Clean Water Action Council
OF NORTHEAST WISCONSIN

Celebrating 39 years of working to protect public health and the environment in Northeast Wisconsin

WINTER 2024-2025

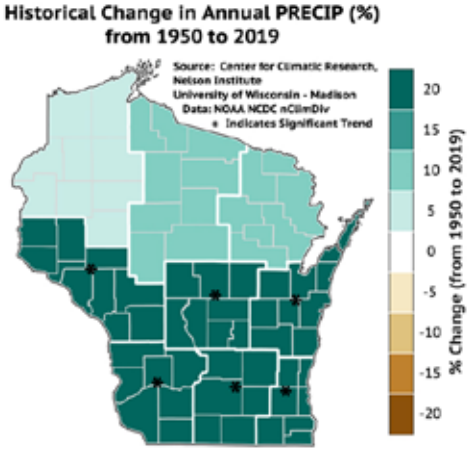
Understanding and Responding to Climate Change in N.E. Wisconsin

Algal blooms are expected to become worse as Wisconsin's climate becomes warmer. Photo courtesy of WPR.

Introduction

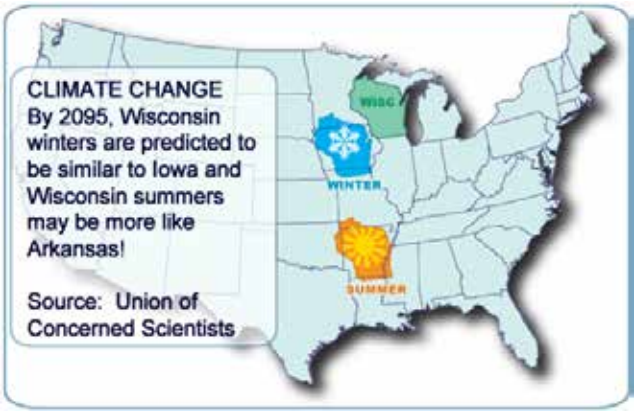
by CWAC President Dean Hoegger

As an environmental organization founded on a concern for water quality in northeast Wisconsin, we are especially concerned about the impact of climate change on our water resources. Northeast Wisconsin is rich with water resources, from Lake Michigan, Green Bay, and their contributing watersheds, to the hundreds of smaller lakes enjoyed by residents and tourists. Our local economy is fueled by activities dependent on clean water. That clean water, already impacted by climate change and water pollution, will be under extreme threat in the years to come—unless we take decisive action.



Wisconsin precipitation change from 1950-2019 for each of Wisconsin's nine climate divisions (white borders). Asterisks indicate that the precipitation trend is statistically significant. Source: Wisconsin Initiative on Climate Change Impacts via Wisconsin DNR.

Rainfall predictions for Wisconsin, made a decade ago, are already having a negative impact. Greater rainfall, especially during winter, with warmer temperatures, are creating conditions prime for runoff. Wisconsin is one of the top 10 corn producing states which saw a 50% increase in production since 1983. When corn is planted without a cover crop, it can lead to serious runoff of nutrients from farm fields. Runoff of manure and fertilizer lead to algal blooms in surface waters, which will become more severe with higher summer temperatures.



Wisconsin's climate is predicted to be more like southern states and the transition is already underway. Image courtesy of Union of Concerned Scientists.

Temperature predictions indicate that our climate will become more like that of Iowa in the winter, which is currently the top corn producing state. Therefore, if there is a market demand, it is likely Wisconsin farmers will devote more acres to corn, creating even more nutrient runoff and more algae polluted waters.

We must have stronger regulations to prevent this runoff threat. Greater cultivation setbacks from bodies of water, such as streams and rivers are needed. Currently, most setbacks are only five feet providing a paltry amount of vegetative barrier to hold back soil and nutrients during periods of heavy rainfall.

The amount of manure allowed to be spread on vulnerable fields also needs to be reduced. We cannot keep granting expansion permits to concentrated animal feeding operations (CAFOs). We are already beyond the carrying capacity for liquid manure waste to be spread on soils already saturated with phosphorus. CAFO expansions with a warmer environment could spell disaster for our water resources.

Read more in this issue about the impact of climate change in northeast Wisconsin and the challenges faced with responding to these changes. Then share the newsletter with a member of Generation Z. The *Chicago Tribune* and other publications reported that of young people aged 16-25 who were polled, 60-85% indicated they wanted more action on climate change. This newsletter lists organizations for all generations to connect with and take action on climate change.

The Science and Myths of Climate Change

By George Mason, Guest Writer

As you read this, a mixture of gases swirls high above you in our atmosphere. Primarily composed of Nitrogen (N_2), Oxygen (O_2), and Argon (Ar), those three gases comprise 99.96% of the compounds in our atmosphere. The other 0.4% consists of Carbon Dioxide (CO_2), Methane (CH_4), Water Vapor (H_2O), Nitrous Oxide (N_2O), Sulfur Hexaflouride (SF_6), and other trace gases. It is that 0.4% comprised of what are called greenhouse gases that present a problem for the earth's temperature. All greenhouse gases function the same way; they absorb infrared radiation and then re-emit that radiation in the form of heat. At normal levels, the gases in our atmosphere protect the planet from ultraviolet radiation, warm the planet, and prevent extreme temperature differences between day and night.

For our discussion, we are going to focus on one greenhouse gas, Carbon Dioxide (CO_2). As you drove your vehicle today, it emitted twenty pounds of CO_2 into the atmosphere for every gallon of fuel combusted. They will absorb incoming infrared radiation from the Earth's surface, causing the CO_2 molecules to release absorbed energy as new infrared photons. Not all of those infrared photons are released toward the earth, some are released toward space, which cools the planet. The crux of the global warming phenomenon is that as the concentration of CO_2 increases, more infrared photons are released toward the earth, heating its surface.

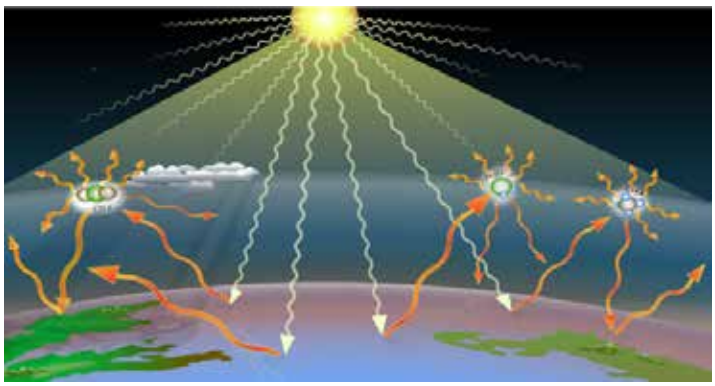


Figure 1. Diagram of Greenhouse Gas Infrared Re-radiation.
Credit: "A loose necktie" on Wikimedia Commons

Annual average atmospheric CO_2 has increased from 315 parts per million (ppm) to 425 ppm (26%) since daily measurements began in 1958 at the Mauna Loa and Mauna Kea climate observatories. The annual average atmospheric CO_2 record level has been broken every year since measurements started. Those measurements are irrefutable, factual data. In addition to those modern measurements, Antarctic ice core gas analysis gives us an accurate picture of CO_2 concentrations going back 800,000 years. The news we can glean from the data is not good. For the last 800,000 years, atmospheric CO_2 levels have averaged 290ppm, until 1850 when we see the beginning of a drastic change.

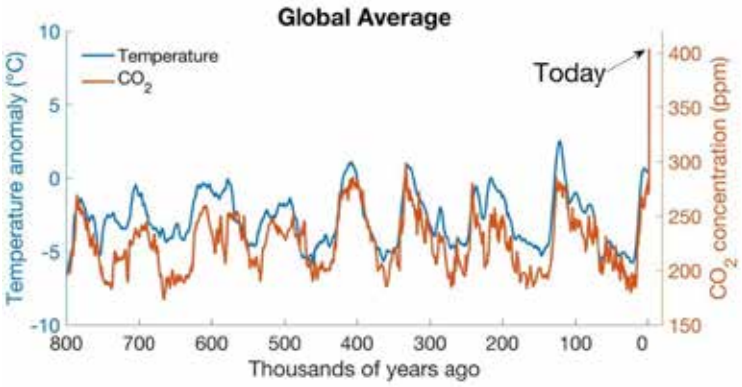


Figure 2. **Global average CO_2 levels in atmosphere and temperatures.** Image courtesy of Ben Henley and Nerilie Abram/The Conversation and Climate Action. Data from Parrenin et al. 2013; Snyder et al. 2016; Bereiter et al. 2015.

Since 1850, CO_2 levels have risen by 32%. Regardless of which direction the re-emitted infrared photons are released, this also means that the photons released toward earth have increased by 32%. The problem is compounded by the fact that every other manmade greenhouse gas has also increased since 1850. Total amounts of infrared photons from all manmade greenhouse gases is estimated to have increased by over 40%. As those photons return to the planet, they warm it. That increased temperature results in a cascading series of positive feedback loops, magnifying the problem.

