



Wisconsin's Green Fire Completes Monroe County Climate Change Project

Photo credit: Bob Micheel

By Heather Stricker

Wisconsin's Green Fire (WGF) and a team of expert collaborators recently completed a first-of-its kind climate assessment of Monroe County, Wisconsin after one year of on-the-ground inspections, data collection, and expert analysis.

The **Monroe County Climate Readiness and Rural Economic Opportunity Assessment (CRREOA)** is a model for any rapid and comprehensive county-level assessment that brings together climate readiness and conservation-based economic opportunities.

Wisconsin's Green Fire worked with staff and associates from nine partner organizations, including the Wisconsin Initiative for Climate Change Impacts, Wisconsin Department of Natural Resources (WDNR), Wisconsin Land and Water, and The Nature Conservancy in Wisconsin. More than 40 team members represented Monroe County and state level experts in climate, hydrology, conservation, and policy. They thoroughly examined the County's land use, watershed health, forest resources, wetland resources, and agricultural practices for this report.

Monroe County, located in Wisconsin's "Driftless Area" in the southwestern portion of the state, has experienced more than 20 flash flood events since 2007. These flooding events have caused increasingly extensive damage. In

fact, Monroe County officials reported flood damage costs of more than \$33 million between 2010 and 2019, a whopping 1,000-fold increase from the costs reported between 1990 and 1999.

With the intensity and frequency of large rain events increasing in this area, combined with the region's hilly topography, changes in land use, and other stressors, flooding has become the central climate issue the County's residents and officials face. Experts on the assessment team recognized this early in the project, and they worked to find solutions for the County that would not only help reduce flood waters, but also mitigate climate change. With these goals in mind, the CCREOA team leaned heavily on nature-based solutions to "slow the flow" of water, while simultaneously creating co-benefits, including carbon sequestration, fish and wildlife habitat conservation, soil erosion prevention, and water quality improvements.

The project included research into both the aspects of the county that make it more vulnerable or resilient to climate change, and the key economic and political barriers and opportunities involved in on-the-ground conservation strategies. After the project team identified vulnerabilities in the county, they determined the areas of greatest concern using spatial analyses of climate and non-climate factors. The team

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Reflections

A Message from WGF Leadership

By Terry Daulton

Retrospective on Five Years

On February 25, 2017, outside Kemp Biological Station in Lake Tomahawk, the old-growth hemlocks were cloaked in fresh powder. Snow devils raced across the frozen lake, swirling and disappearing. The cold wind howled outside, but inside the cozy station, conservation conversation was heating up—driven by a growing frustration with state and federal administrations and their dismissal of scientific evidence in favor of politics. A group of about 40 was there to explore how to shift the trajectory of natural resource policy in Wisconsin.

The hardy folks, who had braved the elements to meet together that day, included retired Wisconsin Department of Natural Resources staff, NGO leaders, university professors, and federal agency experts. Because they brought expertise in so many areas—water quality, ornithology, forest ecology, toxicology, environmental education, land management, and environmental law, it seemed as if it were a gathering of the “Who’s Who of Wisconsin Conservation Leaders.”

We convened that day and Wisconsin’s Green Fire was born. We chose a state-wide focus managed by a board, with issue teams or committees. We discussed the important role of Native American tribes and the need to connect with the next generation of conservation leaders.

To mark our fifth birthday, I looked in the archives at our meeting notes. What we wanted then changed very little as it became codified in our mission, vision, and value statements.

From that day at Kemp Station, we set out to: (1) provide excellent science-based information to all user groups in a compelling non-partisan way, (2) be the go-to science group for natural resources decision making, (3) tell conservation success stories about issues and Wisconsin’s conservation legacy, (4) form a rapid response team and provide fact checking to curb misinformation, (5) track legislative bills, analyze them for impacts on natural resources, and provide timely comments, and (6) network with existing NGOs, media, and interest groups to maximize dissemination of our science analysis. While we have work still to do in these areas progress has been substantial!

