-research

NCI PFAS Exposure and Risk of Cancer

DNR's Drinking Water System Portal

EPA Certified Labs for drinking water testing.

The labs on the DNR's list are all certified for PFAS testing in Wisconsin as of July 5, 2023.

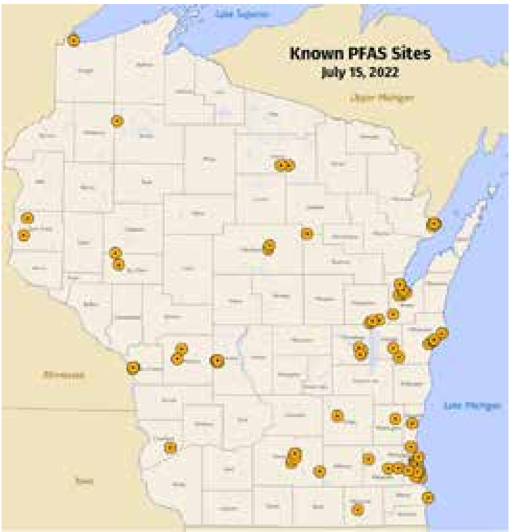
Editor's note: Hear Dr. Beth Nearly talk about the health risks from PFAS exposure and how to minimize them at our conference on October 27. See the details and registration on page 13.

Where PFAS are Found in Wisconsin

By Gracyn Holcomb, Administrative Assistant

High levels of PFAS have been found in drinking water in Marinette, Peshtigo, Rhinelander, Town of Campbell found on French Island, Eau Claire, Wausau, Weston, Rib Mountain, Rothschild, Madison, Marshfield, Mosinee, and the Town of Stella according to a study done by Milwaukee Journal Sentinel. More recently, a PFAS plume has made its way into the Bay of Green Bay, moving into Lake Michigan, and contaminating the Great Lakes. Contamination of soil is also occurring throughout the state.

The Wisconsin Department of Natural Resources set a standard for PFAS of 70 parts per trillion (ppt) in the beginning of 2022. However, as of early 2023, state officials from the Health Department recommend PFAS contamination levels to be 20 ppt or lower. The Environmental Protection Agency has proposed a national



The map shows the approximate locations of WDNR PFAS contamination found through testing municipal drinking water, locations with PFAS-related fish, and waterbodies throughout Wisconsin sampled for PFAS, as of July 2022.
Credit: Wisconsin Department of Natural Resources
An interactive PFAS map can be found here:
https://dnr.wisconsin.gov/topic/PFAS/DataViewer

PFAS regulation of 4 ppt, as of March 2023.

The source of the Green Bay contamination has been traced to Tyco Fire Products, which has been the main source of PFAS contamination in groundwater and private drinking water wells around the Marinette/Peshtigo area. The forensic technique used in the study was PFAS fingerprinting, a process that uses rations of individual PFAS compounds to identify specific PFAS contaminants and their sources. Using PFAS fingerprinting in Green Bay, researchers found that the PFAS were nearly identical to those associated with Tyco and other firefighting foams that include PFAS as an active ingredient.

Marinette and Peshtigo have determined their PFAS contamination in groundwater and drinking water to be linked to Tyco Fire Products, a subsidiary of Johnson Controls. The areas surrounding Tyco Fire Products operation have some of the highest levels of PFAS contamination in soil and ground water, with 254,000 ppt being found as the highest levels tested.

The Town of Stella has one of the highest levels of PFAS contamination in the United States, with contamination as high as 35,000 ppt in groundwater and drinking water. The contamination has been linked to 3M supplying Ahlstrom Rhinelander LLC papermill with PFAS contaminated materials. The waste from the papermill was later spread by land application on farm fields in Oneida County, causing contamination of private drinking wells.

The table below shows the PFAS contamination of drinking water Northeast Wisconsin cities, above the EPA's recommended standard of 4 ppt. This information comes from the DNR, in which NG/L is equivalent to ppt, and as noted, Valders is over the Wisconsin Department of Health's recommendation of PFAS contamination at or below 20 ppt.

Northeast Wisconsin Cities with the Highest Levels of PFAS Above the EPA				
Contaminant	Measured Amount	Units	Location/Name	PWS Type
PFOS	4.8	NG/L	Sturgeon Bay Waterworks	Municipal community
PFOA	23	NG/L	Valders Waterworks	Municipal community
PFOS	5.6	NG/L	Waupaca Waterworks	Municipal community
PFOA	8.7	NG/L	Kewaunee Waterworks	Municipal community

Furthermore, PFAS contamination has been found throughout the entire state, with more communities being impacted as more testing continues. In Madison, discharged firefighting foam has migrated through the soil and into the water. Starkweather Creek faces the worst contamination, but PFAS has also been found in high levels in Lake Monona, Lake Waubesa, Lake Kegonsa, and a portion of the Yahara River. In Milwaukee, PFAS contamination was found in ground and surface water, in which contaminated water has flowed out to Lake Michigan. According to Milwaukee Water Works, Lake Michigan is where the city obtains most of its drinking water.

PFAS contaminating groundwater and drinking water continue to raise concerns regarding the impact on human health. The WDNR and other state officials have failed to act to implement widespread testing for PFAS. Wisconsin needs to utilize the latest EPA PFAS recommendations to determine safe levels in drinking water. You can take matters into your own hands by contacting your water utility to ask for their PFAS testing reports or invest in PFAS testing of your private well to ensure your drinking water remains safe. See the related articles and resources on PFAS testing and filtering equipment.

Sources:

https://pulitzercenter.org/stories/forever-chemicals-are-growing-problem-heres-what-we-found-when-we-tested-wisconsins

https://news.wisc.edu/northeastern-wisconsin-pfas-plume-moves-into-green-bay-via-groundwater/

https://www.wpr.org/state-regulators-federal-assistance-investigate-pfas-levels

https://www.jsonline.com/story/news/investigations/public-investigator/2023/03/24/new-federal-pfas-guidance-has-wisconsin-towns-scrambling/70013638007/

PFAS and Consuming Wild Caught Fish

By Charlie Frisk

Wild caught fish are usually considered to be one of the healthiest foods available. Wild fish are organic, natural and if properly managed a sustainable source of high quality protein. However, in recent decades mercury, PCBs and now PFAS have reared their ugly heads and created doubt about the wisdom of consuming wild caught fish.

Recently, at a conference attended by commercial fishermen and DNR fishery biologists, the WDNR Secretary asked everyone at the table what keeps them up at night. "I told him PFAS," said Charlie Henriksen, the owner of Henriksen Fishing Company in Door County.

Henriksen went on to say, "I promote our fish as healthy, and I certainly want them to be as healthy as anything else out there. I think they are, but when that worm turns, it's going to be difficult."

The DNR has tested various fish for PFAS in Lake Michigan, of those tested all contain the chemical. “We consider PFAS ubiquitous,” said Sean Strom, a fish contaminant specialist at the DNR.

As new scientific understandings of PFAS emerge, the EPA is ramping up its control of the chemicals. In March of 2023, the EPA proposed its first-ever nationwide, legally enforceable limits on PFAS in drinking water, including a reduction in the acceptable level of PFAS consumption through any source, which would include fish consumption.

The EPA’s proposal has not yet been approved, but if state regulators were to follow the EPA’s proposal, the DNR’s data would suggest that most fish in the Bay of Green Bay would be deemed unsafe to eat.

Currently the DNR has PFAS advisories for only two fish species in Green Bay: rainbow smelt and rock bass, and no advisories for Lake Michigan.

Unfortunately, for anglers and their families in this area, Green Bay appears to be a hotspot for PFAS contamination. Wild-caught freshwater fish in general have higher PFAS levels than farm raised, or wild-caught ocean fish, and the highest levels are found in Great Lakes fish.

In the EPA study the average for wild-caught fish in the entire U.S. was 6.6 PPB (parts per billion) for PFOS (the PFAS derivative that shows up in fish), but walleye caught in Green Bay off of Jacksonport were at 11.5 PPB and some areas in Green Bay levels were as high as 18 PPB.

Local fishermen, Matt Beaver, holding a large walleye caught in the bay of Green Bay. Walleyes are one of the most popular eating fish from the bay.

So should we or should we not be eating fish from Green Bay and Lake Michigan? The answer you will get depends a lot on who you are listening to.

