

Clean Water Action Council

OF NORTHEAST WISCONSIN

CELEBRATING 38 YEARS OF WORKING TO PROTECT PUBLIC HEALTH AND THE ENVIRONMENT IN NORTHEAST WISCONSIN



SPRING 2023

The State of the Bay

The Human Impact on the Green Bay Ecosystem



The recently completed Cat Islands Restoration Project in Green Bay protects wetlands along the shore, near the mouth of the Fox River, and provides habitat for shorebirds, waterfowl, amphibians, turtles, invertebrates, and furbearing mammals. Photo courtesy of the Army Corps of Engineers and Brown County Port Department.

Introduction by CWAC President Dean Hoegger

In this issue, you will learn about the history of the human impact on the waters of Green Bay, both the good and the bad. It all starts in the vast watershed, which includes the Wolf, Fox, Oconto, Peshtigo, and Menominee rivers. The watershed ranges from the woodlands of far north central Wisconsin to Lake Winnebago before entering Green Bay.

Our writers take you from pre-European settlement to current issues including chemicals of concern and the impact of current agricultural practices. We look at the importance of Green Bay to recreation and tourism. Fishing alone brings an economic impact of nearly \$300 million.

Green Bay is the largest freshwater estuary in the world. You will learn how a National Estuarine Research Reserve designation will provide support and education to help those groups already working to restore and protect this treasured natural resource.

“Never forget that you live at the mouth of the largest freshwater estuary in the world...and never forget the great responsibility you bear for that!”

Dr. Jack Day, Professor Emeritus, UW-Green Bay

The Green Bay Watershed Is Huge!

By Dave Verhagen

The waters in Green Bay come from land areas surrounding it. Together, those lands constitute the Green Bay watershed. The Fox River is the main contributor to the bay of Green Bay, and its abundant resources are what drew civilization to northeastern Wisconsin. Look at the map to see how large the watershed is.



A watershed is an area of land where all surface waters flow into a single destination. It is sometimes useful to think of a watershed as a basin. Rain and snowmelt within a watershed flow downhill forming creeks, streams and rivers that empty into a single body of water. That body could be a pond, river, lake, or even the ocean. The larger the destination body of water, the more land area that drains into it.

The bay of Green Bay is a very large body of water, and its watershed is comprised of many individual watersheds, called tributaries. It is easy to think about an area of land where all water drains into one single river. But given its great size, the bay receives the waters coming from eighteen separate watersheds from across northeast Wisconsin and the Upper Peninsula of Michigan. The combination

of all these individual watersheds acts together forming a single mega-watershed.

The Fox River system alone, together with its Wolf River system tributary, drain about 6,250 square miles of land, draining waters from far northern Wisconsin forests and the center of the state near Portage. Some of the other larger watersheds emptying into the bay include the Menominee, Peshtigo, Escanaba, and Oconto rivers.

Green Bay borders on five Wisconsin and two Upper Michigan counties. It is separated from Lake Michigan by Door County and a chain of islands that run from Door County's tip to the Garden Peninsula in Michigan. The chain is over 120 miles long, but only ranges from ten to twenty miles wide.

The bay is shallow, especially the lower bay. Near the mouth of the Fox River depths can be less than ten feet. South of Door County the Lower Bay depths are generally less than 20 feet. A shipping canal into the port of Green Bay needs to be dredged regularly for large freighters to travel it safely.

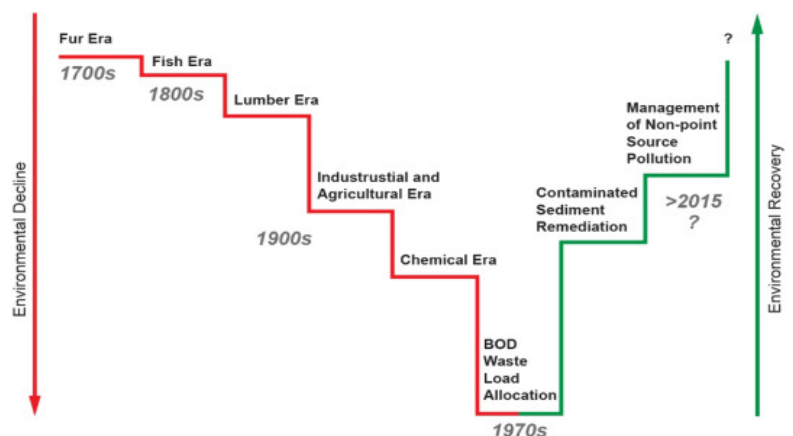
The waters reaching the bay have come from forests, farmlands, urban landscapes, and municipal and industrial treatment facilities. Water pollution continues to be a concern in the Green Bay watershed. Agricultural runoff is a major contributor of nutrient loading of phosphorus and nitrogen, which contribute to the growth of algae and cyanobacteria. Toxic chemicals also come from farmlands, urban runoff, and sewage treatment plants. Some of these are emerging chemicals, such as PFAS, which have only recently been discovered to be widespread in the Green Bay watershed.

The Green Bay watershed drains about 40,468 square kilometers and makes up about one third the water entering Lake Michigan. The quality of this water impacts millions of residents in Wisconsin, Illinois, and Michigan who depend on it for drinking, food, and recreational purposes. Wisconsin needs to do its part to protect this water resource!

The Evolution of Pollution of the Waters of Green Bay

By Lauren Felder

The waters of Northeastern Wisconsin, specifically the bay of Green Bay, the Fox River, and the East River, unfortunately have a long and sordid history of pollution. What began as an area that relied economically on fishing and trapping slowly became an area of unfettered pollution beginning as early as the 1830s. After the conclusion of the land surveys by the federal government in 1836, the land went up for sale.



The dairy and lumber industries exploded in the area in quick succession, dairy taking hold in the 1850s and lumber mills following shortly thereafter. There was so much sawdust dumped into Green Bay watershed that floating islands of sawdust existed. The lumber industry gradually shifted to paper making beginning in the late 1800s.

There were few to no environmental regulations until the mid to late 1900s, which allowed nearly unrestricted use of area water sources for manufacturing processes and waste product dumping. Factories routinely piped waste directly to the Fox River. Polycyclic aromatic hydrocarbons, a waste product of gas manufactured from coal in the early 1900s still exist in sediment where the East River and Fox River meet.

In addition, area communities also disposed of their sewage in the rivers and bay. This caused a harmful increase in concentration of nutrients such as phosphorus and nitrogen in the rivers and bay. The environmental impacts of these practices were noticeable by the 1920s. Residents complained of the smell from the Fox and East Rivers, algae blooms appeared in the bay, and dead fish had to be periodically removed from the water.

The result of unregulated waste disposal from industrial and domestic sources caused severe eutrophication of the bay. Despite the obvious contamination, action aside from environmental surveys, was not taken until after the passage of the Clean Water Act in 1972. At that time \$338 million (\$1.9 billion in 2017 dollars) was invested by area wastewater treatment plants to comply with the Wisconsin Pollution Discharge Elimination System (WPDES).



Greenpeace yacht Fri.
Courtesy of Wikipedia.

However, area residents believed there was a lack of compliance by paper mills along the Fox River. In 1975, Greenpeace sent the sailing yacht Fri, which anchored in front of the Fort Howard Paper Company (later becoming Georgia Pacific), to do water sampling and send divers to search for illegal underwater effluent pipes. Residents rallied to the cause, some forming the beginnings of Clean Water Action Council.

The purpose of the WPDES was to decrease discharge of nutrients having a high biochemical oxygen demand (BOD). Although the program decreased BOD by 90%, the bay was still extremely eutrophic. Improvements such as these continued through the second half of the twentieth century, and regulations continue to be strengthened for point source discharges.