As temperatures increase across the planet, the warmer air holds more H_2O, resulting in yet more infrared photons reaching the earth's surface. As temperatures increase, land and sea ice melt, exposing darker surface materials which absorb energy directly from the sun and re-radiation. Based on Arctic temperature measurements, it is likely that we crossed a threshold in 1985, a point of no return in terms of limiting temperature rise to below 2.7°F (the Paris Climate Agreement goal). Since then, emissions have risen every year, and that goal is now unachievable. Manmade emissions will peak in 2050 resulting in an atmospheric CO_2 level of 498ppm for an increase of 42%. Combined with the other manmade greenhouse gases, the increase in infrared photons reaching the earth will be near 55%.

So why aren't we taking action similar to the legislation which resulted in reduced Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_x), and Chlorofluorocarbons (CFCs)? A deliberate campaign has been led by the fossil fuel industry and other industries to flood the public information space with misinformation driven by industry funded organizations who retain scientists willing to compromise their ethics for profit. The prime example of this is the "CO_2 Coalition." Led by a Princeton photon chemist named William Happer, this one organization is the driving force behind the misinformation campaign. This organization and others spread a wide range of climate change "myths."

The Earth's temperature has always changed. This is true, however, never before in the history of mankind have we had 8.2 billion people living in megacities dependent on global agricultural, fisheries, mining, and transportation industries. The idea that we can compare temperature impacts on humans 12,000 years ago to what we have today is a ridiculous fallacy.

CO_2 is good for plants, so more is better. This is one of the primary arguments of the CO_2 Coalition. The problem is that in the various pathways that plants use to sequester carbon, CO_2 hasn't been the limiting factor in plant growth for 30 million years, when C4 grasses evolved in the Oligocene. Phosphorus is the limiting factor in every carbon pathway for plants. We can increase CO_2 to whatever level we like, but without a corresponding increase in Phosphorus and other elements, the plants can't sequester it. This is proven out by the fact that CO_2 levels continue to increase. CO_2 "forcing" in greenhouses only works due to the increase of fertilizers. We can't fertilize the entire planet.

Volcanos are the cause of current CO_2 levels. Human activities release 60 times the amount of annual CO_2 emitted by volcanic eruptions. While in the distant past, volcanic trap eruptions accounted for every catastrophic CO_2 increase, we haven't had a trap eruption on the planet for 252 million years.

Temperature measurements are inaccurate. Yet another fallacy based on misinformation. The National Center for Environmental Information uses a variety of methods to standardize historical and current temperature measurements. They adjust for station changes, instrument misreading, and observation methods. Our temperature data since 1880 is extremely accurate.

Until we replace the fallacies and misinformation spread by organizations like the CO_2 coalition with the facts I have outlined above, we will never attain the level of public support needed to effect legislative change. Climate change scientists, organizations, and the minority of the informed populace have failed to counter the climate change denial movement. We all need to do better, and to pressure our government to educate the US populace. Until we do that, the problem will continue to grow.

Guest writer George Mason holds a BS degree in Earth science and an MA in International Relations. A past Harvard and MIT fellow, he spends his retirement documenting the impact of Climate Change on coral reefs and glaciers.

"Our goal is not just an environment of clean air and water and scenic beauty; the objective is an environment of decency, quality, and mutual respect for all other human beings and all other living creatures."

- Gaylord Nelson

Climate Change and the Future of Wisconsin's Forests

By Dave Verhagen

Trees are often cited as a means to combat climate change. The theory states that if you plant enough trees, they will absorb enough carbon dioxide (CO_2) from the atmosphere to slow down and even reverse global warming.

However, trees themselves are suffering from the effects of our warming climate. Trees and forests are being overwhelmed by the massive volume of greenhouse gases we have dumped into our air. It is not just that they are outmatched, trees and forests themselves are being weakened and damaged by the growing disruption of their natural environment.

The short story: The University of Maryland looked at the rate of current climate change and developed a forecast model of how specific locations will change by the year 2080. Woodruff, in the heart of the great northern Wisconsin woods, is one town they looked at.

Woodruff is famous for robust forests and countless lakes, home to lush snowfall and superb ice fishing in the winters. It is an outdoorsman's paradise. Its environment is characterized as "temperate broadleaf and mixed forests."

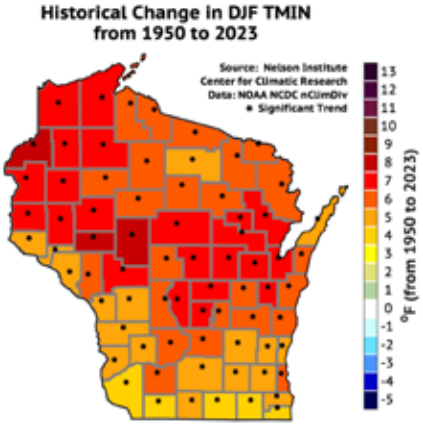
Image, courtesy of University of Maryland Center for Environmental Science.

By 2080, its likely to resemble savannahs and grasslands. Average winter temperatures are expected to rise by 13.5°F and be 16.9% wetter than today. The impact these changes upon the Northwoods will change them dramatically.

John Bates in his book *Our Living Ancestors* describes the Wisconsin Northwoods in great detail. It is an ecosystem in constant churn, renewing itself in response to storm damage, wildfires, insect invasions, disease, etc. It is a forest community overall, which incorporates these churning conditions as an integral part of its unique ecosystem for long-term equilibrium.

The biggest disruption to the forest was when most of Wisconsin was logged over in the late 1800's. First the pines were cut to build Chicago, Milwaukee, and Minneapolis. Then the hardwoods went to make floors, trim and furniture.

The cleared land failed to support agriculture and fell into a sorry state until the Great Depression, when federal jobs programs put people to work replanting the state with trees of commercial value. The trees that succeeded were those best suited to our climate and to the soils where they were planted.



Dec/Jan/Feb Temperature(°F) Minimums

The economy of our Northwoods now features forest products and recreation. Logging mostly occurs during the winter, when frozen soils and wetlands allow heavy machinery to work the woods more easily. The snowpack insulates trees and soils, protecting them from some of the damage that can occur while harvesting and transporting timber. As the winters warm, logging will have to change its practices.

Recreation is a year-round business, but snow sports cannot thrive in the climate foreseen by climatologists. Hunting, fishing and camping will all be affected as Wisconsin heats up and our experiences in these woodlands changes.

A warming climate means changes in the plants and trees that will find the most success. The familiar makeup of our forests is likely to change. Paper birch, quaking aspen, balsam fir, and black spruce are not expected to thrive under warmer conditions. Oaks, hickory, pines, and invasive species may well out-compete them.

The Forest Working Group of the Wisconsin Institute of Climate Change Impacts at the Nelson Institute for Environmental Studies in cooperation with the DNR summarize the growing effects of a warming climate:

Warmer winters are tipping the competitive balance between species, opening the forest to non-native species and making forest management more difficult.

Larger deer population leading to greater damage to young trees and the forest understory, preventing usual forest adaptation.

Drought risk may increase due to longer, warmer growing seasons, higher evaporation rates, and changing precipitation patterns.

Heavy precipitation events are becoming more frequent, damaging riparian (flood plain) areas, roads, bridges, and other infrastructure.

Stressed forests are more susceptible to damaging diseases and insect pests. Non-native pests and diseases are finding our climate more favorable.

Urban forests will fare better. Our parks and urban landscaping are going to be able to respond to changing climate conditions because cities and their residents can select tree species better suited to rising temperatures and can manage pests in these more limited areas. Thus, there will be a more rapid turnover of trees and plants in the urban environment to more heat tolerant species.

The conclusion of these studies is that further warming of the climate is no longer avoidable. Our current efforts may ease the worst changes, but a return to the climate regime of fifty years ago is a century or more away. Entire generations of people will live with the necessity, not just the wisdom, of employing sustainable practices in all aspects of our society. Perhaps that is the best outcome our trees and forests may be able to look forward to.

Can N.E. Wisconsin Help Birds Adapt and Survive Climate Change?

By: Debra Noel

Climate change impacts weather patterns and brings more extreme conditions such as drought, excessive rainfall, less snow cover, extreme lake level changes, flooding, extreme heat, wildfires, intense and frequent tornadoes, hurricanes, and ocean warming. All these drastic and rapid changes in weather and climate affect birds directly and indirectly.

There are 44 highly vulnerable and 63 moderately vulnerable species of birds in Wisconsin for reasons including loss of habitat, window crashes, and outdoor cats being major threats, but climate change is becoming a significant factor. These vulnerable species may lose more than half of their current range of habitat. We must do everything possible to give birds a fighting chance to adapt and survive climate change.

One-fourth of world population of the endangered golden-winged warbler are found in Wisconsin and Minnesota. Photo courtesy of Cornell University.

Erratic and warmer temperatures are changing the timing of migration patterns and egg laying. Timing of the emergence of food sources including plants, seeds, and insects is changing, and birds may miss the peak times during their migration journey.

Years of scientific and civilian data shows many North American species are shifting their winter and breeding ranges northward to escape heat and drought effects.

Waterfowl flying at sunset. Courtesy of Tom Koerner, US. Fish and Wildlife Service.