At that first meeting, I read a quote from Howard Zinn’s *You Can’t Be Neutral on a Moving Train* that seems as important today as then: “*What we choose to emphasize in this complex history will determine our lives. If we see only the worst, it destroys our capacity to act. If we remember those times and places—and there are so many—where people have behaved magnificently, it gives us the energy to act, and at least the possibility of making the world spin in a different direction...*”

Looking back at that wintry meeting, I am amazed at how our programs have been built in our first five years on our initial vision. I extend thanks from the Wisconsin’s Green Fire Board to *all of you* for helping us achieve so much. All of you “have behaved magnificently” and I believe together we are helping the world spin in a different (and better) direction.

Terry Daulton

Mission

Wisconsin’s Green Fire supports Wisconsin’s conservation legacy by promoting science-based management of the state’s natural resources.

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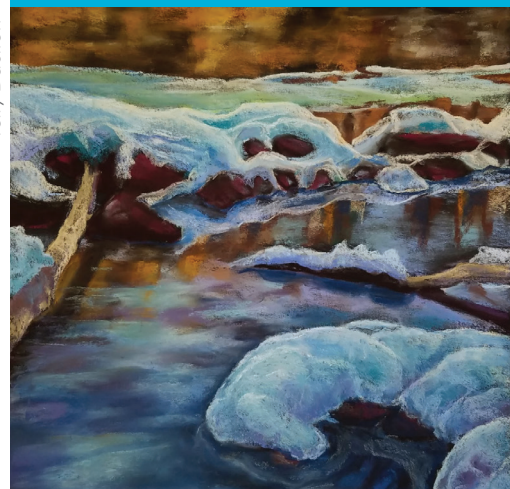
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"Lightning Flash" Work Group Updates

Environmental Rules and Water Resources

Members of the Environmental Rules and Water Resources Work Group are, in consultation with other organizations, exploring opportunities to influence the use of federal funds for agriculture and the environment. Comments were submitted on the Wisconsin Pollutant Discharge Elimination System (WPDES) Concentrated Animal Feeding Operations (CAFO) permit for Kinnard Dairy, multi-discharger WPDES variances and development of water quality standards for PFAS "forever chemicals." Members have authored a paper on creating a sustainable food system, are following the issue of carbon trading with agriculture, looking ahead to opportunities to influence rule development, and discussing observance of the 50th anniversary of the Clean Water Act this year.



Forestry and Public Lands

Linda Parker, who recently retired from the U.S. Forest Service after 30 years as the Forest Ecologist on the Chequamegon-Nicolet National Forest, is bringing her interest and experience in climate change to WGF. Linda has been a member of the Wisconsin Initiative on Climate

Change Impacts (WICCI) Forestry Working Group since its inception and is happy to say she will continue her work with WICCI, now as a representative of WGF. Linda recently summarized a climate-smart forestry demonstration project (the Board of Commissioners of Public Land's Oak-Pine Management at Woodboro Lakes Wildlife Area in Oneida County) which is now posted on the [WICCI website](#).

Wildlife

The Wildlife Work Group recently developed a statement on the February 2022 Federal ruling that re-listed grey wolves in Wisconsin as a federally endangered species. This statement outlines recommendations that promote scientifically-sound wolf management in Wisconsin, including encouraging the Wisconsin Department of Natural Resources (WDNR) to complete the updated Wisconsin wolf management plan, and restoring management authority to WDNR that ensures public participation. Additionally, we expect the WDNR to release the draft state wolf management plan later this winter or spring for public review.

Other issues the work group has been focusing on include participation in the Chronic Wasting Disease Response Plan Committee, reducing human-caused injuries to wildlife, conserving biodiversity in Southeast Wisconsin, monitoring updates to the Wisconsin Greater Prairie-chicken management plan, and the status of Recovering America's Wildlife Act legislation.