Beginning in the mid-1950s, PCBs entered the Fox River and Green Bay when carbonless paper, produced by NRC Corporation, was recycled by many papermills, and contaminated wastewater was also released by two municipal sewage treatment plants. As a result, the US Environmental Protection Agency designated the lower Fox River as a Superfund site in 1998.

From 1999-2000, the EPA oversaw the cleanup conducted by three area paper manufacturers to remove 80,000 cubic yards of PCB-contaminated sediment from the lower Fox River. The DNR estimated that each year about 200 pounds of PCB were being transported by river currents to the bay. The Superfund site cleanup was completed in 2020 at the expense of \$1.3 billion over 17 years and will continue to be monitored by two paper companies.



Machinery used to dredge PCB-contaminated sediment in the Fox River.
CWAC photo.

While PCBs were banned by the EPA in 1979, paper processing does rely on the use of large amounts of water. Fortunately, companies such as Green Bay Packaging (GBP) are utilizing more environmentally friendly ways of manufacturing. GBP's 2022 update to their facility included the use of a net zero water policy, wherein the company recycles as much water as possible in their manufacturing process. As part of this update, GBP did not renew its permit to discharge into the Fox River, meaning the company no longer discharges any waste product into the river. For more information, see the [Fall 2022 edition](#) of the CWAC newsletter.

A more modern contaminant has also made its way into the bay; per- and polyfluoroalkyl substances (PFAS). So far, this contaminant has been shown to come mostly from Tyco Fire Products, a company that produces firefighting foam containing the chemical and did testing without containment of the foam. As a result, PFAS has been transported to the bay via surface and ground water. No specific remedial action has been taken at this time. Additional contamination sites are being discovered across

the state and it is likely that more will be in the Green Bay watershed.

Efforts have also been taken to encourage farmers and large agricultural operations to reduce runoff containing phosphorous and nitrogen. Methods of reduction include using cover crops, allowing vestiges of harvested crops to remain on the fields, using buffer strips between fields and bodies of water, and rotational grazing. Each of these methods reduces runoff containing excess nutrients from fertilizer or manure that farmers spread on their fields. CWAC has contributed to this effort. We held conferences on keeping nutrients on the land using managed grazing practices. We use legal efforts to limit manure spraying, and we are monitoring for cultivation violations and winter manure spreading. Reducing agricultural runoff will have a positive impact on the health of the watershed and Green Bay.

Selected sources:

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- <https://www.jsonline.com/in-depth/archives/2021/09/02/changes-america-dairyland-foul-waters-green-bay/8101395002/>
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- <https://dnr.wisconsin.gov/topic/PFAS/Marinette.html>
- <https://dnr.wisconsin.gov/topic/PFAS/Cleanup.html>

Impact of Invasive Species on Green Bay

By Maya Hearden

Invasive species are nonindigenous species that have the potential to cause harm to the environment, economy, or human health. When a species invades a nonnative ecosystem, they lack natural predators and competitors allowing them to reproduce rapidly and out-compete native species. According to the Wisconsin Department of Natural Resources, roughly 42% of species on the federal threatened or endangered species lists are threatened or endangered because of invasive species.

The Wisconsin DNR classifies invasive species as either restricted or prohibited under Administrative Code NR 40, the governing invasive species rule. Restricted species are invasives that are already established in the state and cause, or have the potential to cause, significant harm. Prohibited species are invasives that are not currently found in Wisconsin but are likely to survive and spread, causing significant harm if introduced to the state.

The Wisconsin DNR identifies 14 restricted or prohibited invasive species in Lake Michigan. Restricted species include alewife, spiny water flea, round goby, sea lamprey, zebra and quagga mussels. Prohibited species include big head and silver carp and bloody-red shrimp.

It is believed that zebra mussels, quagga mussels, spiny water fleas, and round gobies arrived in the Great Lakes

through ballast water from ships. Sea lamprey are native to the Atlantic Ocean and eventually made their way to Lake Ontario, where they were contained for almost 100 years. Improvements to the Welland Canal, which connects Lakes Ontario and Erie, allowed them to invade the rest of the Great Lakes.

The origin of alewife in Lake Michigan is conflicted, since some believe the species came into the Great Lakes through ballast from water ships having been native to the Atlantic Ocean, others believe that the species was native to Lake Ontario and then spread to other Great Lakes through the Welland Canal.



Zebra Mussel Colony in a Pipe.
Photo courtesy of Chapman Marine Inc.

Zebra and quagga mussels are some of the most devastating invasive species to Lake Michigan. These mussels feed on plankton, outcompeting other fish for food. Since they are at the bottom of the food web, their impact is especially

damaging to the ecosystem. Zebra and quagga mussels also form colonies inside of water intake pipes, clogging them. Efforts to control zebra mussels in water intake pipes cost the Great Lakes' utilities \$267 million from 1989 to 2004. In addition to altering the food web and clogging pipes, quagga mussels cause damage to boats, power plants, and harbors.

Spiny water flea, round goby, and alewife also have a negative impact on the food web in Lake Michigan. Spiny water fleas and alewife eat smaller zooplankton, competing with



Spiny Water Flea.
Photo courtesy of Lake George Association

native fish for food. Spiny water fleas reproduce asexually, and populations can explode exponentially. The spiny water flea and round goby also impact recreational fishing and the fishing industry. Spiny water fleas get their tail spines hooked on fishing lines, causing a nuisance. Round gobies steal bait off of fishhooks and eat fish eggs.

Round gobies are very aggressive, able to survive in poor quality water and reproduce very quickly. They often



displace native fish and take over their habitat. Unlike other invasive species in Lake Michigan, the sea lamprey

Round Goby.
Photo Courtesy of Penn State University

are “top-down” predators. Sea lamprey prey on grown fish like lake trout, whitefish, and ciscoes which had devastating impacts on fisheries, although the population has since been controlled.

The big head and silver carp have not yet entered the Great Lakes system, but they are closely monitored due to the potential for significant harm if they do invade. These species escaped fish farms and colonized Mississippi River tributaries and could enter Lake Michigan through manmade waterways that connect the Mississippi River Basin to the Great Lakes Basin. In order to prevent big head and silver carp from infiltrating the Great Lakes, the federal government has made plans to build massive blockades on the waterway system.

The Death and Life of the Great Lakes by Daniel Egan details the history of invasives in in the Great Lakes.

Preventing new invasive species is essential because once an invasive species has entered our waterways, not much can be done other than mitigating the damage that they cause. Some species, like the sea lamprey, are easier to control. Sea lamprey larvae can be killed with no impact to other organisms using lampricides. Other species, like zebra and quagga mussels, cannot be controlled in the wild.

Efforts to prevent the spread of invasive species include inspecting and cleaning attached aquatic plants or animals off boats, trailers, and other water recreation equipment before launching and after loading. Draining water from boats, motors, and other equipment before leaving water access. Disposing unwanted bait in the trash, not the water, and never releasing fish from one lake into another. It is imperative that everyone makes an effort to help prevent the spread of invasive species so that we can continue to enjoy everything our waters have to offer!

References:

[Invasive Species in the Great Lakes: Major Victories Achieved, but Eternal Vigilance Needed - Alliance for the Great Lakes](#)

[Quagga Mussel | Wisconsin Sea Grant](#)

[Zebra Mussels | Wisconsin Sea Grant](#)

[Spiny Waterflea - Lake Michigan \(wi.gov\)](#)

[Alewife \(Alosa pseudoharengus\) - Species Profile \(usgs.gov\)](#)

[Great Lakes Fishery Commission - Sea Lamprey \(glfc.org\)](#)

[Lake Michigan Invasive Species | Fishing Wisconsin | Wisconsin DNR](#)

The Impact of Agriculture on the Water Quality of Green Bay

By Gracyn Holcomb

Agriculture has been a central feature of Wisconsin's economy and landscape since the founding of the state. A 2017 University of Wisconsin report indicates that agriculture contributes \$104.8 billion to the State's economy, but at what cost? Changing farming practices are creating greater threats to the state's waters including the bay of Green Bay.