The Christmas Bird Count over the last 90 years shows many species including woodpeckers and large forest predators such as hawks are observed farther north. Some species are extending their ranges in search of food and habitat that has dwindled in their usual ranges. This can cause interactions with other other birds and animals leading to predation, diseases, and competition of food and habitat.

The Great Lakes region has the advantage of being a huge buffer zone to reduce the impact of extreme temperature swings. The open water of rivers and lakes helps protect habitat. Plants and insects are less likely to freeze during new growth and are kept cooler and hydrated during droughts, reducing damage and providing a vital sanctuary for birds. The protection of wetlands, natural beach fronts, and tree cover to reduce erosion and increase shade along shores, is critical for waterfowl and shoreline birds.

Diversity of terrain, soil, native plants, and landscape can greatly help bird species adapt to climate change. Therefore, it is vital to protect and increase our Great Lakes region's natural areas. This will help support year-round birds, as well as the millions of migratory birds that need a safe haven to breed, rest and feed during migration.

A diverse ecosystem as illustrated by Rosalie Wetzel, courtesy of USFWS.

There are many ways we can improve birds' survival from climate change and other negative impacts on our avian friends and allow birds a fighting chance to recover.

If we reduce bird deaths from outdoor cats, window collisions and pesticides, it will improve and increase the populations of many species to counter the climate change effects.

Seven Simple Actions to Help Birds.
From Birds, Cornell Lab of Ornithology

- Restore habitat on your own property. Plant types and varieties of trees and shrubs that produce food and shelter. Provide watering sources/bird baths and keep clean and safe for access and use. Restore buffer zones of trees and brush between fields and waterways.
- Reduce our carbon footprint and tread lightly in places birds live. Four things you can do about your carbon footprint: https://www.bbc.com/news/science-environment-58171814

- Prohibit Fireworks in sensitive areas, mindful construction and tree cutting and it's timing, reduce cutting of brush areas that provide much needed nest cover and food supplies.

- We can pressure companies and industry to adhere to bird saving and climate change measures. Get involved with your community, town or city to adopt bird friendly policies and increase/improve safety and stop over habitat for birds. See https://www.audubon.org/our-work/cities-and-towns

- Your choices in products, careers, stocks, company support. Be a positive mentor to children and everyone around you can help awareness and protection of birds and their survival for future generations to come.

- Get involved in the Christmas bird count, buy shade grown coffee and cocoa products to help reduce destruction of forest habitat, donate to plant trees, support national parks, nature centers, and wildlife land and wilderness areas.

- Join and support bird and environmental groups such as Clean Water Action Council, Audubon, American Bird Conservancy, Cornell Lab of Ornithology, and FeederWatch. Studies show that human interaction with birds improves the awareness and protection of birds. Bird feeding may give humans something to chirp about. You can make a difference no matter where you live.

This historic life-altering fall election will negatively affect all living creatures. At risk is the loss of environmental protection policies and government agencies will likely cause climate change reduction measures. Government supported scientific studies on birds and wildlife may soon be reduced or eliminated by the new administration. It is more important now than ever that we, as concerned individuals, take measures to counteract the major assaults on the environment expected to come.

The Impact of Climate Change on Wisconsin's Lakes

By Meaghan Dutton, Intern

The Upper Midwest has been called a "climate haven" with experts describing it as safe from the major impacts of climate change. Despite this label, Wisconsin is not exempt from the impacts of climate change, especially within our waterways. Warming temperatures are impacting ice cover, water temperature, flooding, and algal blooms, all of which are seen throughout Wisconsin. Since the lakes of Wisconsin are one of our most prized possessions, we need to do everything we can to protect them.

As we move into winter, outdoor winter activities will begin. The outdoor industry brought in almost $10 billion in 2022, and tourism related to these activities created another $23.7 billion. However, with warming temperatures, our lakes and recreational activities will be greatly affected. Ice coverage over the Great Lakes has already decreased by 63% since the 1970's and will continue to decrease in future years, with estimates of a 5% decrease every decade due to shortened freeze durations every year.

Loss of ice in Green Bay in February 2023 results in airboats rescuing fisher people. CWAC photo.

Our lakes are projected to warm between 3- and 7-degrees Fahrenheit in the next 70 years, which will continue to impact the ice coverage. Warming lakes and streams will impact the habitats of our northern fish, such as brook trout, northern pike, walleye, and many others. Partnered with lack of ice coverage, there will be a shift in species of fish in our waters, with cold water loving fish dying out.

Additionally, warming temperatures in our lakes will impact the metabolic rate of fish, raising them so that they require more dissolved oxygen, which is an issue since warmer water cannot hold as much dissolved oxygen as cold water. Shifting ecosystems will extend beyond lakes, and our northern lakes and forests will be deeply affected by these changes.

Warmer temperatures may lead to more rainfall, which is often followed by increased flooding. Nationally, what once were one-hundred-year flood intervals are now ten-year flood intervals. The EPA has stated that "…average annual precipitation in most of the Midwest has increased by 5 to 10 percent…spring rainfall and annual precipitation are more likely to increase."

According to FirstStreet.org, a financial and risk-modeling organization, there are currently over 2,100 properties in Green Bay at risk of flooding, and this number will only increase. Compared to the rest of the United States, Wisconsin has a lower-than-average risk of flooding, but climate change will increase these flooding events.

One of the most visible impacts of climate change on Wisconsin lakes is the presence of cyanobacteria, commonly called blue green algae. This alga has been around forever, but in recent years it has become an environmental hazard. The DNR and EPA have several reporting methods for algal blooms, due to their dangers to humans and the environment. When significant blooms are noted, the EPA advises against swimming, due to toxins present in the blooms.

Photo courtesy of Wisconsin Public Radio and Ryan Finn.

Blue green algae blooms are stimulated by a number of factors. First, increased rainfall can bring more nutrients, such as nitrates and phosphorus, to the waterways which increase the likelihood of algae blooms. These nutrients are introduced into the ecosystem by commercial, agricultural, and residential fertilizer, which are very difficult to regulate.

Second, blue green algae blooms grow more rapidly in warm environments. The combination of warming air and water temperatures allows blue green algae to grow and bloom for longer periods of time. Blooms most commonly occur in the late summer and early fall, but this timeframe could now start earlier and extend longer

Wisconsin's lakes cover nearly a million acres of the state and are high value assets. Unfortunately, they are at risk of being dramatically altered due to the impacts of climate change. Climate change introduces rising temperatures, increased risk of extreme flooding events, decreasing cold water habitats, and increasing blue green algae blooms, meaning Wisconsin's lakes need help. To preserve and protect this natural resource, we need to advocate for increased regulations of fertilizer, measures to reduce flooding, and a greater understanding of the impacts of climate change on Wisconsin's lakes.

Phenological Observations of Wild Food and Climate Change

By Crystal Brown

During the spring of 2022 and 2023, I hauled 5-gallon buckets of maple sap at a friend's sugar bush in the Penokee Mountains of Northern Wisconsin. It was the first week of April and I was post-holing through three feet of snow on snowshoes. We started tapping trees on March 20.

In 2024, when I showed up to haul buckets of sap on March 1, there was not even a drift of snow on the ground. We started tapping on February 8.

Over the last four years of harvesting wild rice and maple sugar, I have noticed variations in the start of the harvest. As I speak to experienced elders, they share that fluctuations do occur, however, they've noticed unusual changes as temperature and weather patterns become more variable.

Whether it is at a personal level or performed as a scientific practice, studying the timing of seasonal changes is known as phenology. It involves observation and record-keeping of natural phenomenon over the years, such as: When does the first trillium bloom? When does the first warbler arrive? When does the wild rice go into flower?

As a child, I participated in phenological observations, although they were more rudimentary and pleasure-based. I looked forward to the first snow of winter, tracking total snowfall depth by measuring it against the height of my father. I remember for many years snow consistently reached his chest. I am now my father's height and in the last 16 years of my life, snowfall depth has not reached higher than my waist and more often below my knees.

I was formally introduced to the study of phenology in high school after reading *A Sand County Almanac* by Aldo Leopold. He kept thorough records of natural phenomenon, centering on bird migration and plant life. In 2023, I had the opportunity to listen to UW-Madison Professor Emeritus of Conservation, Stanley Temple, speak on the impacts of climate change observed through phenology. He covered findings comparing the records of Leopold to that of Leopold's daughter. He noted observable scientific differences in phenological changes linked with climate change.

I take a particular interest in phenology as an adult now that I have an intimate relationship with wild food foraging and bio-regional herbalism. Much of my lifestyle is influenced by the changing of the seasons and life cycles of different plants, fungi, and animals. Over this last year I have noticed changes that concern me.

Ramps/wild onions (*Allium tricoccum*) sprouting on April 5, 2024. Photo Credit: Crystal Brown

Ramps/Wild Onions: Over the last five years, including this spring, ramps have consistently emerged closer to the first week of April, whether there is snow or not. However, I was concerned this October when my mentor, foraging author Sam Thayer, shared his observations of ramps reemerging again in the fall. He has never seen this in all his years of foraging and teaching.