Student and Young Professional

The work group is in the process of creating the Spring Issue of Conservation Connections, a newsletter tailored for students and early-career professionals interested in conservation. This will be released the first week of April. We are also happy to announce that one of our members, Isabelle Herde, has agreed to be newsletter editor for the rest of 2022. In addition to the newsletter, we are developing an issue paper that addresses barriers faced by underrepresented groups when entering the conservation profession. Some members have gotten involved with the Diversity, Equity, Inclusion, and Justice (DEIJ) Community of Practice for Wisconsin Conservation to gain ideas and perspective on this important issue. We also continue to manage WGF's social media accounts and keep our student mailing lists updated with job, internship, and scholarship opportunities. Our membership coordinator, Marie Fiori, has been working to engage more students through email invitations, and we are excited to see the work group continue to grow.

Terry Daulton



"Lightning Flash" Updates

Conservation for All

by Dolly Ledin

Last fall we embarked on a journey. Our destination is diversity, equity, inclusion, and justice (DEIJ) in the field of conservation. We recognize that we have a lot to learn and a lot of work to do to get there, but we are committed and taking some important steps.

The first part of our journey was led by August Ball, who led a series of workshops to introduce us to the racial justice issues inherent in society and specifically in conservation. We then collaborated with partner organizations (Natural Resources Foundation, Gathering Waters, and the Wisconsin Wetlands Association) to form a [DEIJ Community of Practice](http://www.wisconservation.org/Community-of-Practice/) www.wisconservation.org/Community-of-Practice/. Our purpose is to learn together, collaborate and catalyze action. There are now over 70 conservation groups participating in this online learning community and attending bimonthly virtual meetings. We have learned about innovative programs at the Wisconsin Department of Natural Resources, Groundswell Conservancy, and the Wisconsin Association for Environmental Education in advancing DEIJ. Last month, Kelvin Alfaro from the University of Wisconsin-Madison led us through a variety of tools and strategies for making our work more just and inclusive.

All WGF members are [invited to join](#). You will receive updates on our bimonthly meetings and access to our "Slack" communication space where we are sharing successes, challenges, tools, and resources for positive change.

Our goal is to ensure that everyone has a voice in conservation. Please add your voice and join us!

WGF Encourages Participation in Spring Conservation Congress Meetings

The Wisconsin Conservation Congress provides a unique opportunity for citizens to provide input on important natural resource issues, from regulations on hunting and fishing to environmental topics. Due to continued concerns around COVID, this spring, input will be gathered using an online survey beginning April 11, 2022 (starting at 7:00 pm) and remain open through 7:00 pm on April 14, 2022. This year's survey will include questions on PFA's, wolf management, deer management and Chronic Wasting Disease, and fisheries such as walleye and other species-specific topics.

Visit [WDNR's website](#) to view the questions and more information.

Visit WGF's website at wigreenfire.org/our-work to keep up to date on WGF's work across Wisconsin



photo credit: Fred Clark

WGF Planning Summer 2022 Wisconsin Field Forums

As a WGF member/supporter, we're inviting you to join our 2022 Wisconsin Field Forums!

Each of our summer field forums will feature Wisconsin's Green Fire member experts, together with partners, policy makers, and local stakeholders in the field, sharing ideas, learning from others, and exploring far-reaching solutions to priority conservation issues.

Each tour will include time in the field along with focused discussion on policy and practice. This year you can:

- ▶ Visit sites in **Wausau** affected by PFAs contamination.
- ▶ Visit farms and the farmers in **Monroe County** leading the development of regenerative agriculture and climate resilience.
- ▶ Explore the **Milwaukee Lakefront** to understand the Public Trust with historians and local water-leaders.
- ▶ Paddle the **Wisconsin River** while we recognize the 50th Anniversary of the Clean Water Act.
- ▶ Walk the ground and understand the unique environmental risks around the proposed re-route of Enbridge Line 5 in **Ashland County**.
- ▶ Howl for wolves and understand wolf management issues at **Forest Lodge in Cable**.

Space for our tours will be limited and as a WGF member or supporter you'll have first access to register for these tours! To reserve your space for a Field Forum please go to our events website at wigreenfire.org/events and pre-register today. And follow us on Facebook, Twitter, and LinkedIn to stay connected and in the loop about all our upcoming events!