“There needs to be a lot more research before we say, don’t eat fish,” commercial fisherman Henriksen said.

Carin Stuth, owner of Baileys Harbor Fish Company, said she shares Henriksen’s concern. “I think it’s too early for us to generalize a national study on what the fish population is in the Great Lakes or the bay of Green Bay,” said Stuth, whose family has been fishing in the area since the mid-1800s.

Sean Strom, fish and wildlife toxicologist with the WDNR said, “You have to weigh the pluses and minuses of any contaminant with the beneficial aspects of consuming fish. That’s the balancing act.”

So far, the pluses win out for Hans Koyen, the general manager of KK Fiske Restaurant on Washington Island. KK’s prides itself on selling fresh fish caught by owner Ken Koyen, the last commercial fishermen on the island. Hans said PFAS isn’t yet a big concern for him or his father, or their customers. “Business is great,” he said. If new fish advisories were issued, he would note them on the menu in the interest of transparency but let customers decide what to eat.

As for fishing, he said, “It’s a total way of life for us, and an income that helps sustain the whole community, because it’s one of the very few things that’s totally local.”

On the flip side of the coin, David Andrews, a chemist at the advocacy organization Environmental Working Group, has a much less positive viewpoint on consuming wild-caught fish.

After studying the data from fish from the entire country, not just the more highly contaminated Great Lakes fish, he had this to say. “We were surprised by how incredibly high the levels were, even a few servings of freshwater fish could be a major source of exposure to PFOS, in particular, over the course of a year for someone.”

There is a lot at stake in the PFAS issue; people’s health, the livelihoods of commercial anglers and the businesses that sell their fish, recreation and the pleasure of eating their catch for anglers, and the reputation of the Great Lakes as a source of clean water.

In the next few years CWAC will watch and possibly play a role in how the PFAS issue plays out for the Great Lakes. As for now, follow DNR guidelines for consuming fish that might be contaminated with PFAS. Knowledge about PFAS is evolving rapidly, so if you consume wild-caught fish it will be important to stay up to date on new DNR fish consumption advisories as they develop.

Source: Wisconsin Watch. A non-profit, non-partisan investigative news outlet.

Editor’s note: Attend our PFAS conference on October 2 to hear the DNR’s Jack DeMarais talk about fish contamination from PFAS. Where and what species? See the conference details and registration on page 13.

~ CONSUMPTION ADVICE FROM THE WDNR ~

Following fish consumption advisories provides you the health benefits from eating fish while reducing your risk from contaminants.

• Before going fishing, use the Choose Wisely Guide (pdf) to determine if your fishing spot has special advice and then follow the consumption advice appropriate for the species and length of fish you’d like to eat.

• You can also search for advice for any waterbody in the state using the online Find Advice tool.

The Relationship Between PFAS and Microplastics

By Dave Verhagen

There is emerging science linking some PFAS to the microplastics being found everywhere on Earth, including within the bodies of most people. Microplastics have joined PFAS compounds among our biggest public health concerns today. Microplastics are those tiny, even microscopic particles of plastics that shed from common items such as water and soda bottles, food packaging (especially take-out containers), upholstery, clothing, and myriad other items common to the modern age.

It was thought that the very reason PFAS persist in the environment would prevent them from binding to plastic particles. PFAS are used in rain gear because they are hydrophobic and repel water. And they made possible the first non-stick cookware because coatings of Teflon, a commercially popular PFAS product, prevented cooked food from sticking to pans coated with it. These same properties were thought to be the reason it persisted in the environment, that it wasn't interacting with anything else. It is apparent now, however, that it was an overly optimistic assumption. PFAS are widely used in the production of raw plastics and are also included in many formulations of plastics. Thus, their affinity should not be such a surprise.

Verisk is an organization serving the insurance industry. It focuses upon risks, analyzing them to provide guidance for government and industries. It's February 2022 journal, *Visualize*, surveyed research on the relationship of microplastics to PFAS and found research concluding:

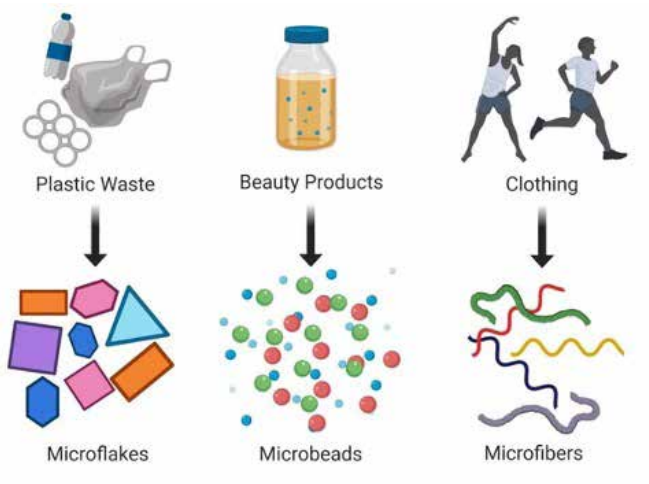
- Some micro plastics contain PFAS, including PTFE (polytetrafuorethylene) and PVF (polyvinyl fluoride).
- Plastics such as PVC (polyvinyl chloride) may include PFAS during manufacturing.
- Products coated in PFAS, such as synthetic fabrics, etc, eventually disintegrate into microfibers during wear and laundering.
- Polymeric PFAS can break down into micro plastic particles.

The journal went on to cite research that PFAS treated microfibers were not likely removable by wastewater treatment plants and would wind up being dispersed into the environment. Notably, groundwater near landfill sites have been found to contain both microplastics and PFAS above safe levels.

A separate study published by *Water Online* on April 13, 2021, investigated how microplastics in the environment can concentrate PFAS pollutants. In the study, different types of microplastics were submerged in a lake for one and three months. Samples were placed near the surface of the water, and also near the bottom of the lake. As a control, samples in the lab were submerged for the same period of time in clear water.

The results were startling. In the lab, the plastic particles absorbed PFAS out of the clear water at one-seventh to one-fourth the background concentration of PFAS in the water. But in the lake, the same particles absorbed PFAS to concentrations of 24 to 259 times greater than the background concentration.

Knowing microplastics can absorb PFAS was an important revelation. Researchers at the University of Maine have led an international effort to produce a model that predicts which microplastics can absorb PFAS. The model matches which specific PFAS are absorbed by each kind of microplastic, and at what concentrations. Successful implementation of their model will save years of work testing the thousands of PFAS that have been found in freshwater and saltwater environments.



We are still in the early stages of discovery about PFAS health issues. The microplastic PFTE in particular illustrates how widespread the compounds are in our lives. Brands from Teflon to Gore-tex are just two examples of products in which PFTE is pervasive. But almost every industry employs PTFE compounds as lubricants or additives in its products. The wiring insulation in your home, car, and computer all employ PTFE compounds. Plumbing parts, faucets and even some well water pumps and water supply pipes may contain PFAS.

Risk from exposure to PFAS rises over time as PFAS laden microplastics accumulate within the environment. We now know that all plastics break down into smaller particles, and that many of them absorb and retain PFAS compounds. What is still to be learned is how we will reduce our exposure to them and reduce the harm that they inflict upon us.

Further questions include just what liability the petrochemical companies must assume for putting PFAS into the environment. And it is not just finding a way to clean up some PFAS, either. It is high time that these manufacturers are regulated. The capability for full recycling of every plastic compound must become mandated. For too long, the plastics industry has used our environment as a disposal site without consequence.

Counteracting PFAS — Remediation, Prevention, Treatment, and Testing

By Debra Noel

PFAS chemicals (often referred to as forever chemicals) have been contaminating and accumulating in our ecosystem since the 1950's with production of commercial products and firefighting foam. Recent tests and research have found it to be in almost all surface waters both inland and oceans, soil, drinking water, foods, many products, wild and domestic animals, and humans. The public is finally being made aware of the health and reproductive impacts PFAS has on people and animals.

There are studies that show how the bay of Green Bay is being contaminated from PFAS as a plume of contamination is moving into Green Bay from the heavily contaminated areas in Peshtigo and Marinette.