Fiddleheads/Ostrich Fern: For the last couple of years, I've harvested fiddlehead ostrich ferns in Northern Wisconsin around mid-May. This year, they emerged two weeks early and almost past the point of harvesting due to weather changes.

Serviceberries: The serviceberries have ripened almost two weeks early this year, but I have also noticed the presence of more fungal rust affecting the plants. I question if unseasonably heavy rains at the beginning of spring affected the plants. Wild apples dropped early this year before they were even ripe, and they too have been affected by disease.

Healthy serviceberries, left, (*Amelanchier spp.*) on June 23, 2024 versus rust infected berries, right, on June 27. Photo Credit: Crystal Brown

Wild Mushrooms: In 2023, I did not see nor harvest any Maitake/Hen of the Woods mushrooms, as a lack of rain affected their growth. In past years they were abundant. This year, due to the early rains, the Maitake grew. However, I've noticed a steady decline in the amount of chanterelles emerging as we consistently have drier and warmer summers.

Wild Rice: This year was a struggle for many wild rice harvesters. The rice lifecycle changes from year to year; however, many reported being unable to harvest at certain lakes and rivers due to the early heavy rains and weather shifts that damaged many wild rice beds. Warmer temperatures affected water depth on some waterways during the harvest, where rice was too low to collect into canoes.

I spoke with my mentor Nick Vander Puy, former NPR reporter and outdoor guide, about the concerns from the wild rice harvest. He told me there are always bad years for harvest, but the earth provides in other ways. The unusual changes in rain and heat produced one of the most abundant wild blueberry harvests ever noted in the Pine Barrens by Lake Superior.

All these changes represent an invitation to explore how we will continue to get closer to the earth, to learn from all of our relatives navigating these changes, and to find ways that we can adapt as well. I would encourage you to note the phenological changes that are most important in your life, as a way of grounding yourself in what is to come with a shifting climate.

Carbon Pricing and Carbon Recapture

By Rick Adamski

Carbon Pricing is a tool that governments use to reduce carbon emissions. There are many ways to accomplish this goal; we all know that the hardest part is to agree upon what to do. Because the solutions must reach across all nations, most information comes from The World Bank's 'Carbon Pricing Leadership Coalition' (CPLC) and the Intergovernmental Panel on Climate Change (IPCC) of the United Nations. The two most common strategies are a carbon tax/fee and an Emissions Trading Scheme (ETS).

One process involves taxing the carbon emissions from industrial processes. The price of carbon emissions or other greenhouse gas emissions are taxed at a rate to encourage reduction of those emissions. According to the World Bank, as of 2019, 25 countries have implemented a carbon tax or are scheduling the implementation of a carbon tax. A prominent criticism of this tax is that it will impact middle- and low-income households hardest.

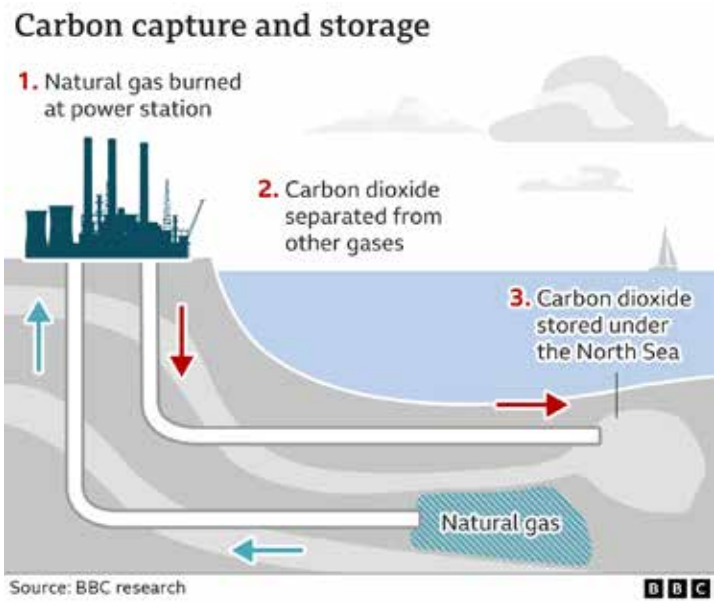
This impact could be reduced by a carbon fee and dividend. The Citizens' Climate Lobby advocates for adoption of the carbon fee and dividend process. As of 2022 Austria and Switzerland have implemented this system. In Canada, four provinces and two territories have adopted a fee and dividend system. According to Wikipedia, "A Carbon Dividends plan has been proposed by the Climate Leadership Council, which counts among its members 27 Nobel laureates, 15 Fortune 100 companies, all four past chairs of the Federal Reserve, and over 3000 US economists."

The other process to reduce greenhouse gas emissions is the Emissions Trading Scheme (ETS). The World Bank states that as of 2021 more than 21% of all greenhouse gas emissions are being regulated because China began an ETS. The IPCC calculates that the cost of carbon needs to be set at a price of $135-$5,500 per metric ton of carbon dioxide equivalents by 2030 to stay below a 1.5-degree Celsius world temperature increase. Currently China's price for carbon emissions is $10. Across the European Union the price of carbon ranges from $1-$139.

One common component of both emissions' reduction strategies is that both need to increase the price of carbon over time. This will enable more significant changes to occur as more infrastructure becomes available.

It is important to note that there are proposals to capture carbon from the atmosphere. One of those proposals is Pyrogenic Carbon Capture and Storage (PyCCS). This involves burning waste carbon sources and using the biochar product as a soil amendment to capture more carbon dioxide for a long time. CDR.fyi, an open-source public benefits corporation that promotes carbon capture enterprises, states that currently this process removes about 90% of all proven carbon removals.

The other current carbon capture practice is Bioenergy with Carbon Capture and Storage (BECCS). This process uses plant materials to be converted into useful fuels. This process often involves carbon dioxide emissions. These



*Carbon capture and storage process. Image courtesy of the BBC.

emissions are collected and then stored underground. This process is very expensive and involves a complex process.

There are other important steps that could have great impacts on the goal to reduce carbon emissions. One that is not often discussed is to phase out the government subsidies to the fossil fuel industry. That will be very difficult but may need to be considered if we are serious about solving this problem. Unfortunately, the fossil fuel industry funded a significant portion of the campaign for President-elect Donald Trump.

The values that have caused this problem will not be the values that solve it. Reducing carbon emissions will require all of us to think outside of the box of conventional thinking. Solutions are possible!

Carbon Sequestration Through Good Soil Health

By Rick Adamski

The science of climate change centers upon the reality that atmospheric carbon dioxide levels are rising more rapidly than the ability of our earth's ecosystems to absorb and utilize this excess carbon dioxide. There are other greenhouse gases that trap the sun's solar energy in our earth's atmosphere. According to the US Environmental Protection Agency (EPA) carbon dioxide accounts for about 80% of the greenhouse gases that are caused by human activity.

Large quantities of this carbon dioxide have already been absorbed into our oceans. This has caused the acidification of the oceans that are changing the home of all species living in the oceans. Many people believe that capturing carbon by using natural living systems will capture this available carbon dioxide to grow more plants and store this carbon in the soil.

The definition of carbon sequestration, according to the Merriam-Webster dictionary is "to bind or absorb (carbon dioxide) as part of a larger chemical process or compound." Plants need carbon dioxide to grow. Photosynthesis converts carbon dioxide into carbohydrates and other organic components that support other living organisms. The byproduct of photosynthesis is oxygen.

The complexities of the ecosystem are beyond the scope of this article. However, it is important to understand that plant growth is more than what we see. The roots of the plants are integral to its growth. These roots grow symbiotically with fungi that help the plant secure more nutrients necessary for the plant and the fungi utilize some of the carbohydrates produced by the plant for its own energy needs. When plants die at the end of a growing season or because the plant is harvested, the roots become part of the soil. This is a gross simplification of the carbon cycle.

Image courtesy of the Nature Conservancy.

Carbon based materials in the soil constitute the organic matter in the soil. The higher the percentage of soil organic matter, the healthier the soil. According to Sustainable Agriculture Research and Education (SARE) the amount of soil organic matter can vary greatly. Many natural conditions like the soil texture determine the amount of soil organic matter. The way we use the soil can determine whether the organic matter is increased or decreased. Soil organic matter makes the soil act more like a sponge because it holds water and other essential plant nutrients that are more readily available for the plants.

According to the US Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS), the five principles of soil health are: cover the soil, minimize soil disturbance, plant diversity, maintain continuous living roots, and integrate livestock. If these five principles are practiced, the soil health with improve. The amount of organic matter in the soil will increase. This will result in carbon sequestration. Unfortunately, few common farming practices today embrace all of these principles. There is increasing awareness, and some farmers are utilizing some of these principles. The practice of managed grazing is one farming practice that closely embraces all these principles, and many studies have confirmed that.