Wisconsin's Green Fire Launches Science Council

On February 23rd, over 40 of Wisconsin Green Fire's most dedicated volunteer members gathered on Zoom to launch a newly formed Science Council. The purpose of the science council is to:

- ▶ Help improve our program work by ensuring that WGF's subject matter experts have a forum to discuss important, cross-cutting issues and provide guidance to the organization.
- ▶ Publicly acknowledge our most committed members.
- ▶ Establish the credibility and capacity of WGF by highlighting the talented pool of conservation professionals who embody our mission and contribute to our work.

Fifty plus Science Council members have been appointed by WGF leadership and represent a wide range of expertise

– from fisheries and wildlife management to water quality, energy policy and education. Unlike WGF's Board of Directors, the Council does not take votes or determine WGF policy or actions, rather they hope to function as a think tank of sorts.

The February meeting helped set the stage for the Council by gathering input and ideas from its members and begin plans for an in-person meeting in the spring/summer.

When asked what participants hope to gain from their participation in the Council, there was a diversity of inspiring answers. Dolly Ledin, WGF Education Work Group Chair and advisor to the Student and Young Professional Work Group hopes that we can all better integrate our work to further collaboration with students and young professionals. Joy Perry, WGF member and retiree from the University of Wisconsin-Fox Valley Department of Biological Sciences, wants to see WGF effectively have some "multi-issue viewpoint discussions to provide input to work groups."

Jerry Bartelt, former WGF Board member and retired Wisconsin Department of Natural Resources (WDNR) staff in Wildlife and Forestry Research, emphasized a point made by many. He cited the growing public distrust in science, scientists, and elected officials and WGF's opportunity to better communicate what science is, how science works, and why it is important.

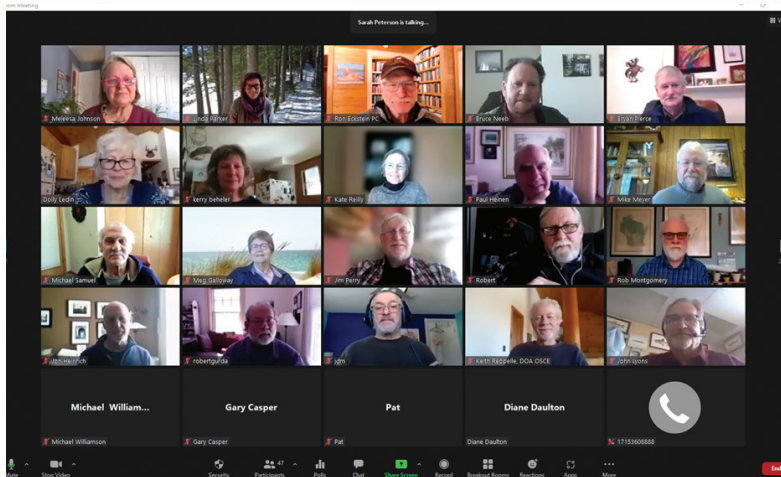
Members were also asked to identify the top methods that WGF uses to create impact and bring recognition to key issues. Sixty percent identified *Opportunities Now* papers, followed closely by WGF's connections and frequent conversations with Wisconsin State agency staff (56%), and our work delivering legislative testimony (47%).

The conversation then turned to where WGF can best spend its time and energy in the future, particularly considering WGF's plans to embark on a strategic

planning process. Mary Ellen Vollbrecht, WDNR retiree working on water programs and WGF Wetlands and Public Trust Work Group member, and Christine Mechenich, retired University of Wisconsin-Extension groundwater educator and member of the WGF Environmental Rules and Water Resources Work Group, urged the group to think outside the box. They both encouraged moving away from traditional avenues such as legislative testimony or frequent agency check-ins and instead looking for ways in which we can create citizen awareness (possibly through citizen science efforts) and make progress on important environmental issues. Many participants also echoed the need to set specific objectives, better

define our niche as an organization, and measure results of our work through evaluation efforts.