The threat is a story of absorption versus runoff.

Plowing fields for planting and harvesting crops, causes loss of soil due to erosion, which decreases the amount of topsoil on the land, preventing the ground from soaking up excess water, including liquid manure. When little topsoil remains on farm fields, runoff pollution is increased, posing serious harm to human health and the environment.

A healthy topsoil soaks up water preventing the spread of agricultural pollution, but as the layers of soil decrease, pollution from excess animal manure and farm fertilizer is carried by rainwater into waterways. When heavy rains occur during the winter months when the ground is frozen, absorption of the water is significantly decreased, causing greater runoff to occur.

As spring arrives in Wisconsin, the amount of phosphorus pollution running off farm fields to the bay varies based on the weather events. Yet with significant weather pattern changes due to climate change, heavier rains are more likely to cause greater amounts of phosphorus and nitrogen to enter the bay. Scientists like Kevin Fermanich, a UW-Green Bay professor, and his colleagues argue that the creation of healthier soils in our watershed is necessary with these soils being “more resilient and less vulnerable to erosion.”

The spreading of liquid manure also contributes to the pollution of surface waters, including the bay, and ground water. Liquid manure is treated as a nutrient, which allows farmers to spread the substance based on the needs of the next crop to be planted. Unfortunately, liquid manure contains only about 5% solids, which correlates to very low crop nutrients based on volume. Up to 5,000 gallons of liquid manure can be spread on one acre, saturating the soil, which often runs into waterways and seeps into ground water.



Spreading liquid manure on saturated soil is a violation and should be reported to the DNR. Submitted photo.

The expansion of CAFOs, or concentrated animal feeding operations, has intensified the already substantial contamination of the watershed from nitrogen and phosphorus from the spreading of liquid manure. Lee Luft, former Kewaunee County Supervisor and Chairperson of the Kewaunee County Groundwater task force, stated that in Kewaunee County the amount of liquid manure spread is equivalent to the accumulated human waste from the cities of Green Bay, Milwaukee, Minneapolis, St. Louis, and Detroit. Even more worrisome is that liquid manure is untreated!

Liquid manure should be considered a waste product rather than a nutrient when spread on the land. Overspreading manure, or spreading manure in violation of DNR approved sites, contributes to the pollution of groundwater and tributaries that lead into the bay. Nitrogen and phosphorus are important nutrients to crops, but excessive amounts of manure spread onto fields does more damage than good.

Phosphorus and nitrogen can contaminate drinking water from both ground and surface water sources. Nitrate pollution is a significant concern since it can cause serious health problems, especially for infants, as well as for long term effects for the general population.

For example, in Kewaunee County, where there are 17 concentrated animal feeding operations spreading millions of gallons of liquid manure, many wells are contaminated with nitrates. Wells that contained drinking water with elevated levels of nitrates at 2.1-9.9 ppm, were 30.3% of the total tested. Wells that contained unsafe amounts of nitrates at 10 ppm or above were 13.2% of the wells tested.

Some communities source their water from surface waters of the bay, like Marinette, where citizens are at risk for consuming water containing chemicals coming from the watershed and not filtered out at a municipal water plant.

As CAFOs increase in Northeast Wisconsin, concerns continue to rise over how to properly handle waste and prevent the pollution of the watershed and bay. Some researchers suggest that nutrient management plans, which are tools used for guidance in the spreading of manure, fail to protect our waters and public health. The limited availability and complexity of these plans make it difficult for citizens to monitor what amounts of manure are allowed to be spread on a specific field versus what is actually being spread.

Residents living near CAFOs and fields where liquid manure is spread believe that violations often occur. One such violation occurred in Kewaunee County at Wakker Dairy, in which the Attorney General filed a criminal complaint against three individuals associated with the farm. Within a three-year period, the CAFO overspread manure on its fields and lied about their history of manure spills and violations of state environmental laws, in which



Large amounts of phosphorus pollution often enter the bay during two weeks of spring and is contained within the brown plume of soil particles shown in the photo. Photo courtesy of the Wisconsin DNR.

the overspreading of manure directly resulted in pollution discharges into Lake Michigan.

Local organizations, such as CWAC, are monitoring for winter manure spreading, which is generally not permitted for CAFOs when the ground is frozen, or snow covered, unless an emergency spreading permit is issued by the DNR. Non-CAFO farms have different regulations that discourage winter spreading, but these farms work with county land and water offices for permits. Spreading liquid or solid manure when the ground is frozen, and the manure is unable to be incorporated into the soil, means the risk of runoff is significantly increased. As snow melts, the manure can mix with water traveling into tributaries and carry nutrients into the bay.

CWAC also monitors for proper cultivation setbacks from bodies of water. The setback standard is only five feet, providing minimum protection from runoff from these fields. Yet even this setback is often violated. Unlike at construction sites where runoff fencing must be installed, cultivation can occur right up to a ditch, which then can flow directly into a stream, and eventually to the bay.

The algae blooms that are a result of the contamination of water through agriculture produces what are known as “dead zones.” Dead zones are created when plants and algae feed on nutrients like nitrogen and phosphorus. When the algae dies, it decomposes and the bacteria consumes oxygen in the water, especially on the bottom of the lake. These algal blooms result in a hypoxic condition in which no other aquatic life, such as fish, can be sustained in these areas.

The first dead zone to gain media attention lasted for 69 days and extended from the mouth of the Fox River to Dykesville. Since then, dead zones have not gotten better, possibly worse. Scientists note that these zones are mobile, and expand or contract when variables like wind, water temperature, and other factors combine, or not combine, to mix lake waters and return oxygen to the bottom layers of the water. Without indicators like large aquatic life kills, dead zones can go unnoticed for years.

The likelihood of more dead zones appearing, growing, and lasting longer is increased by climate change, which is likely to cause warmer bay waters and encourage more algal growth. Continued CAFO expansions will provide additional algae growing nutrients as well.

Not all hope is lost, however, since runoff pollution is preventable. Limiting runoff pollution will significantly improve the health of the watershed and bay. Farmers must be encouraged, and even required to keep nutrients on the farm fields where they belong, and out of our water resources.

Sources:

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<https://wisconsinexaminer.com/2022/12/07/kewaunee-co-dairy-charged-for-overspreading-manure-has-long-history-of-spills-violations/>

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PFAS, PAH, PCB, and the Green Bay Watershed

By Dean Hoegger

PFAS

The PFAS class of chemicals have been a well-known health threat for over two decades. In 2001, Environmental Attorney Rob Bilott filed a class action lawsuit against DuPont for contaminating the drinking water with PFOA for over 70,000 people in West Virginia and Ohio. DuPont settled with the plaintiffs for \$70 million and other considerations. As part of the settlement, DuPont was required to pay for an independent study panel which found there was a probable link between PFOA exposure in drinking water to a host of diseases including kidney and testicular cancer. DuPont and its affiliates eventually paid over \$753 million in claims.

Nearly two decades would pass before the first case of PFAS contamination would come to light in Wisconsin in the Marinette and Peshtigo areas. Yet in 2013 the Michigan Department of Environmental Quality had already ordered a statewide assessment of PFAS in fish and water resulting in do not eat the fish advisories in 2014. It wasn't until Governor Evers declared "2019 The Year of Clean Drinking Water" that action began on a number of issues including PFAS in Wisconsin.