The Wisconsin Integrated Cropping Systems Trial (WICST) started in 1989 and continues to monitor the

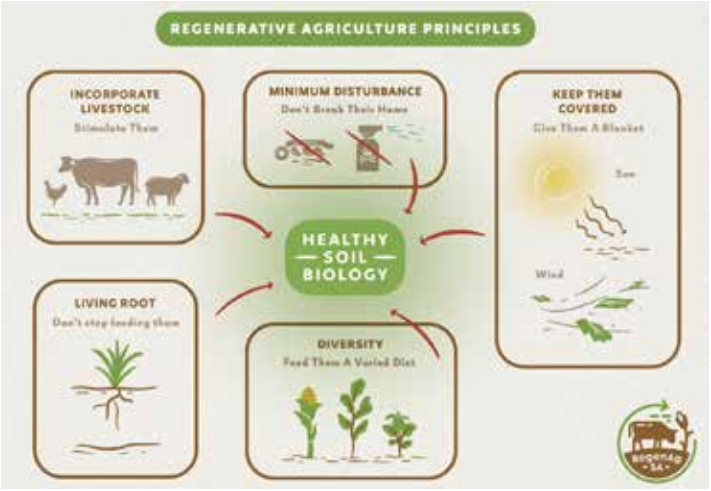


Photo courtesy of RegenAg SA.

effects of different cropping systems on the health of the soil. Five commonly used cropping systems have had a net loss of soil organic matter in these trials. The only two practices that increase soil organic matter are managed grazing and maintaining a prairie.

The ethanol industry is considering 'sequestering' the collected carbon dioxide at their production facilities by pumping it deep into stable bedrock formations. This practice is questionable because the gas does not interact with anything and would be released with any leaks of the system. It is also very expensive.

The potential to increase the amount of carbon dioxide in the soil is huge by using managed grazing and by maintaining a prairie. The benefits to the soil, water, and atmosphere would be significant. The cost would be less than any other mitigation process. These principles not only apply to farmland; all land-use practices would benefit. There is much carbon sequestered by forestland. Farming systems that integrate permanent tree crops with annual crops in amongst the perennial plants grow more food per acre and can sequester carbon.

These changes are possible, but it will require some dedicated efforts for more people to adopt these practices.

Why the U.S. Will Fail to Reach Paris Climate Accord Goals

By Charlie Frisk

In 2015, the United Nations called its members to Paris for a climate treaty summit. The U.S. was one of the original signees of the Paris Climate Accord (PCA), then pulled out of it during the Trump administration and has since rejoined under the Biden administration.

The most significant goal of the Paris Climate Accord is to limit the world's temperature rise to within 1.5 degrees Celsius (2.7 degrees Fahrenheit) of pre-industrial levels. To reach that goal the PCA is calling on the world's industrialized countries to decrease greenhouse gas emissions by 40-50% as compared to the baseline year of 1990.

The year was chosen as the baseline for the PCA because it marked the first time that countries gathered to coordinate efforts to reduce greenhouse gas emissions, primarily through the Kyoto Protocol, the first U.N. climate conference. Using 1990 as a baseline year allows for a consistent point of comparison for emission reduction targets in future climate agreements, as well as providing a historical context for measuring progress on climate change mitigation.

The United Nations Framework Convention on Climate Change (UNFCCC) is the international treaty formed as a result of the Kyoto Protocol and the Paris Climate Accord. Its goal is to limit human interference with the climate system by reducing greenhouse gas emissions, with 198 countries, including the U.S., signing the treaty. Unfortunately, according to the UNFCCC scientists, the U.S. has shown little progress in meeting the goals of the treaty.

Flags of the U.N. members at the United Nations. Courtesy of the United Nations Archives.

The UNFCCC does not judge all countries on the same scale. Rich, industrialized countries, such as the U.S. and the countries of Western Europe, have an obligation to make the fastest cuts because they have benefited the most from their historically high use of fossil fuels. With their healthy economies they also have the ability to absorb more drastic changes.

The countries of Europe have shown the greatest progress, reducing emissions by 32.5% since 1990 and are on track to reach the goal of 40-50% reduction by 2030. In fact, the European Union is considering setting a more ambitious target of 50-55% reduction by 2030.

In contrast, the U.S. has only cut emissions by 17% in comparison to levels in 1990. Why is one of the wealthiest countries in the world accomplishing so little? The U.S. has never developed a cohesive policy in regard to climate change. The U.S. is like a yo-yo, setting feeble goals when Democrats control the White House and generally abandoning them totally when the Republicans take over.

In a survey conducted by the PEW Research Center in 2024, only 12% of Republicans viewed climate change as a top priority for the President and Congress, in fact

Republicans viewed climate change last among the 20 issues included in the survey. Only 23% saw climate change as a major threat to the country's well-being. By contrast, 59% of Democrats say climate change should be a top priority for the President and Congress and 78% view it as a major threat to the U.S.

The most important change for society in order to combat climate change is to greatly reduce or eliminate use of fossil fuels, and yet 73% of Republicans want to see an increase in offshore oil drilling and 68% support an increase in hydraulic fracturing for natural gas and oil.

Most climate scientists view the evidence that climate change is occurring as straightforward and incontestable.

Climate change has been progressing more rapidly than any of the climate scientists had predicted. In 2020 the world was at temperature levels not expected until 2030, and by 2030 it will be at levels earlier predicted for 2050.

With those temperature levels, biologists are predicting that climate change will usher in a 6th major extinction event, possibly rivaling the asteroid strike of 66 million years ago. Many portions of the world are going to become uninhabitable due to high temperature, sea level rise, and the increase in catastrophic weather events. That will make the crisis we have at our southern border today seem like child's play to deal with.

Why then is it so difficult for Republican leaders to accept that human driven climate change is a reality and that it is going to require a strong political response to deal with it? The problem lies in the political platform of the Republican Party. The GOP views all regulations and government expenditures as burdensome and harmful to the economy.

However, dealing with climate change effectively is going to require major regulatory changes, as well as lots of government expenditure. It is just a lot less painful for most Republicans to continue to pretend that climate change isn't a reality.

The above portion of this article was written before the 2024 election. The remainder of the article is being written with full knowledge of the results of the election.

With Donald Trump as our incoming President there is little chance that the U.S. will be able to make up lost ground to comply with the goals of the Paris Climate Accord. Trump has made it very clear that he considers climate change a hoax and has said that he plans to withdraw the U.S. from the 2015 Paris Climate Accord at the start of his presidency. Trump and his advisors have also discussed withdrawing the U.S. from the underlying U.N. Framework Convention on Climate Change ratified by the U.S. Senate in 1992.

On November 11, 2024 the next round of UN climate negotiations began in Baku, Azerbaijan and the specter of a Trump presidency had a very chilling effect on those negotiations. "Pushing for more ambitious climate finance is going to be almost impossible without the U.S. buy-in, which will demotivate developing countries from taking seriously the climate ambitions of the West," said Elisabetta Cornago, a senior research fellow at the Centre for European Reform.

With a Trump presidency, any future progress by the U.S. on curtailing climate change is going to be up to states, cities and private industry. The federal government is going to be out of the picture for the next four years. In fact, Trump has promised to increase the use of coal, oil and natural gas and has set a goal for the U.S. to become the leading petroleum exporter in the world.

Sources:

"Hurricanes Helene and Milton Should Worry Us in Wisconsin," Caitlin Looby, *Milwaukee Journal Sentinel*, republished in *Green Bay Press Gazette*, October 10, 2024

"How Republicans View Climate Change and Energy Issues," PEW Research Center, March 1, 2024

"9 Years After the Paris Agreement, the UN Confronts the World's Failure to Reduce Greenhouse Gas Emissions, " *Inside Climate News*, November 2, 2024

"Trump Win Worries Climate Partners, President-Elect Says He Plans to Withdraw U.S. from Paris Agreement," Valerie Volcovici, Kate Abnett, and Gloria Dickie of the *Reuters News Service*, published in the *Green Bay Press Gazette*, November 10, 2024

The Impact of the Elections on the Environment

By Jane Benson

The November 5th general election will bring extreme changes. Let us tie together money and government structure with the political effects on the environment.

Global Billionaire Class

There's been a drumbeat for years about the economic disparity between the 1% and the other 99% of people. The richest 1% have more wealth than the bottom 95% of the world's population put together, according to a 2024 article by Oxfam International.

That makes it possible for a few billionaires to manipulate the masses in the U.S. with overwhelming disinformation and collaboration with foreign influences (like Russia) to achieve their desired autocratic political outcome. Autocracy means one strong man is in control, removing the checks and balances of our three branches of government (executive, legislative, and judiciary).

FEDERAL GOVERNMENT ELECTIONS

This Election Likely Historically Bad

The federal election is likely to be historically bad for the environment. One party (Republicans) will control the Presidency, the House of Representatives, the Senate, and have a Supreme Court stacked with ideologically conservative justices. This is a "trifecta plus." The only good thing is there are not 60 Republicans in the Senate. Sixty votes are required to end discussion and bring bills to a vote (cloture). Senate Republicans will have to have some Democratic cooperation to reach the 60-vote threshold, unless they abandon the filibuster.

Project 2025

Project 2025 is the conservative Heritage Foundation's policy blueprint for a Republican administration. Trump has disavowed it, but over 140 past Trump officials contributed to writing it. In 2022, when Trump gave a keynote speech at a Heritage event in Florida, he said the organization would

Project 2025 image by Jane Benson.