Stay tuned for more from the Science Council as the group continues to evolve and grow. The group hopes to plan an in-person retreat this summer as COVID allows.



State Climate Forecast: More Hot Days, Heavy Rains

By Don Behm

Wisconsin residents are seeing and feeling the impacts of a changing climate now.

Trends developing in recent decades show the changes in our climate that have already taken place. Scientists analyze the data alongside projected greenhouse gas emissions to forecast future climate trends.

Statewide, “the last two decades have been the warmest on record, and the past decade has been the wettest,” the Wisconsin Initiative on Climate Change Impacts (WICCI) said in a new report, Wisconsin’s Changing Climate: Impacts and solutions for a warmer climate.

The report is available on the WICCI website: <https://wicci.wisc.edu/>.

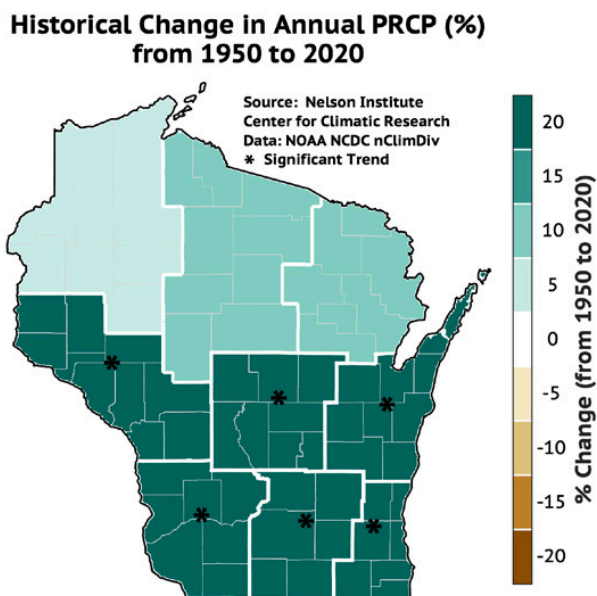


Figure 1: Wisconsin is getting warmer and wetter. This figure shows that Wisconsin is getting wetter – especially southern Wisconsin. Asterisks indicate regions with statistically significant trends.

Wisconsin is warming, with average daily temperatures creeping up by 3 degrees since the 1950s. By mid-century, “average temperatures in Wisconsin will be about four to six degrees warmer” compared to the end of the 20th century, the report said. With that, the frequency of extreme heat days over 90 degrees will increase.

While southern Wisconsin received the largest increase in precipitation from 1950 to 2020, the state overall became wetter – an increase of 17 percent, up to a total of 37 inches in annual average precipitation, according to the report. The trend is likely to continue.

More of each year’s precipitation has been coming from extreme storms than in the past. WICCI scientists concluded in the report that the frequency of extreme precipitation events in the state will increase in coming decades.

WICCI Assists Communities Respond to Climate Change

By Don Behm

Madison officials in the last decade recognized the need to plan for a wetter and warmer future.

More annual precipitation – a 40 percent increase from the 1940s to the 2010s – already was affecting the city’s infrastructure and operations.

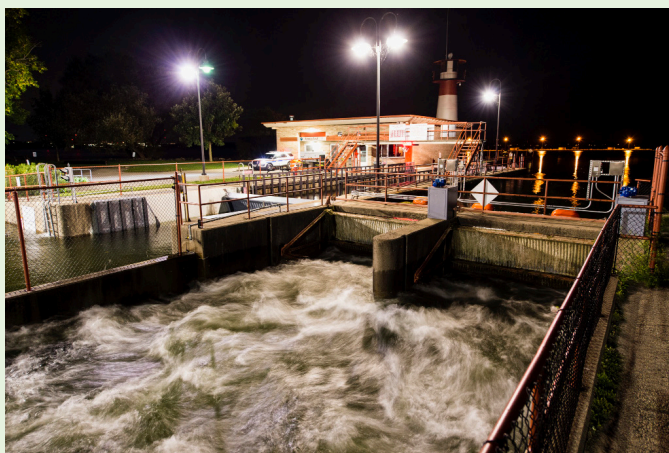
August 2018 floods emphasized the point after more than 11 inches of rain fell west of Madison over 24 hours and caused major flooding of the Yahara River.