So, what is PFAS? This abbreviation is used to refer to a group of human-made chemicals, classified as per- and polyfluoroalkyl substances. They are used to make coatings and products that are resistant to heat, oil, and water. PFAS coated products include fabrics for clothing and furniture, food packaging such as pizza boxes and microwave popcorn bags, non-stick cookware, and a host of other common products. (See <https://www.cleanwateractioncouncil.org/newsletter/Spring2020>). Common chemicals in the family include PFNA, PFHxS, PFHxA, PFDA, PFOS, and PFBS, but not to confused with PAH or polycyclic aromatic hydrocarbons found in coal tar pavement sealants.

The danger from these chemicals is that they do not break down in the environment, they can move through soils and contaminate ground water, they can contaminate surface waters including those used for drinking, and they bioaccumulate in fish and wildlife. Thus, they are referred to as forever chemicals.

In May of 2019, the DNR referred Johnson Controls International to the Wisconsin Department of Justice for failing to report and take actions to minimize the effects of harmful discharges, namely PFAS from their Tyco company's firefighting foam testing center in Marinette. The discharges contaminated ground water as well as nearby ditches, which carried the chemical to the waters of Green Bay. It is that contamination we will discuss further in this article.

In January 2022, the DNR posted a PFAS fish advisory for Green Bay waters and some tributaries for rock bass and noted that other species were found to contain lesser amounts of PFAS. While it is known that PFAS have entered the bay from the firefighting test site, and likely from the Marinette sewage treatment facility, it is unknown how many other sites are contributing to PFAS concentrations in fish. The DNR has identified several spills or use of firefighting foam containing PFAS in the Green Bay area. These were mostly modest amounts with some material cleanup at the spill site.

The Environmental Working Group (EWG) reported findings by the EPA that showed PFAS chemicals were found in smallmouth bass in Green Bay near Oconto. These fish had high levels of PFOS at 14,000 parts per trillion (ppt). The Wisconsin PFAS standard for drinking water is 70 ppt for combined levels of PFOA and PFOS. In the summer of 2022, the EPA released a new advisory of 0.02 ppt. This latest EPA advisory gives credence to EWG's research which shows that even infrequent consumption of freshwater fish can significantly increase PFOS levels in humans. PFOS is found in the flesh of fish, not in fat, such as with PCBs which can be



Map courtesy of Environmental Working Group

PFOS in fish test results:

Walleye north of Marinette: 18,000 ppt.
White sucker at Marinette: 9,460 ppt.
White sucker south of Marinette: 9,080 ppt.
Walleye south of Marinette: 14,500 ppt.
Smallmouth bass mouth of Oconto River: 14,000 ppt.

See the map and other test results at:

https://www.ewg.org/interactive-maps/pfas_in_US_fish/map/

removed through trimming and cooking techniques.

The search for sources of PFAS are being hindered by big money. Challenging the DNR's efforts to sample waters and regulate the cleanup of PFAS chemicals—and even to make public the findings—are lawsuits brought by Wisconsin Manufacturers and Commerce (WMC). This well-funded organization is protecting industry at the harm of Wisconsin residents. One lawsuit temporarily halted the DNR's testing of effluent from municipal sewage facilities. A court later found the DNR could do the testing but prohibited the agency from releasing the findings about a specific facility. This lack of transparency keeps the public from finding the companies that may be sending PFAS to these facilities and ultimately the Green Bay. We need to know the sources of the contamination!

CWAC, along with several other parties, are being represented by Midwest Environmental Advocates in another WMC vs DNR PFAS case. In this case, we are filing friends of the court briefs in support of the DNR's regulation over

PFAS and other chemicals using authority in the Spills Law. The circuit court found in favor of WMC. The case is now before the Wisconsin Court of Appeal. If the DNR loses the case, the public will be at great risk.

We should not be kept in the dark regarding where PFAS contamination of the waters of Green Bay is originating. A DNR PFAS specialist Patrick Gorski stated that PFAS must be found at its source before being dispersed into the environment. Neither big business represented by WMC, or the courts, should prevent the public from having full disclosure of the threat PFAS forever chemicals pose.

PAHs

Polycyclic aromatic hydrocarbons (PAHs) are found in coal tar pavement sealants which are extensively used by sealing companies in Wisconsin—so much so that they vigorously and successfully lobbied the Wisconsin legislature against banning the product in February 2021. While our efforts to educate the public have mainly focused on the human health hazards, especially to children, PAHs can harm aquatic animals. Learn more about our PAH education efforts in the Action in CWAC and at <https://www.youtube.com/watch?v=0xjvi-leDHg>.

PCBs

As a result of recycling carbonless copy paper containing PCBs, area mill operations discharged about 250,000 pounds of PCB's contaminating the sediment in the lower Fox River. According to the Wisconsin Department of Health Services, an estimated 160,000 pounds of PCB's left the river and entered Green Bay and Lake Michigan by 2006. The EPA further estimated in 1998 that 600 pounds could be flushed from the Fox River sediment each year until significant cleanup was completed. The Lower Fox River PCB Clean-Up Project that began in 2006 has officially finished with the EPA certifying the closure of the project at the beginning of 2023.

Many of the DNR's fish consumption advisories for PCBs have been reduced in the years since the cleanup began. Removing the fatty tissue from bay fish, and cooking by broiling or grilling could remove some of the PCB's. For proper preparation and consumption advisories, go to <https://dnr.wisconsin.gov/topic/Fishing/consumption/questions.html>.

We must continue to advocate for the elimination of PFAS, PAHs, and PCBs in the waters of Green Bay. These chemicals put citizens and aquatic life at serious risk. Everyone should have the right to clean water!

Resources

PFAS and Your Health: <https://www.atsdr.cdc.gov/pfas/index.html>

PFAS in Wisconsin Waters: <https://youtu.be/bi5zCVMWtj0>

EPA Proposes Designating Certain PFAS Chemicals as Hazardous Substances Under Superfund to Protect People's Health | US EPA

EPA Announces New Drinking Water Health Advisories for PFAS Chemicals, \$1 Billion in Bipartisan Infrastructure Law Funding to Strengthen Health Protections | US EPA

PFAS testing in the Green Bay watershed: https://pubs.acs.org/doi/suppl/10.1021/acsestwater.1c00348/suppl_file/ew1c00348_si_001.pdf

The Bay of Green Bay Provides Recreational Opportunities and Significant Economic Benefits

By Charlie Frisk

The Great Lakes commercial, recreational, and tribal fisheries are estimated to have a \$7 billion commercial impact and support approximately 75,000 jobs.

There has not been a recent study of the financial impact of the Green Bay fishery until now. Over the last couple of decades, Green Bay has established itself as one of Wisconsin's most important sport fishing destinations.

With financial support from "Walleyes for Tomorrow" a team of social scientists embarked on a multi-year project to find out just how much the sport fishery is worth. Matthew Winden, assistant economics professor at UW-Whitewater and John Stoll, the Austin E. Cofrin Professor of Management at University of Wisconsin-Green Bay, lead the project, properly titled *The Economic and Fiscal Impact of Green Bay Recreational Fishing*. "Fishing is more than a popular recreational activity," Winden said. "It supports jobs and draws tourism to the region. Having good data is vital to making good resource management decisions."

Winden and Stoll concluded that fishing Green Bay waters creates over \$264.3 million in annual economic benefits, generates over \$14.8 million in annual state and local taxes, and supports over 2,711 full-time jobs.



Ice fishing alone brings millions of dollars, much of it from out of state, to counties along Green Bay. CWAC photo.