"lay the groundwork and detail plans for exactly what our movement will do."

NOAA and NWS

Project 2025 includes a section about the National Oceanic Atmospheric Administration (NOAA) and the National Weather Service (NWS) written by Thomas F. Gilman, an official in Trump's Commerce Department.

It describes NOAA as a primary component "of the climate change alarm industry" and says it "should be broken up and downsized." Breaking down NOAA would likely affect the future of the Green Bay National Estuarine Research Reserve. The coming reserve designation has been a point of pride for the Green Bay area and would draw tourism dollars and valuable environmental research.

Craig Fugate, an expert in NWS, said, "While Project 2025 doesn't call for the elimination of the National Weather Service, it places restrictions on research, climate products, and potentially limiting access to the NWS forecasters and centers such as the National Hurricane Center." For us, this would affect tracking and communicating about tornadoes and storms across the state.

Environmental Protection Agency (EPA)

Trump has chosen Lee Zeldin to run the EPA. "Lee Zeldin is a great pick," said Mandy Gunasekara, who served as chief of staff at the EPA under the first Trump administration. She wrote a section on the EPA for Project 2025. She recommends slashing the EPA's budget, removing career staff, eliminating scientific advisers that review the agency's work and closing programs that focus on minority communities with heavily polluted air and water.

The EPA sets standards our state Department of Natural Resources uses for things like allowable standards of PFAS "forever chemicals" in our water. It's not clear what EPA cuts will do to that process.

Repeal Inflation Reduction Act

Project 2025 repeals the Inflation Reduction Act (IRA), throwing away the single greatest investment in combating the climate crisis in American history. President Biden's Inflation Reduction Act directed an unprecedented $369 billion to move toward steep reductions in greenhouse gas emissions. The law invests billions in natural systems, habitat protections, voluntary conservation, and wetland restoration around the country, including the Great Lakes.

Withdraw from The Paris Agreement

The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties and activated on November 4, 2016. President Trump initiated the only country's withdrawal from the agreement (effective in 2020). Joe Biden rejoined the Paris Agreement shortly after he became President in 2021. Project 2025 recommends withdrawing again, despite even big oil companies, like Exxon discouraging the move because it would leave a void at the negotiating table. Trump calls climate change a "scam" and a "hoax."

WISCONSIN STATE ELECTIONS

We had new, fairer voting maps for the November 5 general election. They gave us more Democratic Assembly Representatives and Senators, which brought the ratio of Democrats and Republicans closer to reflecting our very purple state.

Split Government

We have split government with a Democratic Governor, Republican majorities in the Assembly and Senate, and a newly liberal-leaning State Supreme Court (2023). Even though the Governor is in his second term, the Legislature and Governor have not found a way to work together. Many bills are passed and then vetoed by the Governor. Special sessions are requested by the Governor and ignored by the Legislature. The Governor drafts a budget every 2 years, only to have it thrown out so the Legislature can write their own budget with different priorities.

Department of Natural Resources (DNR)

Regarding the DNR; Fred Prehn was the head of the Natural Resources Board two years longer than he should have been, and Senate Leader LeMahieu let him stay, refusing to confirm the new appointment recommended by Governor Evers. The conflict became a case before the state Supreme Court. The conservative Supreme Court at that time let Prehn stay on. Prehn was responsible for positions on PFAS "forever chemical" poisoning in groundwater and approving allowable standards for the toxins in surface water.

His overstaying was one of many DNR controversies. The DNR is seriously understaffed and underfunded. The pattern of LeMahieu not confirming the Governor's appointments is chronic.

Governor Evers accepted a great deal of federal Covid relief money on behalf of the state. He distributed the federal money across a wide variety of projects, subsidized childcare programs and even some school funding.

Meanwhile, state tax money came in and the Legislature let it accumulate into a $7 billion surplus. They approved $125 million for PFAS testing/remediation, but then the Joint Finance Committee refused to release its use unless Governor Evers signed SB 312. Environmental groups dubbed it the PFAS 'poison pill' bill. Evers vetoed the bill because it gave polluters immunity from responsibility for cleanup. It has been over a year now that the much-needed money is still sitting idle while people's health is compromised.

Our state government needs to learn to collaborate.

The Scott Walker "trifecta plus" days when Republicans had full control are long gone.

Contact your state legislators to demand:

- Release of the already approved $125 million for PFAS testing/remediation
- Confirmation of Gov. Evers' appointments
- Proper funding of the Department of Natural Resources

Tips for Reducing Your Carbon Footprint

By: John Gosling

See below for some quick energy saving tips you can start today. Detailed information on how Wisconsinites benefit from the Inflation Reduction Act can be found at Focus on Energy https://focusonenergy.com/blog/ira-federal-tax-credits

- Sign up for a free online home energy assessment to guide your actions https://focusonenergy.myenergyxpert.com/
- Invest in a programmable thermostat
- Use smart power strips and turn them off when devices are not in use
- Wash clothes on a cooler setting
- Switch to energy-efficient bulbs
- Use film on single glazed windows
- Wrap hot water tank and pipes
- Install smart thermostats and heating controls
- Whenever possible, drive less and bike more! Get a local bus pass or seek rideshare options. Consider an electric assist bike or an all-electric vehicle.

Explore more energy saving tips from We Energies (https://www.we-energies.com/savings/tips)

Having Climate Change Conversations and Finding Organizations Making a Difference

By John Hermanson

"We build the road as we travel." was a common phrase a deceased CWAC member and UWGB retired professor, Larry Smith, would spout when facing large issues such as climate change. When having conversations about climate change in N.E. Wisconsin, make sure to have a conversational approach, illustrated by Dr. Katherine Hayhoe in her Ted Talk, and stay informed with resources provided to you by CWAC or other groups informed about climate change.

Dr. Katherine Hayhoe's approach, for individuals making a difference in addressing climate change, is shown via her TED Talk dated April 3, 2024, and expounded upon in her book, *Saving Us: A Climate Scientist's Case for Hope and Healing in a Divided World*.

Based in Texas, Dr. Hayhoe has years of experience as an impassioned climate change educator who is informed as a climate scientist, a Christian, a Canadian, and a mother. Her advice for change makers is to engage in conversation without a bunch of facts and figures, but rather to lead with the heart, respect, and compassion. This is based on the notion that nearly all people operate with morals and values, even though they might not be exactly like ours. We then can work to connect our shared morals and values, such as a desire for health of our families, economic strength for our communities, and a stable world. This could help us address climate change with practical, real-world solutions that exist today.

Someone might purchase solar panels because it will save them money or give them energy independence, while another might purchase them because it is the right thing to do for the planet – different values with the same results.

There is roughly 7% of the population in the U.S. that are labeled "dismissive." Despite all you can provide in terms of facts and empathy, they will not budge. These are people to respectfully walk away from. The rest are accessible to changing their minds and behaviors.

Roughly 35% of people discuss global warming once in a while, according to the Yale Climate Communication Program. If more of us can be convinced to bring up "why climate change matters to us and what we might do about it," just think what is possible when we consider the following story Dr. Katherine Hayhoe mentions in her book.

Gyln Goodwin is an older Englishman that she met after a talk at the London School of Economics. Gyln had listened to her TED Talk and was inspired to have conversations with people in his London borough of Wandsworth. He showed her his list of twelve thousand conversations he had names for. The results of these conversations are in part due to the fact there exists a 2024 Carbon Neutral by 2030 Plan for Wandsworth.

In 2020, Door County had record high water levels of Lake Michigan and the bay of Green Bay that flooded streets, eroded shorelines, and caused lots of property damage. While scientists have determined a contributing relationship to these events was climate change, I canvased my lakefront neighborhood in Sturgeon Bay with a letter asking then Representative Mike Gallagher to support climate legislation such as a carbon fee and dividend. I did have some good conversations with the twenty-five or so neighbors ranging from full support to some folks that insisted the lake levels have always gone up and down and that global warming had nothing

to do with it. I wish I could say a quantifiable difference was made, but at least my attempts made me feel I had created awareness of climate change with some neighbors.

There are many good organizations available for membership, participation and information regarding research and action on climate change problems and their solutions. Some are listed below:

Citizens' Climate Lobby focuses on systemic change such as legislation for a price on carbon and dividend, En-ROADS Climate Interactive simulation model training and use, active local chapters in Appleton, Green Bay, Oshkosh, Door County, Waupaca, monthly speakers, Lobby Days in Washington DC.

Climate Change Coalition of Door County focuses on local actions and education such as tree planting, county- wide compositing initiative, community solar

Green Bay Sustainability Commission

Clean Wisconsin, Natural Climate Solutions

RENEW Wisconsin

Solar Share Wisconsin Co-op

Sierra Club Beyond Coal

350 .org

Interfaith Power and Light

Midwest Renewable Energy Association

Institute for Local Self- Reliance

Science Moms

Wisconsin Academy of Science Arts and Letters: Climate Fast Forward 2024

Project Drawdown

Wisconsin Initiative on Climate Change Impacts (WICCI)

NRDC Natural Resource Defense Council

RMI Rocky Mountain Institute is a think tank for energy efficiency, conservation, transportation, industrial greening

Canary Media

Bill McKibben newsletter

Third Act

Wisconsin Conservation Voters

NWTC Energy Program

Rewiring America

Citizens Utility Board (CUB)

Focus on Energy administers Inflation Reduction Act rebates and tax credits, energy savings programs

Green Tier is a WDNR program encouraging communities to go green

Clean Water Action Council's *Weekly Update*

Have you renewed your membership for 2025?