Private and government institutions, scientists, activists, and environmental groups are working on solutions to remove and prevent exposure to forever chemicals. Recent actions and research being done to reduce this problem include detection, remediation, degradation, filtration, product and material alternatives, and detoxifying people and animals. Some countries and states are restricting or banning these chemicals and products containing them. For more information go to: PFAS Bans, Restrictions Go Into Effect in States in 2023 (1) (bloomberglaw.com); Efforts underway in Europe to ban PFAS compounds | News | Chemistry World

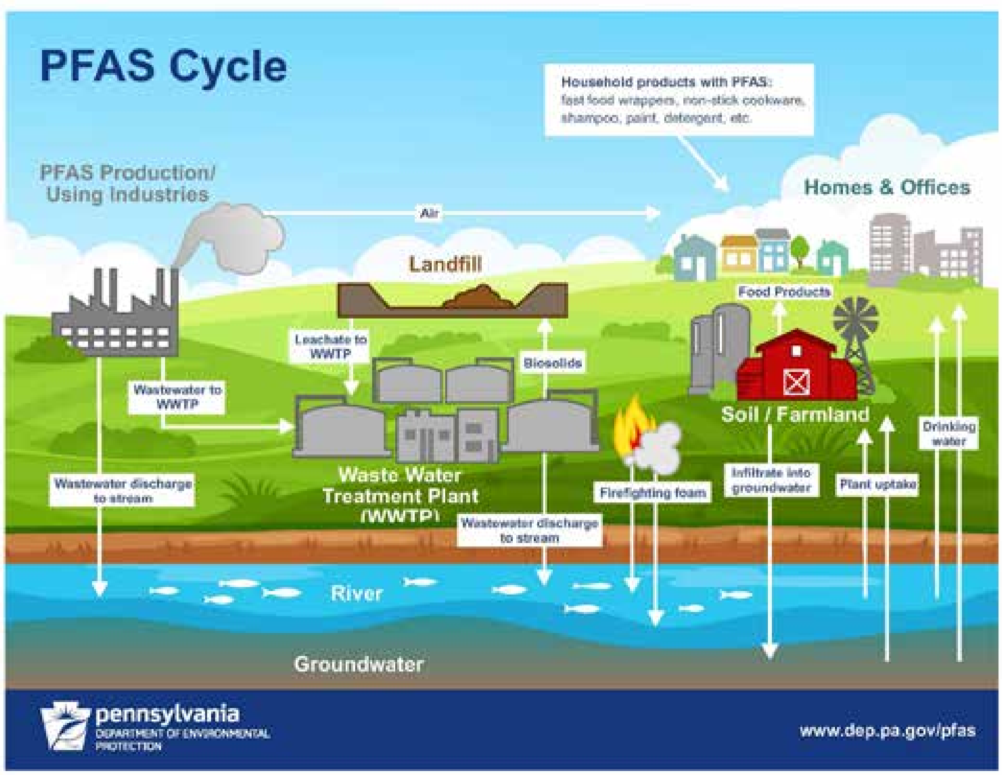
This interactive map on the link Wisconsin PFAS Interactive Data Viewer (arcgis.com) is a good way to keep informed on areas affected and testing being done. Sewage treatment biosolids spread on fields can increase the spread of these chemicals onto soils, groundwater, and tributaries. Most airports and military bases are hot spots due to the use of firefighting foam with high amounts of PFAS chemicals for training practices.

Water Treatment

The current water treatment systems that can remove PFAS and other contaminants from drinking water include Granulated Activated Carbon (GAC) filtration, ion exchange, and reverse osmosis. The EPA recommends GAC as the most effective treatment for PFAS chemicals. GAC is in high demand and production; however, the GAC can be regenerated with extreme high temperatures to burn off the PFAS contaminants. Ion exchange and other PFAS collection methods still must dispose of contaminated waste. That's a problem. There are new technologies that can break down the PFAS chemical, which will be discussed later. Thermal destruction of PFAS during full-scale reactivation of PFAS-laden granular activated carbon—DiStefano—2022—Remediation Journal—Wiley Online Library

The Green Bay Water Utility has not seen a concerning amount of PFAS contamination based on testing since 2018. They are testing regularly and may add GAC filtration if needed. Green Bay's source for drinking water is Lake Michigan via a pipeline through Kewaunee County. See the 2022AnnualWaterReport_English.pdf (squarespace.com)

At home or traveling, there are a few portable filters that remove most or all PFAS for drinking water. Make sure the filtration system is certified for removing PFAS. The following article has a list of portable filters that have good ratings with the Environmental Working Group (EWG). Getting 'forever chemicals' out of drinking water: EWG's guide to PFAS water filters | Environmental Working Group. Whole house or drinking water filtration systems and Granulated Activated Charcoal filters are EPA recommendations. However, there are disposal concerns as noted in Reducing PFAS in Drinking Water with Treatment Technologies | US EPA.



Testing

The first step to protection is detection. Testing for PFAS on water/ well samples is done in certified labs for official results and is expensive ($300-600) due to the cost of lab equipment, techniques and trained staff that are required. Some resources can be found here: ASDWA-PFAS-Lab-Testing-Primer-FINAL-02032021.pdf; Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) Tech Brief (epa.gov); Microsoft Word—PFAS for Private Well Owners DRAFT wma (Autosaved).docx (ngwa.org)

Alternatively, kits are available at low cost of $79.00 through Cyclopure which offers an affordable way to test for many PFAS chemicals. Learn more at: Water Test Kit PFAS | Cyclopure Read a testimonial at: The need for affordable PFAS water testing (themainemonitor.org)

New Technologies being studied.

Breaking down the PFAS bonds into harmless substances in wastewater with less cost and energy requirements is in the works. Some of these methods include sodium hydroxide, iodide, UV and other methods. Here is a list of articles that describe these methods: PITT Research Brief Electrochemiacl Oxidation (epa.gov); 'Forever chemicals' destroyed by simple new method—Northwestern Now; New UBC water treatment zaps 'forever chemicals' for good; Just 3 ingredients can quickly destroy widely used PFAS 'forever chemicals' (sciencenews.org)

Technologies are being developed for removing PFAS chemicals from the environment. Soil remediation is being studied in Madison WI using bacteria: https://pbswisconsin.org/news-item/major-promise-big-questions-flow-from-a-pfas-cleanup-study-in-madison/

Northern University Michigan is studying hemp uptake of PFAS from soil and then using fungus and microbes to break it down: https://news.nmu.edu/nmu-researches-hemps-ability-remediate-pfas

Texas has a research project using fungus to break down PFAS chemicals as well. Environmental Factor—September 2022: Plant-based material can remediate PFAS, new research suggests (nih.gov); https://www.centraltexasmycology.org/workshops/maximizing-the-fungal-potential-for-bioremediation

Another approach from Myco Rising, with the help of citizens to clean up the Starkweather creek in Madison, is using mushrooms mycelium to make filters for storm water to capture contaminants including PFAS: Cleaning the Creek with Mushrooms—WORT-FM 89.9 (wortfm.org)

Alternative Chemicals

It is difficult to replace some PFAS chemicals with safe ones that can reproduce the purpose of these chemicals in products. "Can we live without them or risk living with them?"

Johns Hopkins APL Explores Alternatives to PFAS in Firefighting Foams | Johns Hopkins University Applied Physics Laboratory (jhuapl.edu)

It's Time To Switch to PFAS-Free Firefighting Foams | Environmental Working Group (ewg.org)

Legal issues and regulations

It should be noted, Republican lawmakers in WI turned down allowing some critical testing requirements for PFAS and limit DNR to some testing and responsibility enforcement. Republican lawmakers propose plan to combat PFAS pollution in Wisconsin | AP News

Republicans remove PFAS measures from Wisconsin state budget (jsonline.com)

More Resources:

Sewage sludge spreading leads to farm groundwater PFAS contamination—The PFAS Project Lab

Alarming toxic 'forever chemicals' found in animals' blood—study | PFAS | The Guardian

Wildlife warning: More than 330 species contaminated with 'forever chemicals' | Environmental Working Group (ewg.org)

PFAS | Midwest Environmental Advocates (midwestadvocates.org)

https://madison.com/news/local/govt-and-politics/dane-county-sues-dnr-over-requirements-to-keep-pfas-out-of-lakes-streams/article_847eb52e-b06a-529c-a0d3-175a796e5542.html; https://pbswisconsin.org/news-item/republican-lawmakers-propose-plan-to-combat-pfas-pollution-in-wisconsin/

~ A Guide to Water Filters for Removing PFAS from Home Drinking Water ~

Purefast® Water Filter Cartridges

These cartridges by Cyclopure are designed to work with Brita pitchers that use standard filters, such as the following: Soho (5 cup), Space Saver (6 cup), Tahoe (10 cup), Ultramax (27 cup)

Their instruments are calibrated to a limit of quantification of 2 ppt for GenX and 1 ppt for all other PFAS. Non-detected levels indicate that the concentration of PFAS is below these limits of quantification.