The Green Bay Fishery has changed dramatically in the past few decades, primarily because of human driven impacts. As recently as the 1990s the yellow perch was the dominant sport fish in Green Bay and supported a thriving commercial fishing industry.

Today, commercial fishing for perch on Green Bay is almost nonexistent and the sport fishery is greatly reduced. The decline of the yellow perch is blamed primarily on introduced species. Quagga and zebra mussels compete directly with the perch for their food supply, which is zooplankton. Yellow perch have strainers on their gills for filtering zooplankton out of the water.

The mussels probably entered the Great Lakes system through improper disposal of ballast water from ocean going vessels. The ballast water could be collected from anywhere in the world and is necessary to maintain stability

for vessels when traveling in turbulent waters.

The mussels have strained so much zooplankton out of the water that young perch do not have enough to eat. Ironically, because of the depleted zooplankton, the water of the bay is clearer, which allows predator fish such as walleyes and musky to prey more effectively on yellow perch, which also reduces their population.

On the flip side, the populations of walleye, musky and smallmouth bass, popular gamefish that haven't been legal for commercial harvest since the early 1900s, have increased dramatically.

A major part of the credit goes to the Federal C.W.A. of 1972 for legislating the cleanup of the Fox River and Green Bay that makes it possible for those fish to survive. Stocking programs carried out by the WDNR have also contributed to the population growth of these species.

Although walleye reproduce naturally in Green Bay and the Fox River, the WDNR also does supplemental stocking. Today, the stretch of the Fox River from the Nicolet Dam in De Pere downstream to the bay is considered one of the top trophy walleye waters in the world.

Musky had been extirpated from Green Bay and the Fox River by the dual punch of pollution and overfishing. In 1989 the WDNR in cooperation with several local musky clubs started the reintroduction of the Great Lakes strain musky (also known as spotted musky) into Green Bay and the Fox River.

Because of the excellent food base in Green Bay, many biologists and anglers believe that the next world record musky will come out of Green Bay. There are multiple fish considered to be the world record musky, but the Freshwater Fishing Hall of Fame, in Hayward, WI recognizes the 69-pound 11-ounce musky caught by Louis Spay on the Chippewa Flowage in 1949 as the current world record.

The changes in the sport fishery of Green Bay and the Fox have significant economic implications. Sport fishing of any type produces economic outlays for fishing gear, bait, boats, gasoline, food, and lodging. However, the current fishery with its emphasis on large trophy gamefish has produced a much more robust fishing guide industry.

With the strength of the fishery now being primarily large gamefish, more anglers are hiring professional guides to increase their odds of catching that trophy of a lifetime. The professional guiding industry is growing in the Green Bay area as a result.

There have also been significant changes in duck hunting on Green Bay that have occurred over the past century and a half. I have a map of Green Bay produced by the "Bureau of Topographical Engineers, War Department" from surveys conducted in 1845. At that time wetlands covered the entire east and west shorelines of the lower bay and continued inland for several miles. Based on surveys conducted in 1845, the wetlands covered the entire east and west shorelines of the lower bay and continued inland for several miles.

Today, almost all the wetlands of the east shore are gone,

and the west shore wetlands have been greatly reduced. Those wetlands were primarily the habitat for "puddle" ducks as biologists refer to them. These ducks include mallards, gadwalls, and widgeon, which feed on vegetation in shallow waters.

As a result of this habitat loss, the puddle duck species have declined dramatically. In contrast, diving ducks are doing very well on the bay. Diving ducks propel themselves underwater with their webbed feet and can go to great depths to feed on aquatic plants, fish, mollusks, and crustaceans. Not being as dependent on shoreline wetlands, they have not been as impacted by that habitat loss.

Most of the hunting for divers is done from lay-out boats. Hunting from lay-out boats requires a large tender boat to transport the lay-out boats and hunters out onto the open water of the bay. According to Captain Jeff Van Remortel of WDH Guide Services, the boats, decoys and other equipment for lay-out boat hunting will require an expenditure of \$60,000 to over \$100,000, a higher expenditure that most duck hunters care to make, so most lay-out hunting is conducted using professional guides.

The guided diving duck industry is growing and will continue to thrive as long as water quality remains good enough to support the duck's food base and clear enough for them to effectively sight feed. Hunting is unlikely to have much of an impact on the diving duck population because the hunters are primarily hunting for a few quality ducks, as opposed to quantity.

The future of outdoor recreation such as fishing, hunting, boating, swimming or just simply relaxing along the shores of the Fox River and Green Bay require that we do a better job of protecting that resource. "Never forget that you live at the mouth of the largest freshwater estuary in the world...and never forget the great responsibility you bear for that!" stated Dr. Jack Day, Professor Emeritus, UW-Green Bay.

Bringing a New National Estuarine Research Reserve to the Bay of Green Bay

By Emily Tyner, Director of Freshwater Strategy,
University of Wisconsin-Green Bay

The University of Wisconsin-Green Bay is excited to be leading the designation of a new National Estuarine Research Reserve (NERR) on the bay of Green Bay. The [NERR system](#) is a non-regulatory national network of 30 sites across the U.S., including the Great Lakes, designed to study, preserve, and educate about our coastal resources. The mission of the NERR System is, "To practice and promote stewardship of coasts and estuaries through innovative research, education, and training using a place-based system of protected areas."

Established through the Coastal Zone Management Act, the reserves represent a partnership program between the National Oceanic and Atmospheric Administration

(NOAA) and the coastal states. NOAA provides funding and national guidance, and each site is managed daily by a lead state agency or university with input from local partners.

The Bay of Green Bay NERR will offer a coordinating force to manage, restore, and celebrate the Green Bay Estuary. Plans for the NERR include a visitor center with water-focused exhibits, meeting and conference spaces, a laboratory and classrooms, and a boat launch. Green Bay is the world's largest freshwater estuary and the concept of locating a NERR in the bay has been in discussion for some years.

Upon designation, the Bay of Green Bay NERR would be the second reserve in the state of Wisconsin, following the Lake Superior NERR's designation in 2010, and the third reserve in the Great Lakes. Joining a network of reserves across the U.S. means that our local water quality research will contribute to shared data sets and collaborations across the national system and that we can connect with other reserves and NOAA to help address local ecosystem concerns.



First ice on Green Bay. Photo courtesy of Collette LaRue.

What is the vision for a Bay of Green Bay NERR?

We have adopted a vision for a reserve that is holistic in the programs offered. This means a focus on not only the science of the Great Lakes but also a celebration of the many ways that water touches our lives and communities, including the historical connections, art and storytelling connections, and the economic importance of water both in the past and for our future. Our goal is to make this the most technologically advanced reserve in the national system with technology applications in both scientific research and educational opportunities for students. We have already started on this vision through collaborative programming.

Currently funded projects include the creation of a Green Bay Estuary surround-sound exhibit capturing both sounds and stories from above and below water, this is a collaboration with the UW-Green Bay's music program

and funded by Wisconsin Sea Grant. Another project is the creation of a Green Bay Estuary Digital Archives Collection for gathering and digitizing historical maps, photos, videos, and data sets related to the Green Bay watershed. This project is funded by the Wisconsin Coastal Management Program and a collaboration between the UWGB Archives and the Wisconsin Department of Natural Resources.

What projects will stem from this program?

The four core pillars of each NERR are Research, Education, Stewardship, and Training (REST). Examples of NERR programs include Teachers on the Estuary, an opportunity to train teachers in coastal and estuarine science. Another program that was started by the Lake Superior NERR which we would like to build out in Green Bay is Rivers2Lake, which connects local teachers and classrooms to the NERR for a year of lessons and experiential, hands-on learning.