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

The Action in Clean Water Action Council

By Dean Hoegger, CWAC President and Executive Director

IT IS TIME TO RENEW YOUR MEMBERSHIP FOR 2025

Memberships are for a calendar year. We keep your membership active even when you renew later in the year, but please renew as soon as possible for 2025.

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. If you did not renew in 2024, please consider a more generous donation for 2025. **Membership donations are critical as they account for nearly half of our operational funds. Employee salaries are paid from a trust fund, our Packers' concession stand, and grants, not from membership donations.**

You can mail your membership donation with the enclosed or attached 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's 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 sponsor any of the following, starting at the $250 level: newsletter ($800 per issue), intern ($500 per semester), health forum ($500).

We would like to thank the members who helped complete the monthly water samplings, and Mary Raduc who helped educate municipalities about the hazards of coal tar pavement sealants. There are many volunteer opportunities with CWAC. Some are at the office, some outdoors, and another is volunteering at our Packers concession stand. Please consider a weekly two-hour volunteer shift at the office. Contact us to volunteer by calling 920-421-8885 or email us at contact@cleanwateractioncouncil.org.

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 and contact us with any questions. Previous gifts are funding much of our work.

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.

A Reminder, Our Office Has Moved

A reassignment of offices across many departments at UW-Green Bay occurred in May. We are now in 310P, Rose Hall. If you come for a visit, park in the Wood Hall lot. No permit is required for visitors and there is designated visitor parking. Rose Hall is the second building from the parking lot.

Get Our Weekly Update by Email

Each Tuesday, our Administrative Assistant Gracyn Holcomb emails the *CWAC Weekly Update* with Actions,

DNR Permits, Jobs, Events, In the News Updates, and Resources. We have upgraded to the Constant Contact email newsletter service, which makes the *Update* easier to read. If you would like something posted in the *Weekly Update*, please send us your information by Sunday evening to be posted the following Tuesday. 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.

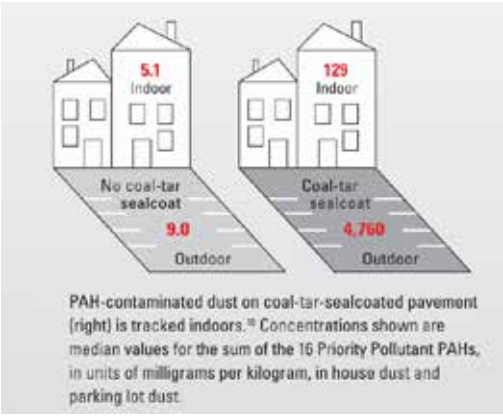
If you are reading this newsletter as a non-member, email us at contact@cleanwateractioncouncil.org to be placed on the free *Weekly Update* list. Emails are sent via BCC to protect your privacy.

Legal Actions

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

Our Effort to Ban High 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 some kinds of cancer. **Children living near parking lots or playgrounds treated with coal tar sealant are at the greatest risk for developing certain cancers during childhood. One sealcoat company owner that objected to a statewide ban stated that he has used it on many playgrounds without any complaints. How shameful!**



PAH levels when coal-tar sealant is used. Image courtesy of U.S. Geological Survey.

The state will not ban the product, at least not in the next few years. Therefore, we need your help 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

This summer and fall, with financial support from the Sisters of St. Francis of the Holy Cross, **we provided educational materials on this issue to municipal leaders in Appleton, Seymour, Wrightstown, Kaukauna, Suamico, Kimberly, Little Chute, Grand Chute, Ashwaubenon, Howard, Bellevue, Allouez, Shawano, Pulaski, Waupaca, Oshkosh, Neenah, Menasha, Oconto, Peshtigo, and Marinette. Over 100 emails and paper copies were sent out.**

We offer a 12-minute presentation about the health threat from the sealant and how other cities have banned it. **If you live in one of these communities, please reach out to an elected official and encourage the official to schedule a presentation or simply ban the product.** We can also provide sample ordinances for adoption.

The Wisconsin Manufacturers and Commerce vs the DNR case is now before the WI Supreme Court and is scheduled for oral arguments on January 14 at 9:45 a.m.

The case began in 2021 when Wisconsin Manufacturers & Commerce sued the DNR to limit the agency's ability to hold polluters accountable if they fail to clean up contamination they cause. After the lawsuit worked its way up through Waukesha County Circuit Court and the Wisconsin Court of Appeals, the State Supreme Court agreed to hear the case. Oral arguments are scheduled for January 14 at 9:45. CWAC will likely carpool to be present for the arguments. Let us know if you would like to attend.

The loss of the DNR's authority would likely significantly increase pollution from a host of chemicals that would no longer be regulated by the Spills Law. The court's decision could have far-reaching implications for the DNR's ability to protect Wisconsin citizens from toxic environmental pollution.

Sulfur Dioxide Complaint

We received a complaint in August regarding odors in Allouez and east Green Bay thought to be sulfur dioxide. Intern Meaghan Dutton did a thorough search of area pollution permits and compliance with those permits using an EPA database. While Meaghan did find permits granted for emitting sulfur dioxide, she did not find violations of those permits. We are now organizing a group of residents to file telephone complaints with the DNR to establish a record of concerns that might warrant establishing a SO2 monitoring station.

Meaghan also found there were numerous permit violations by Western Lime/Graymont Corporation, primarily for failure to submit permit compliance reports for the last 12 quarters. We are monitoring Wisconsin's legal actions to end the violations.

Contact us if you have an air quality concern in your community.

Tufco Industries in Ashwaubenon. CWAC photo.

Perfume Odors in Ashwaubenon

We received a complaint from an Ashwaubenon resident for what was described as an overwhelming perfume odor apparently originating from the Tufco Industries plant in the village. Meaghan reviewed the safety data sheets and investigated the ingredients. While no links were found to cancer risks or other

known health hazards from the ingredients, the odor may still be deemed as a nuisance due to its effect on the mental well being of residents. At the time of this writing, an Ashwaubenon Village meeting was scheduled for November 26. **Again, contact us if you have an air quality concern in your community.**

CWAC Alerts Readers about Pollution Permits, Hearings, and We File Comments

We monitor notices for new water pollution permits and renewals, then alert over 750 readers via our emailed Weekly Update, and sometimes we comment on permits. To receive notice of permits and hearings, email us at contact@cleanwateractioncouncil.org to request the privacy protected emailed update sent once a week.

We Filed a Contested Case Hearing on the Pagels Ponderosa CAFO Permit

Midwest Environmental Advocates filed the petition on for us and two other parties to challenge the recently issued DNR permit. Concern for the watershed, in which all the waterbodies are listed as phosphorus impaired, is the primary reason for the challenge. Contamination of drinking water from nitrates, a common problem resulting from spreading manure, was also not addressed in the permit. Pagels Ponderosa currently spreads over 100 million gallons of liquid waste on farm fields. The permit required no monitoring wells. We just received notice that the DNR will reject our petition. They applied the five-person requirement, which is a violation of the Clean Water Act. MORE TO COME IN THE *WEEKLY UPDATE.*

Petition to Invalidate Wakker Dairy Compliance Offset Credits

With help from Midwest Environmental Advocates, CWAC filed a petition with two other parties to nullify the credits that Wakker Dairy was receiving from the California Air Resources Board for offsetting California air pollution with Wakker's manure digester. The program requires recipients to be in compliance with local and state regulations. However, the Wisconsin Department of Justice brought enforcement actions against the CAFO in 2017 and 2018 while it was receiving hundreds of thousands of dollars in California credits.

Cultivation Monitoring Near Waterways.

We monitored additional cultivation setbacks from bodies of water this fall. We submitted several potential violations to Brown County Land and Water where corn was planted. Unless a cover crop is planted with the corn or there is a vegetative barrier, corn fields are a major source of nutrient runoff because the soil is exposed between corn stalks. The referrals we made did not have a cover crop and in some cases were closer to the required five foot setback.

Contact us if you have a site you would like us to investigate.

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

CWAC, with help from Midwest Environmental Advocates, is working with other organizations across the country to reactivate petitions filed under the Safe Drinking Water Act. However, the future of the EPA is now in jeopardy under the coming Trump Administration.

Educational Efforts in the Community

Monitoring Compliance with Wisconsin's Outdoor Events Recycling Laws.

We continued to monitor recycling at outdoor events, post scores in the Weekly Update, and contact municipalities and organizations responsible for the event recycling.

CWAC participated in the Environmental Roundtable at the Third Avenue PlayWorks, Sturgeon Bay on Tuesday, October 1 with other Door County environmental leaders and advocates.