Each Purefast® filter comes with a pre-paid mailer to return used cartridges to their lab for safe disposal and cost $45 plus $8 for shipping.

The Environmental Working Group (EWG) recommended the following countertop PFAS filtering devices. (They did not test the Purefast cartridge.) They noted that to calculate the number of replacement filters – and thus the cost of the first year of using each filter – they assumed a household of four people filtering 2 gallons of water per day for drinking or cooking." More can be learned at their website: https://www.ewg.org/research/getting-forever-chemicals-out-drinking-water-ewgs-guide-pfas-water-filters

1. Travel Berkey
   a. Cost: $344
   b.100% removal of tested PFAS (source: EWG)
2. ZeroWater
   a. Cost for 7-cup pitcher: 10 options from $33.32. However, 1-year cost is $646.06 (the cost of 37 filters and initial cost).
   b. 100% removal of tested PFAS (source: EWG)
3. Epic Pure Water Filter
   a. Info from the EWG article:
      - Initial cost: $70
      - One-year cost: $247.87 (initial cost + 5 filters)
      - Reduction of tested PFAS: 98%

   b. There are other PFAS filters that are also listed on that website.
4. Clearly Filtered
   a. Initial cost: $90
   b. 1-year cost: $436.50, according to EWG (initial cost + 7 filters/year)
   c. Based on the EWG article, it's not as user friendly and accessible as the others.

Defending the Spills Law and DNR's efforts to keep Wisconsin families safe from PFAS and other toxic chemicals.

By Midwest Environmental Advocates (MEA)

Wisconsin Manufacturers and Commerce (WMC), the state's largest business lobbying group, is suing the DNR in an attempt to undermine Wisconsin's Spills Law—a key environmental health protection that keeps Wisconsinites safe from exposure to hazardous substances.

The lawsuit was filed in February by Wisconsin Manufacturers and Commerce and Leather Rich, Inc., who are suing DNR to limit the agency's ability to investigate environmental contamination and require responsible parties to clean up contaminated sites. The lawsuit threatens to fundamentally undermine the Spills Law, a bedrock environmental and public health protection that has protected the people of Wisconsin for more than 40 years.

MEA is participating in the case on behalf of Citizens for a Clean Wausau, Clean Water Action Council of Northeast Wisconsin, River Alliance of Wisconsin, Wisconsin Environmental Health Network, and Doug Oitzinger, a former mayor of Marinette.

Together, these organizations represent thousands of people across the state who will be directly impacted by the outcome of the case. Our clients, however, aren't the only ones who would be hurt if WMC prevails. The outcome of this case will have real-world implications for virtually every community in the state.

WMC's lawsuit could remove the only meaningful public health protection we have to address PFAS contamination in Wisconsin. Under the Spills Law, DNR is providing critical assistance to people in Marinette, Peshtigo, La Crosse and other communities devastated by PFAS contamination. If WMC prevails, all that assistance would vanish—the required well testing, the orders plans for cleanup and remediation—it would all come to a halt.

If the Spills Law is undermined, Wisconsin will lose its most effective tool for protecting communities from toxic contamination.

At a hearing in June 2022, a Waukesha County Circuit Court granted a stay on an April decision that limits the state's authority to address toxic PFAS contamination under Wisconsin's Spills Law. The ruling preventing the decision from taking effect will allow the DNR to continue cleaning up PFAS contamination and providing bottled water to families whose drinking water has been contaminated.

MEA filed an amicus brief successfully arguing for the stay pending appeal by the DNR. We believe the courts will ultimately overturn the circuit court decision, and that the DNR's efforts to keep Wisconsin families safe from PFAS contamination will ultimately be vindicated.

An appeals court decision is expected in late 2023.

Midwest Environmental Advocates is a nonprofit law center that combines the power of law with the resolve of communities facing environmental injustice to secure and protect the rights of all people to healthy water, land, and air. MEA has provided significant support to CWAC to protect human health and the environment.

Donations for our legal fees for this case can still be made to CWAC labelled "for legal fees" and sent by check or donate online.

YOUR VOICE MATTERS

Public engagement is critical for ensuring that your community's drinking water is free from toxic PFAS chemicals.

TIPS FOR MAKING YOUR VOICE HEARD

Identify the right decision makers.
Start by contacting your elected officials. You may find that they redirect you to staff at the water utility. This is not uncommon, especially when elected officials feel like they don't know enough about the issue. Talking with water utility staff can be helpful, but don't give up on talking with your elected officials. They have the power to order your water utility to test.

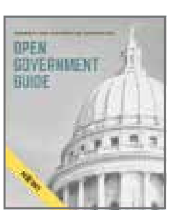
Educate, educate, educate!
Provide decision makers with resources to help them better understand the issue.

Don't be intimidated.
Public officials want to hear from you. They work on many different issues and may not know as much about a specific issue as you do.

Stay on topic.
Your message will be clearer if you avoid political statements and stay focused on the issue at hand.

State your position clearly and concisely.
Make sure decision makers understand what you want them to do.

Be kind and courteous.
Be calm and respectful even if you disagree with someone else's point of view.



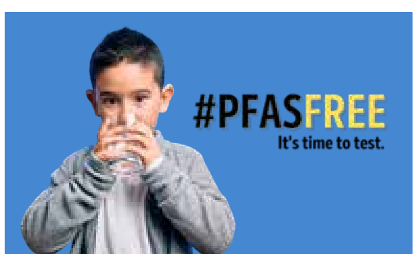
If you believe local officials are withholding information, you may need to submit a public records request to obtain the information you're asking for. MEA's **Open Government Guide** can help. Learn more here.

ADDITIONAL RESOURCES

STATE OF WISCONSIN
Wisconsin PFAS Action Plan
WI Department of Natural Resources PFAS Page
WI Department of Health Services PFAS Page

US ENVIRONMENTAL PROTECTION AGENCY
EPA PFAS Action Plan
EPA - PFAS Page
EPA PFOA & PFOS Health Advisory

COMMUNITY ORGANIZATIONS
#PFASFree Wisconsin
Citizens for Safe Water Around Badger
Midwest Environmental Advocates
S.O.H2O



Midwest Environmental Advocates partnered with other environmental and public health groups to launch **#PFASfree Wisconsin** in 2021. The goal of the campaign is to raise awareness of the danger that PFAS chemicals pose to public health and to build a broad base of support for testing all public drinking water systems in Wisconsin for the presence of PFAS. Learn more about the campaign at pfasfree.org

Courtesy of Midwest Environmental Advocates. For a template for writing a letter to a water utility, go to https://midwestadvocates.org/assets/resources/PFAS-Guide-for-Wisconsin-Residents.pdf

The Action in Clean Water Action Council

By Dean Hoegger, CWAC President and Executive Director

Have you renewed your membership?

If you have not done so, please renew your membership for 2023. Memberships are for a calendar year. We keep your membership active even when you renew later in the year, so please renew if you have not done so.

To check your membership status, look at your address label which shows your last renewal year. Emailed newsletters include the last renewal year in the body of the email and a personal request for your renewal, if needed. Please consider a more generous gift if you forgot to renew in 2022. **Membership donations are critical as they account for nearly half of our operational funds. Employee salaries are paid from a trust fund, Packers concession stands, and grants, not from membership donations.**

You can mail your membership donation with the enclosed form or go online to http://www.cleanwateractioncouncil.org/membership/. If we have your current membership information, then all you need to do is click on the "Donate" button on our website's home page or in our email signature block. Please know that you do not need a PayPal account to pay with a credit card, and a monthly donation is an option.

We are thankful for members who wish to sponsor any of the following starting at the $250 level: Newsletter ($800), intern ($500), rent ($2500), or student administrative assistant salary (any amount). Please indicate the purpose of your donation.