UW-Green Bay has a history of water-focused research. Building from the University's Eco-U history, the Bay Green Bay NERR will be a regional, and Great Lakes, organizing force around conservation.

What is the designation timeline?

The university is currently in step three of a six-step process of designation. Site(s) for the natural areas of the NERR were selected in December 2022 and the proposed sites are currently being reviewed by NOAA. A location for a NERR visitor and education center will be identified in 2023, and we hope to have achieved designation by the end of 2024. The designation process is being led by a steering committee formed to represent a range of regional interests and contribute a breadth of professional expertise.

Committee members include representations from the Oneida Nation, Menominee Indian Tribe of Wisconsin, Wisconsin Sea Grant, Department of Natural Resources, Wisconsin Coastal Management Program, University of Wisconsin-Extension, University of Wisconsin-Milwaukee School of Freshwater Science, and Microsoft TechSpark Wisconsin.

As we build support and plan for the Bay of Green Bay NERR, we are dreaming big about the reserve's impact, and are in conversation with artists, museum directors, and tourism officials to explore possibilities for the built infrastructure. We envision the facilities of the NERR as a regional hub for outdoor recreation, cultural education, and a celebration of water.

Visitors could learn about the best places to bird watch or hike, be connected to an on-site kayak outfitter, or meet with a fishing guide. The potential partnerships around tourism, outdoor recreation, experiential education, and more—and the visibility the Green Bay NERR will bring to northeast Wisconsin—are exciting.

If you would like to learn more or join the designation effort, please explore. <https://www.uwgb.edu/national-estuarine-research-reserves/>

The Action in Clean Water Action Council

By Dean Hoegger, CWAC President and Executive Director

Did you renew your membership?

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. Thank you to the many members who renewed this year.

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. 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 and our Packers' concession stands, not from 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, or open an account, to pay with a credit card.

We are thankful for members who wish to sponsor any of the following starting at the \$250 level: Newsletter (\$800), intern or student employee (\$500), rent (\$2500).

We would like to thank the members who have volunteered to help with our Packers' concession stands and mailing the winter 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.

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.

The Judge in WMC vs DNR in Waukesha Circuit Court Case Ruled Against DNR and the Public but stayed his decision.

We were pleased to report that the decision against the DNR and therefore Wisconsin citizens was stayed subject to an appeal. The [CWAC Fall 2022 Newsletter](#) provided a detailed review of the case. We are currently supporting the DNR's role in protecting the public from PFAS and other chemicals under the spills law with friend of the court briefs, which are now before the State Court of Appeals.

We thank donors who helped with legal fees, and we continue to seek donations which should be noted as "for legal fees" on your check or online payment.

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.

In February, we filed a written comment on the S&S Jerseyland Dairy permit to the DNR. This CAFO seeks a permit to double their dairy herd to approximately 14,000 cows. We also sent a letter to the owners of the farm persuading them not to expand. There was great community opposition to the expansion. 70 people commented at the virtual hearing and others sent in written comments.

In January, we attended the Governor's budget listening session and made comments on protecting our water from industrial farming.

The Petitions to the EPA for The Safe Drinking Water Act.

The EPA took no action on this ongoing petition to provide clean drinking water in 2022 even after we held a meeting with EPA Region 5 representatives in June. Another meeting will need to be scheduled.

Green Bay Coal Dust Complaint Further Investigated



Coal piles along the Fox River in Green Bay. CWAC photo.

On our behalf, Midwest Environmental Advocates requested and received EPA files regarding the C. Reiss Coal Company's dust control plan. For citizen coal dust monitoring, MEA created a record sheet that is based on the company's dust control plan and the weather conditions at the time of the observation. We will then be able to document whether the company is compliant, and if not, then submit the records of non-compliance to the EPA. We plan to meet with residents near the coal company this spring to formulate a monitoring plan.

A review of City of Green Bay documents confirms that it is unlikely the coal piles will be moved soon.

PAH and Coal Tar Sealant Ban Efforts Continue

The Clean Water Action Council received an award of \$6,875 from the 100+ Women Who Care of Door County. CWAC will use the award to provide community education

about the hazards from coal pavement sealants and encourage towns and villages to ban the product in Door County.

This sealant contains 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; a lifetime exposure can result in a 38-fold higher risk of cancer.**

Contact us to help get a ban passed in your community. Click this link for a slide presentation on the topic: <https://www.youtube.com/watch?v=0xjvileDHg&feature=youtu.be>



Pictured are, from left, Susie Cotter, 100+WWC Board; Kim Larson, 100+WWC Nominator/Advocate for Clean Water Action Council; and Ann Morgan, 100+WWC co-founder/president.

Educational Efforts in the Community

Virtual Presentations

We hosted Professor Al Gedicks, PhD, who gave an update on the Back 40 Mine and mining concerns in Wisconsin to about 35 people via Zoom. Al was our Environmental Citizen award winner in 2021. On March 23, Emily Tyner will give an online presentation designating Green Bay as a National Estuarine Research Reserve. See *Mark Your Calendar* on pages 16 & 17 in this issue.

Food Waste Composting Education to Reduce Organics in Our Landfills.

We have composters available for \$60 and will provide individual or group instruction on how to compost food waste.



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. On April 13, we will present "Using the Laws" to Lifelong Learning Institute members in Manitowoc. 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 Winter 2022-2023 newsletter was sent to 550 members in December. 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* mailing 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. Dean Hoegger was interviewed by WBDK radio regarding various 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. We hired former intern, Gracyn Holcomb, as an administrative assistant. We have received a \$5,000 donation from Green Bay Packaging's George Kress Foundation for her salary that was met with other donations. We thank the Sisters of St. Francis of the Holy Cross, Christine and Dave Kellems, The Kent and Kristen Powley Fund, Carole A. Wood, Thomas Delsart, and Christine Seidl, for helping us with the match.

Other Actions

CWAC Attends Meetings with Other Environmental Groups

We attended many of the biweekly meetings with the No Back 40 Mine group and monthly meetings with directors of other state environmental groups.

CWAC Staff Attended Trainings and a Conference.

A PFAS educational webinar, a CAFO Webinar, a 501 (c) (3) Advocacy Training, and The Phosphorus Conference, sponsored by the UW-Center For Water, were attended. The Phosphorus Conference was largely focused on where phosphorus comes from, the harm it causes, and how to mitigate it. Finally, Randy Jackson, a professor of Grassland Ecology in the Department of Agronomy at UW-Madison, presented about how to eliminate phosphorus from our waterways. Jackson spoke persuasively about ending cultivation in favor of permanent grasslands. Learn more at <https://grasslandag.org/>

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)

<https://www.facebook.com/cleanwateractioncouncil>

LEARN ABOUT THE NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM (NERR) AND THE BENEFIT OF GREEN BAY RECEIVING THIS DESIGNATION

**A presentation by [Emily Tyner](#),
Director of Freshwater Strategy,
UW-Green Bay**

March 23 at 6:30 PM via Zoom

Register at:

<https://www.cleanwateractioncouncil.org/events/>

PRESENTATION DESCRIPTION:

A significant water initiative that UW-Green Bay is leading is the designation of the bay of Green Bay as the next National Estuarine Research Reserve System (NERR). The NERR system is a network of 30 sites across the coastal US, including the Great Lakes, designed to protect and study estuaries and their coastal wetlands.

Emily Tyner, UWGB Director of Freshwater Strategy, will discuss what a NERR designation will mean for northeast Wisconsin, share maps of the nominated natural area sites within the Green Bay estuary, and talk about the research, education, stewardship, and training opportunities that come with a NERR designation.