Presentations 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 Fall 2024 Newsletter, *Will You Vote for the Environment on November 5*, was sent to 550 members in September and are now out of print. Multiple issues remain for the CAFO Expansions Continue…newsletter. Contact us if you would like to distribute some to friends, the public, or organizations. Newsletters are also available on our website at: https://www.cleanwateractioncouncil.org/newsletter/. Let us know if you would like printed copies of any of our previous issues.

Outreach through Media Contacts

CWAC sends press releases to local media, and we are often contacted to comment on developing environmental issues. We sent press releases too about 35 news outlets regarding coal tar pavement sealants and our efforts to

inform municipalities. These outlets also received news releases about the upcoming retirement of our executive director and the search for a replacement. (*See the poster on page18*)

Website Updates

Updated articles, resources, CWAC events, board member bios, and previous newsletters can be found on the website https://www.cleanwateractioncouncil.org/

Other Actions

Water Sampling at Baird Creek

We began water sampling at Baird Creek in May as part of the Lower Fox River Watershed monitoring program for water quality including levels of phosphorus. Water sampling is complete for the season. Please contact us if you would like to volunteer next year.

Water Sampling at Casco Creek

Board member Deb Noel is having water samples tested from Casco Creek downstream of Kinnard's Farm where the Sedron manure treatment system will be installed. Water sampling is being done to obtain a baseline for water quality before the system is installed.

CWAC Attends Meetings with Other Environmental Groups

We attend some of the monthly meetings with directors of other state environmental groups, and we network with other state and national organizations.

Citizen Complaints

Many of our more extensive actions, some requiring legal work, resulted from a follow-up of citizen complaints, such as the SO_2 complaint noted above. 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://apps.dfi.wi.gov/ice/berg/Registration/CredSummaryDetails.aspx?chid=933009&h=1122515367

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

MARK YOUR CALENDAR!
Meetings, Events and Happenings

MEETINGS AND HEARINGS:

Monday, December 9, 8:30 AM - 5:00 PM

Contested Case Hearing Regarding Keith and Colleen Mustain Permit Application to Fill in Wetlands in Oshkosh

The DNR has a hearing about the Keith and Colleen Mustain after-the-fact permit application case that is currently ongoing in Oshkosh. While the DNR denied the application in September 2023, the petitioners filed a petition for a contested case hearing. During this case they will be arguing whether the project represents the least environmentally damaging alternative to avoid wetlands and minimize adverse impacts. Learn more and join the meeting at: https://dnr.wisconsin.gov/calendar.

January 14 at 9:45 AM

The Wisconsin Manufacturers and Commerce vs the DNR case is now before the WI Supreme Court

Oral arguments will be held in the case which began in 2021 when Wisconsin Manufacturers & Commerce (WMC) sued the DNR to limit the agency's ability to hold polluters accountable if they fail to clean up contamination they cause. The lawsuit worked its way up through Waukesha County Circuit Court and the Wisconsin Court of Appeals in favor of the WMC. Now the Wisconsin Supreme Court will hear the case. Midwest Environmental Advocates has filed seven briefs in the case on our behalf, which will decide DNR's ability to hold polluters accountable. *Carpool with us to the State Supreme Court in Madison.*

EVENTS:

Tuesday and Wednesday, December 17-18

Wisconsin Water and Soil Health Conference

Wisconsin Dells, WI

Join other professionals to discuss the intersection of on-farm research and healthy soil practices. Deepen your understanding of water quality, soil health, and agronomy. Enjoy networking with farms and gaining practical knowledge about this field. Learn more at: https://cropsandsoils.extension.wisc.edu/wwash

Friday and Saturday, January 9-10

5th Annual Virtual Harmful Algal Bloom Symposium

Virtual

Join over 600 water professionals from across the region to learn about monitoring, treatment, communication, and community outreach. Enjoy a presentation from NOAA on freshwater acidification and how this connects to harmful algal blooms. This year the conference will focus on forecasting and detection, monitoring, prevention and treatment, and the human dimensions and climate change impacts. Learn more at: https://northcentralwater.org/habs

Saturday, January 18, 11:00 AM - 2:30 PM

Cabin Fever Series: Owl Pellets, Plants for Birds and Pollinators

Kohler Andrae State Park, Sheboygan, WI

Join Master Naturalist Laurie Hylen to learn about owls and Master Naturalist Janet Raddatz to learn about the crucial role that birds play in ecosystems. Learn more at: https://dnr.wisconsin.gov/events/100366

Contiued on next page...

MARK YOUR CALENDAR!
Meetings, Events and Happenings

Thursday, February 6
2025 RENEW Wisconsin Summit
Monona Terrace, Madison WI

Join RENEW for a day of exploring the impacts of renewable energy on Wisconsin communities. Join students, professionals, policy makers, and advocates for presentations, panel discussions, and networking opportunities. The theme is "Powering Tomorrow: Collaborative Innovations for Thriving Communities." They will discuss the latest advancements and collaborations in clean energy and sustainable futures. For more information and to register: https://www.renewwisconsin.org/renewable-energy-summit

Tuesday-Thursday, February 25-27
30th Annual Wetlands Science Conference
La Crosse, WI

Join other scientists, professionals, and students to discuss the wetlands and waterways of the Upper Midwest. The 3 day in-person conference will feature research presentations, networking opportunities, workshops, and field trips to local wetland areas. This year's theme is "Exploring the Confluence: Pearls of wisdom for wetlands, waters, and communities." Learn more at: https://conference.wisconsinwetlands.org/about

Monday-Friday, March 10-14
National Monitoring Conference
Green Bay, WI

Join federal, state, tribal, and local professionals to network, learn, and exchange information. This conference will be hybrid, with in person presentations in addition to virtual components. This conference will focus on monitoring and research done in the Great Lakes rivers, streams, lakes, wetlands, and groundwater. A major focus of the event will be the local Green Bay watershed. Learn more at: https://nwqmcconference.org

Meet Our Fall Semester Intern

Meaghan Dutton is a senior at St. Norbert College. She is pursuing a degree in geology, focusing on water quality and educational outreach. Meaghan has always been passionate about educating others about the impacts of climate change and appreciates the opportunity at CWAC to expand her horizons into the world of policy. She is interested in learning more about how to educate the public about issues that impact their lives, especially here in Green Bay. With her background, she is looking to pursue further education in geology and environmental education.

The Clean Water Action Council of NE Wisconsin is seeking a new Executive Director beginning January 2025

This is a PAID PART-TIME position located conveniently on the UWGB campus!

This half-time position with flexible hours offers the opportunity to guide this organization, founded in 1985, into the next decade. It's the perfect position for a person with a passion for protecting the environment, or someone seeking a part time position with flexible hours.

Work at the UW-Green Bay office with college interns, board members, and volunteers to carry out the mission of protecting human health and the environment in NE Wisconsin. Help determine priority issues and actions with this well-established organization.

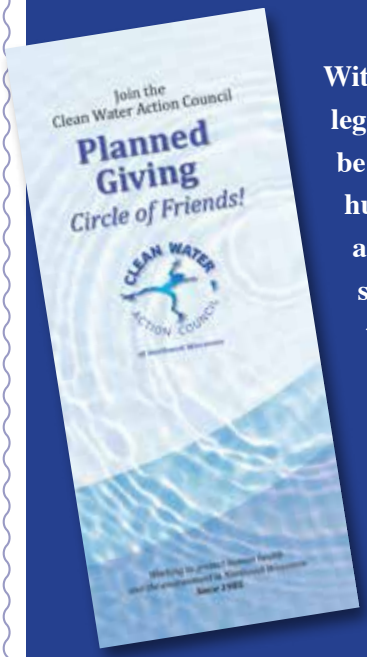
For a complete job description, salary, and application instructions, send an email to contact@cleanwateractioncouncil.org

Board Member Rick Adamski and His Family Receive Leopold Conservation Award

The Leopold Conservation Award 2024 Wisconsin Award was recently awarded to the Adamski family. The award is presented by the Sand County Foundation in partnership with American Farmland Trust, and state partners: Dairy Farmers of Wisconsin, and Wisconsin Farm Bureau Federation. The award is presented in honor of Aldo Leopold who wrote about and advocated for a Land Ethic. Leopold's book, "The Sand County Almanac" was published in 1949 and is still considered a foundation for today's conservation practices.

Rick and Valerie and their family have embraced Leopold's values by maintaining a permanent grass cover on their land. They harvest this crop by controlling the movement of beef cattle around their 200 acres of farmland in Shawano County. The practice has proven to be healthy for the land, the water, the plants, the cattle, and the people.

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

Thank you to...

Sisters of St. Francis of the Holy Cross
for additional support for educating municipal officials about the hazards of coal tar pavement sealants.

~

Packers' game concession stand volunteers!

~

Fresh Water Future
for a grant for water sampling at Casco Creek.

.....

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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.

The newsletter, "Clean Water Action Council of N.E.WI" is published quarterly by the Clean Water Action Council of Northeast Wisconsin, Inc., P.O. Box 9144, Green Bay, WI 54308, a registered non-profit charitable, educational organization.
Contributions may be tax-deductible.

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TIME TO RENEW for 2025!

in this issue...

Understanding and Responding to Climate Change in N.E. Wisconsin

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