We would like to thank the members who have volunteered to help with our Packers concession stands, water sampling at Bairds Creek, and mailing the newsletter. There are many volunteer opportunities with CWAC. Contact us to discuss the ways you can volunteer to help us protect human health and the environment.

Please consider joining our Planned Giving Circle of Friends to bequeath a donation to CWAC from your estate. See the planned giving mini poster in this issue.

Below are the actions that member donations supported in the last three months.

Be sure to contact us if an environmental issue arises in your community. CWAC is here to support citizen action.

Legal Actions

As a citizen organization, an important function of CWAC is to take legal actions on behalf of our members to protect human health and the environment. Here is an update on ongoing actions.

Our Effort to Ban High PAH and Coal Tar Pavement Sealants Continues

These sealants contain polycyclic aromatic hydrocarbons (PAHs), which are known to be a serious health threat. According to the Army Corps of Engineers, children living near surfaces treated with this sealant have a 13-fold increased risk of developing certain cancers. Lifetime exposure can result in a 38-fold higher risk of cancer.

We gave presentations this summer to the Door County Land Conservation Committee and the Ephriam Village Green Tier Committee. We provided literature and presentation materials to the Door County Health Department. The towns of Gibraltar and Jacksonport recently passed bans on this hazardous product. We are seeking more presentation opportunities. According to Representative Joel Kitchens, the state will not ban the product, at least not in the next few years. He encouraged us to seek local bans through village and town ordinances.

Contact us to help get an ordinance passed in your community. Click this link for a slide presentation on the topic: https://www.youtube.com/watch?v=0xjvi-leDHg&feature=youtu.be

CWAC Alerts Readers about Pollution Permits, Hearings, and Files Comments.

We monitor notices for new water pollution permits and renewals, and then alert over 1,200 readers via our emailed Weekly Update. Email us at contact@cleanwateractioncouncil.org to receive the privacy protected emailed update sent once a week.

CWAC commented, along with many other citizens regarding the significant expansion planned by S&S Jerseyland Dairy in southern Door County. The concentrated animal feeding operation, or CAFO, had asked for an expansion from 7,654 animal units to 14,711 animal units representing a mix of milking and dry cows, small heifers, and calves.

For the first time in our recollection, the DNR applied the concerns expressed by many speakers at a hearing and via written comment. The DNR made modifications to the final permit. While a reduced expansion to 10,231 animal units was permitted, S&S must also install ground water monitoring wells and submit a groundwater monitoring plan.

Whether S&S follows the requirements in the permit, and even whether CAFO permits will actually be required, is now in jeopardy. The Wisconsin Dairy Alliance and Venture Dairy Cooperative are suing the DNR to end its authority to require permits that prevent water pollution from commercial farms. The Wisconsin Manufacturers and Commerce is representing the plaintiffs. If successful, citizen participation in reviewing and commenting on permits would likely end. This is a serious threat to human health and the environment and the democratic process.

CWAC is seeking potential opportunities to be an intervenor in this lawsuit.

The Judge in Wisconsin Manufacturers and Commerce vs the DNR in Waukesha Circuit Court Ruled Against DNR and the Public but Stayed the Decision.

This case is now before the State Court of Appeals, and we expect a ruling this fall. See *the CWAC Fall 2022 Newsletter* for a detailed review of the case. We are currently supporting the DNRs role in protecting the public from PFAS and other chemicals by submitting friend of the court briefs. We are now holding our breaths for a ruling in favor of the DNR and the citizens they protect. Loss of the DNR's authority would likely significantly increase pollution by a host of chemicals no longer regulated by the spills law.

The Petitions to the EPA for Enforcement of The Safe Drinking Water Act and the Clean Water Act.

The EPA took no recent action on these ongoing petitions. It is likely that meetings with EPA will be held this fall.

Educational Efforts in the Community

Planning for the PFAS Conference: A Growing Health and Environmental Concern

Planning for this conference is moving along. The main presentations have confirmed speakers. Panel discussion confirmations are coming in. We hope you will attend. See the conference poster and registration form in this issue.

Lake Michigan Day Event

Staff accompanied interns and our newest board member, Jayne Black, to Lake Michigan Day in Manitowoc where we exhibited, listened to presentations, and networked with representatives from other organizations.

Meeting with Brown County Land and Water Conservation Department

We invited CWAC members to meet the new County Conservationist, Nick Peltier, and thank retiring conservationist, Mike Mushinski, for his work. Guests learned about the cooperation between CWAC and the conservation department to protect streams from pollution resulting from violations of plowing too close to a stream or wetland. Several 35' setbacks resulted from this cooperative effort.

We also learned about the department's desire to reduce the phosphorus index, which in the long term would decrease the amount of phosphorus impairing our water ways. (See Phosphorus Impaired waterways at https://arcg.is/1mD4aj) A plan to educate the public on how to speak to the DNR and elected officials about lowering the phosphorus index was discussed.

Food Waste Composting Education to Reduce Organics and Methane Gas in Our Landfills.

We have composters available for $60 and will provide individual or group instruction on how to compost food waste. We will be giving a presentation on October 18 at the East Branch of the Brown County Library. See the ad in this issue.

These Presentations Are Available from CWAC

Here is a list of current presentations that can be given in-person or via Zoom. Call or email us for scheduling. The presentations can be tailored to your group's geographic location, age, and available time. Also, contact us if you would like us to promote or co-sponsor your event or presentation.

- Citizen Action to Protect the Waters of Northeast Wisconsin
- Using Local, State, and Federal Laws to Protect the Waters of Northeast Wisconsin
- Communities on the Road to Zero Waste
- The Health Hazards of Burn Barrels
- The Health and Quality of Life Hazards from Manure Spraying
- The Health Threat from Coal Tar Pavement Sealants
- Micro-plastic Pollution from Clothing
- Food Waste Composting Made Easy

Newsletter Outreach

The Summer 2023 newsletter was sent to 550 members in June. There are a limited number of printed newsletters remaining if you would like to distribute them to a friend, group, or organization. Newsletters are also available on our website at: https://www.cleanwateractioncouncil.org/newsletter/

Get Our Weekly Update by Email

Each Tuesday we email the *CWAC Weekly Update with Actions, Permits, Jobs, Events, In the News Updates, and Resources*. Send us your information by Monday evening for posting the following day. If you are a member with an email address and you are not getting the *CWAC Weekly Update*, check your spam folder before emailing us to request to be put on the mailing list. If you are a member and getting more than one Weekly Update, let us know so we can fix that.

If you are reading this newsletter as a non-member, email us at contact@cleanwateractioncouncil.org to be placed on the free *Weekly Update* emailing list. Emails are sent via BCC to protect your privacy.

Outreach through Newspaper and Radio

CWAC sends press releases to local media, and we are often contacted to comment on developing environmental issues.

Website Updates

Past newsletter issues can be found on the website as well as updated articles and additional resources at https://www.cleanwateractioncouncil.org/

CWAC Provides College Students with Valuable Learning Experiences.

We provide our interns with valuable experiences and strategies for managing a non-profit organization. Rachel Weber is our fall intern. We also hired a former intern, Gracyn Holcomb, as our administrative assistant last November.

Other Actions

Water Sampling for Lower Fox River Water Quality Monitoring

We began water sampling at Bairds Creek in May and will continue through October. This is a summary of the data for the last seven years. Email us if you would like the complete report.

Median Total Phosphorus (2015-2022)		
Map #	*Stream Name*	*TP (mg/L)*
1	Ashwaubenon Creek	0.318
2	Lower Duck Creek (Pamperin Park)	0.144
3	Wequiock Creek	0.114
4	Bower Creek	0.231
5	Upper East River (Mallard Rd)	0.500
6	West Plum Creek (County Line Rd)	1.099
7	Middle Duck Creek (Seminary Rd)	0.180
8	Baird Creek	0.230
9	Lower East River (HLT)	0.182
10	Plum Creek (VandeHey Farm)	0.423
11	Trib to Garner's Creek	0.193
12	Dutchman Creek	0.134
13	Upper Duck Creek (CTH S)	0.180
14	Garner's Creek	0.114
15	Kankapot Creek	0.357
16	Lancaster Creek	0.081
17	Mud Creek	0.097
18	Middle East River (HWY G)	0.400
19	Apple Creek	0.267
20	Neenah Slough	0.086

Stream Monitoring

We examined cultivation near bodies of water that we observed this past year while monitoring for winter manure spreading. With the fields being snow covered, it was difficult to see if the setbacks were being followed. We are pleased to report there were no violations.