Dine and Bid for the Environment

Silent
Auction!
5:00 - 8:15

FUNDRAISER

Thursday, April 20

Social: 5:00

Silent Auction: 5:00 - 8:15

Dinner: 6:00

Program: 6:30

Music: 7:15 - 8:00

\$30

Dinner & Program
(ADVANCE ONLY)

Gluten-Free
Chicken
or
Portabella
Mushroom

Featured Speaker:

Adam Payne, Wisconsin DNR Secretary

recently appointed by Governor Tony Evers

Music provided by:

Dale Anderson of the Delta Jets

**DOOR
PRIZES!**

Riverside Ballroom

1560 Main St., Green Bay



of Northeast Wisconsin

Your environmental advocacy group in Northeast Wisconsin

A fundraiser for
The Clean Water Action Council

PURCHASE TICKETS ONLINE AT:
www.cleanwateractioncouncil.org

Dine and Bid for the Environment

Thursday, April 20, 5:00-8:30 p.m., Riverside Ballroom, 1560 Main St., Green Bay

Our annual banquet features a silent auction with a huge selection of art, collectables, and unique gift certificates. Dorothy Summers, harpist, will play before dinner. Our dinner choices are gluten free. Choose a roasted chicken quarter or a roasted portabella mushroom with marinara sauce. Each entrée includes potatoes, vegetable, mixed greens salad, dessert (gluten free), and coffee. **Tables can be reserved for parties of six. Dinner served at 6:00 PM.**

The program includes our Environmental Citizen Award and introduction of board members.

Our featured speaker is Wisconsin Department of Natural Resources Secretary Adam Payne who was recently appointed by Gov. Tony Evers. The DNR website states, "Secretary Payne has deep Wisconsin roots, growing up in central Wisconsin and learning how to fish, trap and hunt from his father. An active outdoorsman and conservationist today, he continues to enjoy camping, hunting, and fishing with family and friends." The Secretary's topic will be "A Focus on Clean Water."

Live Music, 7:15-8:00 PM by Dale Anderson of the Delta Jets

COVID-19 Information

We are limiting attendance to 200 people at the Riverside Ballroom which has a capacity of 575 people, and we will follow the CDC's local recommendations. Tables will be set for six people instead of the usual 8-10.

Make it a group gathering. Buy 5 adult tickets, get one free, and have a table reserved for your group. Takeout meals will be available upon request.

-----Cut here and return-----

Ticket Order Form for \$30 Advance Tickets, Students \$22.

Please consider ordering a block of tickets to sell to friends. Buy 5, get one free.

(Please mail your order by Friday, April 14)

Please indicate the # of your dinner preference(s):

Tickets will be mailed to your address below:

() Roasted quarter chicken (Gluten-free)

() Roasted portabella mushroom (Gluten-free)

Phone #: _____

(In case we have a question on your order.)

Each entrée includes a vegetable, a mixed greens salad, dessert (gluten-free), and coffee.

of tickets _____ @ \$30 each. Buy 5, get 1 free.

of student tickets _____ @ \$22 each

for a total of \$ _____

Please include payment with your order.

Checks payable to:

Clean Water Action Council

P.O. Box 9144

Green Bay, WI 54308

_____ Yes, I have an item for the silent art auction/door prizes. I will bring it by 5:00 or call Dean at 920-421-8885 for prior pickup (preferred).

Or order online with an additional small service fee at:

<https://www.cleanwateractioncouncil.org/events/>

HEARINGS:

Thursday, April 13, 9:30 AM – 12:30 PM
Drinking Water and Groundwater Study Group Meeting

Join through Zoom or at 101 S. Webster St., Madison

Meeting details are TBD

For more information visit: <https://dnr.wisconsin.gov/calendar>

Access the Zoom link here: <https://us02web.zoom.us/j/86074802254#success>

EVENTS:

April 20, 2023, 5:00 PM – 8:30 PM
Clean Water Action Council Earth Week Banquet
Riverside Ballroom, 1560 Main St, Green Bay

Dine and Bid for the Environment! Clean Water Action Council is hosting our Annual Banquet with silent auction items up for bid from 5:00 – 8:15 PM. Tickets are being sold for \$30 which includes dinner and a program, featuring guest speaker Adam Payne, the recently appointed Wisconsin DNR Secretary. Music will be provided by Dale Anderson of the Delta Jets. Join us for a night of fun and fundraising for the environment!

Please contact us, at contact@cleanwateractioncouncil.org or (920)-421-8885, if you have an item you would like to donate for the silent auction.

Purchase tickets online at:
www.cleanwateractioncouncil.org

Saturday, March 18, 1:00 – 2:00 PM
Bluebird Birdhouse Building Workshop
Kohler-Andrae State Park, 1020 Beach Park Lane, Sheboygan

Participants will learn about bluebird behaviors and assemble X-Box birdhouses for their use. Birdhouse kits cost \$7 each, bring a hammer if available. A great activity for children and the adult's in their lives. Register in advance at the Park Office by calling 920-451-4080.

For more information visit: <https://dnr.wisconsin.gov/events/65556>

Wednesday, March 22, 12:00 – 1:00 PM
Lunch & Learn: Harmful Algae Blooms
Webinar

Discover more about the National Park in your backyard! Tune in and turn your lunch hour into the best part of your day through Wild Rivers Conservancy's limited webinar series, Lunch & Learn. Explore topics that resonate throughout the St. Croix National Scenic Riverway and bring the experts to the comfort of your home, office, or wherever you may find yourself.

For more information visit: <https://wildriversconservancy.org/event/ll032223/>

Register for the Zoom link here: <https://us06web.zoom.us/meeting/register/tZMsf-yrqT4sEtxG5lK5c-spwhKh6Qi6TFwT>

Thursday, March 23, 6:30 PM
NERR (National Estuarine Research Reserve System)
Presentation Hosted by CWAC, Zoom Meeting

A significant water initiative that UW-Green Bay is leading is the designation of the bay of Green Bay as the next National Estuarine Research Reserve System (NERR). The NERR system is a network of 30 sites across the coastal US, including the Great Lakes, designed to protect and study estuaries and their coastal wetlands.

Emily Tyner, UWGB Director of Freshwater Strategy, will discuss what a NERR designation will mean for northeast Wisconsin, share maps of the nominated natural area sites within the Green Bay estuary, and talk about the research, education, stewardship, and training opportunities that come with a NERR designation.

For more information visit:
<https://www.cleanwateractioncouncil.org/events/>

Sunday, March 26, 9:00 – 11:00 AM
Waterfowl at Menominee Park
Menominee Park, 1240-1212 Siewert Trail, Oshkosh

Join the search at Menominee Park for birds, especially waterfowl. Waterfowl migration should be at its peak with a nice variety of divers, dabblers, mergansers, geese, and hopefully swans. Number and variety of species will be dependent on the progress of migration, wind direction, and weather conditions.

For more information visit: <https://www.winnebagoaudubon.org/new-events/2023/3/26/waterfowl-at-menominee-park>

April 1 – April 30, 9:00 AM – 5:00 PM
Habitat Exhibition
Green Bay Botanical Garden, 2600 Larsen Rd, Green Bay

Habitats provide homes for all living things, from the tiniest ant to the tallest tree. The exhibition Habitat explores the critical need for varied habitats, how interconnected and fragile they are, and what we can do to protect them.