Monitoring for Outdoor Event Recycling

We found numerous violations of Wisconsin's event recycling laws but found only one event in full compliance. The Blues on the Bay-Ellison Bay had a successful setup for garbage and recycling and is a model for municipalities who were the worst violators. They were also the least responsive after receiving our letter informing them of the violation and the failure to set a good example for the public.

Successful recycling efforts at Blues on the Bay.

Contact us if you observe a lack of recycling bins at an outdoor event so we can send a letter to the violator.

Fundraising at our Packers Concession Stand

We are again fundraising at Packers games. However, with various vending changes, our profit from the games is down about 75%.

CWAC Attends Meetings with Other Environmental Groups

We attended many of the monthly meetings with directors of other state environmental groups and network with other state and national organizations including a group opposed to the EATS Act—(S.2019 and H.R.4417). If passed, it would block voters and local or state governments from establishing safeguards around the production or manufacture of agricultural products.

Citizen Complaints

Many of our more extensive actions, some requiring legal work, resulted from a follow-up of citizen complaints. Keep us in mind if you have an environmental concern, and our support is needed.

CWAC's Non-Profit Status

To learn more about our non-profit status and financials, go to the Wisconsin Department of Financial Institutions, Credential Lookup, and then go to Credential Search for Clean Water Action Council (https://www.wdfi.org/ice/berg/Registration/Financials.aspx?chid=933009&h=1122515367)

Please follow us on Facebook.
Click here for our page: ***Facebook***

https://www.facebook.com/cleanwateractioncouncil

"The most common way people give up their power is by thinking they don't have any."

- Alice Walker

PFAS: A Growing Health and Environmental Concern

Learn About Ways to Protect Yourself and Your Family

Presented by

Clean Water Action Council of Northeast Wisconsin

Friday, October 27, 8:00 AM – 2:30 PM

with lunch provided

UW-Green Bay, University Union, Room 1965

REGISTER TODAY!

PROGRAM:

Registration and social 8:00-8:30

What are the Health Risks from PFAS Exposure and how to Minimize Them? By Environmental Pediatrician, Dr. Beth Neary

Fish Contamination from PFAS. Where and What Species? By DNR Environmental Toxicologist and Fisheries Biologist, Jack DeMarais

Drinking Water and PFAS. What Testing are Municipalities Doing? What are Testing Options? By CWAC staff

Legal Aspects of Addressing PFAS Contamination and Current Legal Actions. By Rob Lee from Midwest Environmental Advocates

Panel Discussion: Current and Needed Legislative Efforts to Prevent and Remediate PFAS. Panelists include area legislators and Peter Burres from Wisconsin Conservation Voters.

The registration fee is $12 to cover beverage service and a buffet style lunch with gluten free and other non-allergy choices. Register online at https://www.eventbrite.com/e/pfas-a-growing-health-and-environmental-concern-tickets-715351053257?aff=oddtdtcreator , or mail the registration form with a check for $12 or use the QR code at the bottom.

PFAS Conference Registration

Name: ______________________________ E-mail: ______________________________

Address: ____

____

_______ $12 enclosed

Mail to CWAC, P.O. BOX 9144, GREEN BAY, WI 54308 by October 23.

MARK YOUR CALENDAR! Meetings, Events and Happenings

CWAC's EVENTS:

October 4, 3:00 PM – 9:00 PM
Zambaldi Pints with a Purpose Night for CWAC
Zambaldi Beer, 1649 S Webster Ave, Green Bay

Pints with a Purpose is Zambaldi Beer's program to give back to our community. A local 501c3 nonprofit, Clean Water Action Council of Northeast Wisconsin, has been selected. $1 from every pint, flight, to-go growler, or to-go 6 pack sold will be donated to CWAC. Meet board members and learn more about CWAC's past and current efforts to protect the waters of the state. For more information visit here:
https://www.facebook.com/events/1026853895122019

October 14, 7:00 AM – 12:00 PM
CWAC will be at the Saturday Farmers Market
South Washington and Doty Streets, Green Bay

The Saturday Farmers Market presented by BayCare Clinic is in its 107th season with 100+ vendors offering an array of fresh produce, meats, and cheeses, prepared and packaged goods, handmade creations, flowers, and plants, and much more.

The market features live music every week from 9 - 11:30 a.m. and free outdoor yoga from 8 - 8:45 a.m. Come out and enjoy the fresh air, sunshine, and delicious food at the Saturday Farmers Market! For more information visit here: https://downtowngreenbay.com/explore/downtown-events/saturday-farmers-market

October 27, 8:00 AM – 2:30 PM
PFAS Conference Hosted by CWAC
UW-Green Bay, University Union, Room 1965, Nicolet Drive

Join us for an informative conference about the growing health and environmental concern of PFAS. Learn what the health risks from PFAS exposure are and how to minimize them by Dr. Beth Neary. Listen as DNR Environmental Toxicologist and Fisheries Biologist, Jack DeMarais, explains the fish contamination from PFAS. CWAC staff will present on PFAS in drinking water, followed by lunch. After lunch, join Rob Lee from Midwest Environmental Advocates to learn about the legal aspects and actions of addressing PFAS. The conference will conclude with a panel discussion about current and needed legislative efforts to prevent and remediate PFAS contamination. Panelists include area legislators and Peter Burres from Wisconsin Conservation Voters. Register here: https://www.eventbrite.com/e/pfas-a-growing-health-and-environmental-concern-tickets-715351053257?aff=oddtdtcreator

OTHER EVENTS

September 28, 6:00 PM – 7:30 PM
Crafting Conservation – Panel Discussion on PFAS in Drinking Water
Delta Beer Lab, 167 E. Badger Rd, Madison

Join us for an informative panel discussion on PFAS in Madison's Drinking Water. Learn from experts as they share insights, discuss the impact of PFAS, and explore potential solutions. Let's come together to address this critical issue and protect our water resources. Register here: https://wigreenfire.app.neoncrm.com/np/clients/wigreenfire/eventRegistration.jsp?event=653&

September 30, 9:00 AM – 11:00 AM
Habitat Healers
Crossroads at Big Creek, 2041 Michigan St, Sturgeon Bay

Help heal the earth! Volunteers of all ages are invited to help with our land restoration efforts. Wear clothing and footwear that can get dirty and wet and bring a water bottle. Instruction, equipment, and gloves provided along with cookies and lemonade at the end! No need to register in advance and all ages are welcome. For more information visit here:
https://crossroadsatbigcreek.org/event/habitat-healers-17/

September 30, 10:00 AM – 12:00 PM
Fall Hawk Migration
Barkhausen Waterfowl Preserve, 2024 Lakeview Drive, Suamico

Staff from Barkhausen and the Bay Beach Wildlife Sanctuary are teaming up for a special 2-hour hawk program. Registered participants will learn about fall hawk migration, enjoy a naturalist-led hike searching for migrating birds, and even get up close and personal with some live hawks. Pre-registration is required as space is limited. Tickets are purchased online only (unfortunately we are not taking walk-ins for this event). Cost is $5/person (2 and under are free). Register here: https://www.browncountywi.gov/community/parks-department/general-information/events/?i=34c5364258dd-2023-09-30

October 13, 2:00 PM – 4:30 PM
The Ridges Sanctuary: Wisconsin Bat Wingding
Cook-Albert Fuller Nature Center, 8166 State Hwy 57, Baileys Harbor

Curious about Wisconsin's bats? Want to know more about White Nose Syndrome? Join us for the Wisconsin Bat Wingding on Thursday, October 14th! Listen to a presentation by a conservation biologist from the Wisconsin Bat Program, followed by our Bat House Building Workshop!
For more information and to register visit here: https://www.ridgessanctuary.org/event/wisconsin-bat-wingding/

October 16, 7:00pm
Fish Tales Lecture Series: Presenting the Science of Great Lakes Fisheries
Crossroads at Big Creek, 2041 Michigan St, Sturgeon Bay

Dan Egan, author of "*The Death and Life of the Great Lakes,*" will be at Crossroads at Big Creek to discuss his new book, "*The Devil's Element: Phosphorus and a World Out of Balance,*" as a special edition of the Fish Tales Lecture Series. Copies of the book will be available for purchase at the event. The author will sign copies following the presentation. Egan is a two-time finalist for the Pulitzer Prize. He is currently a journalist-in-residence at the Center for Water Policy at UW-Milwaukee's School of Freshwater Sciences. Register here: https://crossroadsatbigcreek.org/event/the-devils-element/

October 20, 5:00 PM – 9:00 PM
Brews in the Zoo
Menominee Park Kiwanis Shelter, 576 Pratt Trail, Oshkosh

A night for adults! Dress up in your best costume! Enjoy local craft beers, costume contests, food trucks, raffles and live music from the band, Conscious Pilot, at this free event. To volunteer contact Kathy Snell at (920)-232-53014. For more information visit here: https://www.ci.oshkosh.wi.us/parks/MenomineeParkZoo/BrewsInTheZoo.aspx

October 21, 7:45 AM – 3:30 PM
Agriculture & Rural Resilience Summit
W.R. Davies Student Center, 77 Roosevelt Ave, Eau Claire

This one-day event is a transformative platform for stakeholders to address pressing climate challenges. Drawing from the success of Climate Fast Forward 2022, attendees will engage with inspiring speakers, participate in facilitated sessions, and utilize unstructured networking time to forge valuable connections.

As space is limited, we encourage you to secure your spot by registering today. Don't miss this opportunity to be part of a collaborative movement towards climate-smart agricultural solutions and resilient rural communities. Registration will close on October 6th. For more information and to register visit here: https://www.wisconsinacademy.org/evenings/agriculture-rural-resilience-summit

October 21, 9:00 AM – 12:00 PM
The Ridges Sanctuary: Citizen Science Symposium
Cook-Albert Fuller Nature Center, 8166 State Hwy 57, Baileys Harbor

The first annual Citizen Science Symposium. As a continuation of our Wisconsin Bat Wingding program, we will provide the opportunity for our Citizen Scientists along with the public to gather in celebration of a successful field season. With a mixture of social time, amusing anecdotes, and a light breakfast, the focus of the symposium is on the great research that our Citizen Scientists are performing. Brief reports from The Ridges Sanctuary, Crossroads at Big Creek, and the Door County Land Trust volunteers will highlight this event. A call for presenters from our various Citizen Science programs will be forthcoming. For more information visit here: https://www.ridgessanctuary.org/event/citizen-science-symposium/

October 21, 9:00 AM – 4:00 PM
Wild Ones Fox Valley: Terrestrial Invasive Species Management
Heckrodt Wetland Preserve, 1305 Plank Rd, Menasha

Introduction to terrestrial invasive species, including what they are, how they affect the environment, how they are spread, and understanding WI NR 40 rule. We would then learn about common invasive species of Wisconsin followed by a hike around Heckrodt to see a handful of invasive species as well as see if students can point some out. Then a combination of inside and outside learning to understand most of the control methods that are possible, and which is best for different situations. Returning to the classroom to go over what making a plan would look like. Finally, going outside to do some service learning and work on whatever seasonal species is available. Register here: https://foxvalleyarea.wildones.org/events/?wo_event_id=5003

October 25, 5:00 PM – 7:00 PM
Wisconsin's Green Fire - Appleton Conservation Social
Bubolz Nature Preserve, 4815 N Lynndale Dr, Appleton

Come connect and socialize while enjoying local drinks and food, all in the name of preserving Wisconsin's natural resources. During each social, you'll have the opportunity to learn about WGF's impactful work and discover how you can get involved. Students and early-career professionals are welcome, as is anyone who cares about conservation! Register here: https://wigreenfire.app.neoncrm.com/np/clients/wigreenfire/eventRegistration.jsp?event=651

October 25, 10:00 AM – October 26, 7:00 PM
National Zero Waste Conference 2023
Zoom

The National Zero Waste Conference is the annual two-day virtual educational and networking event produced by Zero Waste USA with support from their partner organizations. Zero Waste Businesses and Institutions is the focus on Day 1, and Zero Waste Communities is the focus on Day 2. For more information and to register visit here: https://events.humanitix.com/nzwc2023

continued on page 16 >

MARK YOUR CALENDAR! Meetings, Events and Happenings

November 1, 8:00 AM – November 2, 4:30 PM
21st Annual Wisconsin Association for Floodplain, Stormwater, and Coastal Management (WAFSCM) Conference
KI Convention Center, 333 Main St, Green Bay

The Wisconsin Association for Floodplain, Stormwater, and Coastal Management (WAFSCM) will hold its 21st Annual Conference on Wednesday, November 1st and Thursday, November 2nd at the Hyatt Regency in Green Bay, Wisconsin. As always, you expect a great experience at the conference with a dynamic group of professionals coming to share their experience in a variety of water-related issues from all sectors: local government leaders, community administrators, planning agencies, public works departments, developers, consultants, environmental groups, state and federal agencies and students. Register here: https://www.eventbrite.com/e/21st-annual-wafscm-conference-tickets-657091236577

November 16, 6:30 PM – 8:30 PM
Pollinators: From Plants to Produce to People
Evergreen Retirement Community, 1130 N Westfield St, Oshkosh

If you've ever eaten a vegetable, fruit, or nut, you can thank a pollinator. While we most associate pollination with bees, we mustn't forget the unsung heroes like butterflies, moths, birds, bats, wasps, and beetles. Naturalist Jessica Miller from Mosquito Hill Nature Center will teach us about pollination and why habitat protection is crucial. Jessica is an active member of the Wisconsin Monarch Collaborative, focused on increasing native milkweed and nectar plants to offset the drastic decline of monarchs and other native pollinators. For more information visit here: https://www.facebook.com/events/1968301613532222/?ref=newsfeed / https://www.winnebagoaudubon.org/new-events/2023/11/16/pollinators-from-plants-to-produce-to-people

December 2, 9:00 AM – 2:30 PM
Wild Ones Fox Valley: Wisconsin Forests
Ledgeview Nature Center, W2348 Short Rd, Chilton

This course will cover the identification of most native tree species found throughout Wisconsin. We will discuss different forest types in Wisconsin with their representative tree, shrub and herbaceous species. Basic forestry concepts will be covered and will include restoration ideas for different forest types in Wisconsin. Weather permitting, this course will include field activities. Register here: https://foxvalleyarea.wildones.org/events/?wo_event_id=5005

December 8, 12:00 PM – December 10, 2:00 PM
93rd Wisconsin Farmers Union Annual State Convention
Chula Vista Resort, 1000 Chula Vista Way, Wisconsin Dells

Ninety-three years ago, our founders knew family farms were worth fighting for. They gathered in solidarity to set policy that would improve life on their family farms and in their communities. They will continue that legacy as they celebrate Wisconsin Farmers Union's 93rd convention.
For more information and to register visit here: https://wisconsinfarmersunion.growthzoneapp.com/ap/Events/Register/vP3AQXMr

Join CWAC at Pints for a Purpose at Zambaldi Beer

1649 S Webster Ave, Green Bay, WI

October 4, 2023
from 3:00 – 9:00 PM

Pints with a Purpose is Zambaldi Beer's program to give back to the community. CWAC, a local 501c3 nonprofit, was selected and $1 from every pint, flight, to go growler or to go 6-pack sold that day will be donated to CWAC.

Learn more about Clean Water Action Council's work to protect the environment, human health, and especially the waters of Wisconsin. Speak with CWAC board members.

Visit the Facebook event here: https://www.facebook.com/events/654014530168967

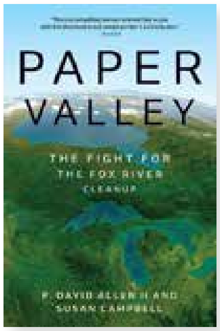
"If we care about protecting our families from the health and environmental threats of PFAS in our air, water, and soil, we must support a "polluter pays" model and develop real solutions that actually address contamination."

-Sen. Shelley Moore Capito, a Republican from West Virginia, is the ranking member of the Environment and Public Works Committee

Book Review - by Dave Verhagen**:**

PAPER VALLEY. The fight for the Fox River Cleanup

by P. David Allen II and Susan Campbell,
Wayne State University Press (2023)



I grew up in the "Heart of the Valley." Paper Valley. And growing up, none of us dared swim in the Fox River. Urban legends circulated that those who tried found a river within the river. A river of slime that slivered about the swimmers' legs.