For more information visit: <https://www.greenbay.com/event/habitat/2472/> or <https://www.gbbg.org/explore/events-exhibits/habitat-exhibit/>

Wednesday, April 12, 7:00 – 8:30 PM
Fish Tales Lecture Series: Development of Selective Connectivity
Crossroads at Big Creek, 2401 Michigan St, Sturgeon Bay

Dr. Daniel Zielinski, from the Great Lakes Fishery Commission in Traverse City, Michigan, will present "Development of Selective Connectivity for Fish Passage and Invasive Species Control at Fish Pass." Learn how science and engineering are being applied to achieve bi-directional, selective fish passage, and controls of sea lamprey on the Boardman River near Traverse City. Learn how the experimental approach at the Broadman River will inform improved fish passage that prevents range expansion of key invasive species, and how this could be applied to the Great Lakes.

For more information visit:
<https://www.doorcountylibrary.org/event.html>
Join the Zoom link at: <https://us02web.zoom.us/j/83895497465?pwd=SkpkL1NZVVVicDcxaE9FNFNHRnlHZz09#success>

Saturday, April 15, 5:30 – 7:30 AM

Annual Midwest Crane Count

45 Assigned sites in Winnebago County

Over 1,600 volunteers participate in this spring survey which supports the International Crane Foundation's mission to conserve the world's 15 species of cranes and the natural communities on which they depend. There are about 80 whooping cranes in the reintroduced population in Wisconsin and counters have the chance of sighting one!

For more information visit:

<https://www.winnebagoaudubon.org/new-events/2022/4/9/annual-midwest-crane-count>

Please contact Evelyn Meuret at 920-573-7828 or evelynmeuret57@att.net for more information and questions.

Wednesday, April 19, 11:30 AM – 1:00 PM

Earth Caretaker Award Ceremony

Phoenix Rooms – Union, 2430 Campus Ct, Green Bay

The Earth Caretaker Award Ceremony recognizes University of Wisconsin-Green Bay graduates who have distinguished themselves in their professional field and are widely recognized for their career accomplishments in the areas of sustainability, environmental management, environmental policy, or other closely related areas.

For more information visit: <https://uwgb.emscloudservice.com/calendar/EventDetails.aspx?EventDetailId=99589>

Please contact John Arendt at arendtjo@uwgb.edu for more information or questions.



Saturday, April 20-23

Every Day is Earth Day hosted by Sustain Door

Thursday and Sunday at Crossroads, Friday at Northern Sky Theater, and Saturday at the Kress Pavilion

The four-day celebration of the people, organizations, and businesses that respect, preserve and protect our green earth-care culture in Door County and beyond with a weekend of resource exchange, an environmentally focused open house, speakers, demonstrations, and activities for kids and adults. This year's theme is "Healthy Water, Healthy Soil, Healthy Food for a Healthy Community."

The schedule follows:

Thursday, April 20, 6:30 PM

Watch a Movie at Crossroads at Big Creek

Friday, April 21, 7:00 PM

Experience an Earth Show at Northern Sky Theater

Saturday, April 22, 10:00 AM – 4:00 PM

Visit Exhibits and Presentations at the Kress Pavilion in Egg Harbor

Sunday, April 23, 2:00 – 4:00 PM

Participate in Demos and other Outdoor Activities at Crossroads at Big Creek

Saturday, April 29, 7:30 – 8:30 PM

Woodcock Walk at Bohn Farms Glacial Habitat Restoration Area

Welsch Rd and County Road B, Winneconne, WI

Join in the search of American Woodcock as it performs its spectacular sky dance at dusk. You will also have the opportunity to listen for Wilson's Snipe, Sandhill Cranes, and choruses of frogs that utilize the property's ephemeral ponds. The estimated walking distance of the outing is 1 mile, but terrain may be uneven, wet, and muddy, so rain boots or rubber knee boots are strongly recommended.

For more information visit: <https://www.winnebagoaudubon.org/new-events/2023/4/29/woodcock-walk-at-bohn-farms-glacial-habitat-restoration-area>

<https://www.winnebagoaudubon.org/new-events/2023/4/29/woodcock-walk-at-bohn-farms-glacial-habitat-restoration-area>

May 5-7, 2023

New Leaf Garden Blitz Event

940 Prairie Ave, Green Bay

Since 2014, volunteers have installed over 800 raised bed garden boxes in Green Bay schools, homes, pantries, and organizations. You can become a part of the annual Garden Blitz tradition by volunteering, donating, purchasing a garden box, or becoming a garden mentor.

For more information visit: <https://newleaffoods.org/garden-blitz>

Saturday, May 6, 6:00 AM – 12:00 PM

Oshkosh Bird Fest

Save the date! More details to be posted later

Visit: <https://www.winnebagoaudubon.org/new-events/2023/5/6/oshkosh-bird-fest>

Thursday, May 11, 5:00 – 7:00 PM

Finding Dairyland

Neville Public Museum, 210 Museum Place, Green Bay

Enjoy dinner followed by an interesting and informative program. At the dawn of World War II, Wisconsin was home to nearly 200,000 dairy farms. Today, barely 6,000 remain. The ghosts of the missing ca still be seen in withering old farms along lonely highways, some restored, many abandoned or decayed, but all with a story to tell.

For more information visit: https://www.browncountywi.gov/government/county_calendar/?i=neville_ba6bdfae2b41
Register at: <https://48075.blackbaudhosting.com/48075/Dinner-Program-2022-23-Finding-Dairyland>

Tuesday, May 16, 6:30 – 7:45 PM

Planning & Planting Seed Saving: An evening with national expert and award-winning author Bevin Cohen

Brown County Central Library, 515 Pine St, Green Bay

Learn how to plan in spring for a successful vegetable seed harvest in the fall! Bevin Cohen will cover key topics such as why seed saving is important; spacing and isolation distances; seed-saving equipment and techniques; his favorite varieties for beginning seed savers; interesting crops to try; information about pollinator partner plants; and more.

For more information visit:

<https://browncountylibrary.evanced.info/signup/>

Thank you!

**Green Bay Packaging's
George Kress Foundation**
for a match grant to fund
a part-time student position
with CWAC

and

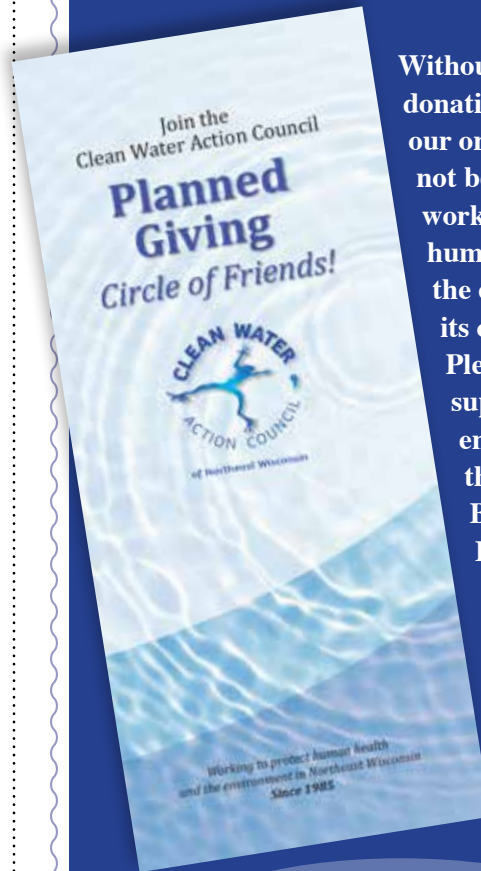
**Sisters of St. Francis
of the Holy Cross,
Christine and Dave Kellems,
The Kent and Kristen Powley
Fund, Carole A. Wood,
Thomas Delsart,
and Christine Seidl**
for helping us with the match.

Thank you!

**100+ WOMEN WHO CARE
OF DOOR COUNTY**

for funding to protect citizens from
coal tar pavement sealants
in Door County.

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*

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

**Have you renewed
your membership for 2023?**

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

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:

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

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By e-mail:

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