Wisconsin's extensive forestlands and the power and reach of the Fox river combined to create the world's largest concentration of paper mills here in northeastern Wisconsin. The mills pulped wood and made all kinds of papers. Other mills bought the raw paper and converted it into their own products. And most all of them took water from the Fox, ran it through their production process, and then poured the spent process waters back into the river. Never a thought about it, really. Not from the mill owners nor the public.

But the fish died off and weren't coming back. The air and water smelled bad and there were plenty of other issues. Earth Day happened, and people began to question using waters that according to the Wisconsin State Constitution belong to all of us, as a free waste disposal site for industry.

Paper Valley opens with the arrival in Green Bay of the book's authors; one a scientist with the U.S. Fish and Wildlife Service, and the other a new reporter for the Green Bay Press-Gazette. Both are at once impressed and dismayed by what they find upon arrival. You get to meet them as newcomers to NE Wisconsin, innocent of the mindset that abuse of our health and well-being for profit is business as usual. And you get a master class in what it takes to change that world.

Mighty forces were set in motion to protect industry from having to clean up after itself. Wisconsin government was enlisted to fight any real clean up. But our government is diverse, and its power is spread among many different agencies. And within them are many people committed to their agency's mission. Given an opportunity and leadership, these people rise to the occasion.

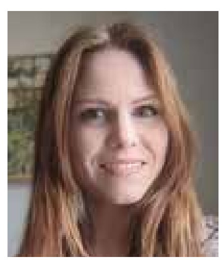
This is the story of how facts and science and persistent work overcame powerful interests resisting enforcement of our laws. It is instructive to read the attention to detail, and the dogged persistence it took to document and prove real harm was being done to all of us who live here. Our health was being harmed. And our use of the Fox River and bay of Green Bay were harmed, too. It isn't just "Nature". These are our waters, and their degradation had really cost us.

The authors spell out how fraught the battle was to clean up our river. And when you look around the river and bay today, you see the rewards of having cleaned it up. We play by the water now. We eat the fish again. Our waters attract tourists from across the country. From Lake Winnebago to Washington Island, we got our country back when the citizens in this story reclaimed our waters.

The Clean Water Action Council is cited in Paper Valley as a leader among environmentalists engaged in the fight to clean up PCBs. CWAC's work to protect our waters may never end. Read this book to be entertained, but also to learn how to fight and protect ourselves again. Whether its today's PFAS threat, or new threats we have yet to recognize, the work must go on.

Jayne Black Joins the CWAC Board

Jayne serves on the city of De Pere's sustainability commission and is the founder of Green Schools which is a pathway program to the US Department of Educations "Green Ribbon Schools Program." Jayne is a very active environmental advocate working on supporting schools to provide healthy learning environments and indoor air quality legislation for schools. She serves as a Wisconsin leader for the Moms' Clean Airforce and is a Water Action Volunteer and an invasive species monitor for Fox-Wolf Watershed Alliance. Jayne also serves as the Board President for Rooted In and is a spokesperson for the American Lung Association and the National Multiple Sclerosis Society. Jayne is the current Mrs Wisconsin USA Earth 2023.



Rachel Weber is CWAC's Fall Intern

Rachel Weber is a junior at the University of Wisconsin Green Bay majoring in Environmental Policy and Planning. She looks forward to working with the Clean Water Action Council to learn about the efforts involved in effecting change in local communities. In her free time, she enjoys sewing and being a mom to her four-year-old daughter.

Have you renewed your membership for 2023?

See your newsletter label or email notice which indicates the last year that you renewed.

FOOD WASTE
Composting Workshop

Wed., October 18 6:30-7:15 pm
at East Branch - Brown County Library

FREE workshop with Dean Hoegger, President/ Executive Director, Clean Water Action Council of Northeast Wisconsin.

- **Dig into** surprising facts about what really happens when you put your food waste in the trash or garbage disposal.
- **Discover** the many benefits of composting instead.
- **Learn** techniques, equipment, which items you can compost.
- **Get tips** for small yards, renters, year-round, indoor composting.

Part of a monthly series organized by the Brown County Seed Library

East Branch Brown County Library

Your place for information, entertainment, community, and culture.

2253 Main Street
Green Bay, WI 54302

920.391.4600
browncountylibrary.org

Food and Yard Waste Composters Available

The composter features a locking lid, two doors for removing compost, and comes in two sections plus the lid for easy transport, set up, and take down. It can easily be moved to a new garden location. Made from a sturdy sun absorbing plastic, they have been in operation in Northeast Wisconsin for over a decade.

A limited number of composters will be available from CWAC this spring. Help the environment and produce your own soil amendment by composting your food and yard waste.

Food and Yard Waste Composters
can be purchased for $60 by contacting us at
contact@cleanwateractioncouncil.org
or call 920-421-8885

~~ Thank you! ~~

Supporting the work of a part-time student employee:

Green Bay Packaging George Kress Foundation
100+ Women Who Care of Door County
Sisters of St. Francis of the Holy Cross
Carol Ray
Kewaunee C.A.R.E.S.
Leo Loeb

Providing a scholarship for an intern:

Andrea Iwen

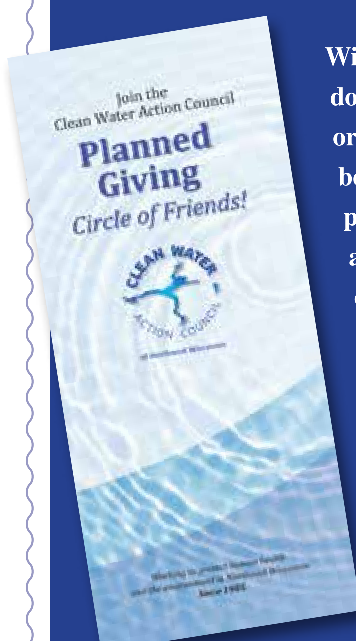
Providing support for our conference: PFAS: A Growing Health and Environmental Concern

Thomas Bice-Allen

Helping to pay for legal fees for protecting DNR's authority over the Spills Law

Paul, Barry, Tanner Fund of the
Greater Green Bay Community Foundation

Join Our Planned Giving Circle of Friends



Without planned giving donations or legacies, our organization would not be able to do the work of protecting human health and the environment at its current level. Please consider supporting our endowment fund at the Greater Green Bay Community Foundation with a gift in your will or bequest.

Contact us for a Planned Giving Brochure

Join or Renew Your Membership to Clean Water Action Council for 2023!

☐ Renewal ☐ New Member Date______________

( ) $25 Individual ( ) $50 Sustaining **(this amount would really help)**

( ) $35 Family ( ) $100 Donor ( ) $500 Benefactor

( ) Non-member donation of $ __________for______________

( ) Other $________

( ) Please send me information about making a planned gift to CWAC

Name(s)____

Address ____

City ____________________________State _____ Zip ________

Phone ____

E-mail ____

Receive FREE newsletters with each membership.

Please choose one... ☐ Printed version ☐ E-mailed version

Send check or money order to:

Clean Water Action Council
P.O. Box 9144
Green Bay, WI 54308

To pay with a credit card or to make a monthly contribution, please go to:
https://www.cleanwateractioncouncil.org/membership/

CWAC is a registered non-profit organization.
Your contributions may be tax-deductible. ***Thank you!***

PLEASE VOLUNTEER!
(BE SURE TO PROVIDE PHONE NUMBER ABOVE)

☐ the newsletter ☐ events ☐ work at office ☐ mailings

☐ joining or leading one of the committees ☐ other

Office location:
A307 MAC Hall, UW-Green Bay
2420 Nicolet Drive
Green Bay, WI 54311

www.cleanwateractioncouncil.org

Find us on Facebook or updates on hearings and current or upcoming events.

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Contributions may be tax-deductible.

CONTACT US

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If you leave us a message, we will try to get back to you within 24 hours.

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of Northeast Wisconsin
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Green Bay, WI 54308

Don't miss our PFAS Conference on Oct. 27 at UWGB!
See page 13 to register.

in this issue...

PFAS: A Growing Health and Environmental Concern

For previous newsletters, go to: www.cleanwateractioncouncil.org/newsletter/