Madison turned to the Wisconsin Initiative on Climate Change Impacts (WICCI) for guidance in addressing all risks the changing climate poses to the community and its residents, according to Steve Vavrus, co-director of WICCI and a senior scientist at the Nelson Institute Center for Climatic Research.

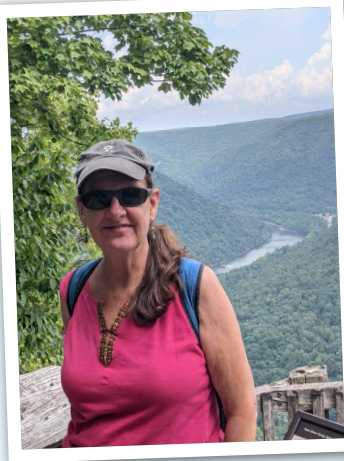
Putting Madison through a “climate stress test,” as Vavrus described it, is being done at nearly no cost to the city.

WICCI, a partnership of the Nelson Institute for Environmental Studies at the University of Wisconsin-Madison and the Wisconsin Department of Natural Resources, is known for its work explaining why the state’s climate is changing and how it is becoming more variable, and the impacts of those changes.

Less well known is WICCI’s willingness and capability to work with state communities to identify their vulnerabilities to a changing climate and how they can best respond to climate challenges, reduce inequitable impacts, and ensure a resilient future.



Water rushes through the Tenney Locks in Madison, WI on August 30, 2018, after flood-stage level of Lake Mendota water threatened the dam on the Yahara River following a record-breaking storm. (Photo by Jeff Miller / UW-Madison)



PROFILE IN CONSERVATION – Nancy Turyk

Nancy Turyk is the chair of WGF's Climate Change Work Group and has recently directed her career focus to climate change by contributing her expertise through local, state, and

federal work groups. We asked Nancy about her background, how she became interested in the field of climate change, and how she inspires others to fight climate change. **For Nancy's full profile, please visit our website at wigreenfire.org.**

How did formative experiences influence your career choices?

I spent my childhood outdoors, playing in and beneath favorite trees, helping my parents garden, picnicking and hiking at forest preserves, and camping with my family. As a result of spending so much time outside and my parents' love for the outdoors, I became very attentive to the environment.

I briefly lived in Kentucky after high school and took classes at Western Kentucky University, including Cave Biology and Karst Hydrology. Those experiences crawling, climbing, sampling, and running experiments in Mammoth Cave National Park were so intriguing. I ended up at the University of Wisconsin-Stevens Point (UWSP) and earned a BS in Water Chemistry with minors in chemistry and natural resource management, and an MS in Water Resources. I worked with Dr. Byron Shaw on groundwater research and completed my thesis on modeling phosphorus in the Petenwell Flowage. At that time being a woman in water chemistry was unusual, but Byron was supportive.

What are some lessons you have learned working with communities, especially around the topic of climate change?

My approach has evolved over time. Originally, community members wanted to learn why we thought climate change was occurring. For them, it seemed like the effects were minor and far in the future. As matters worsened, I focused my energy on those who were willing to work towards impactful change. I saw how deflated people were watching presentations on how the climate was changing and its negative effects. That was when I vowed to only do presentations that include solutions. No one who is deflated has the energy to be creative and focus their energy on change.

I learned to adjust my conversations and presentations to be meaningful to each audience. I sometimes only discuss the solutions. For example, sometimes I talk about energy efficiency or renewable energy from the standpoint of benefits and co-benefits and leaving the term "climate change" out of the conversation. It is not necessary to use terms that turn people away and slow action.

Until recently, climate change has always been an addition to my other work. At this point in my career, it is the primary topic that I want to focus on.

What is your advice for young professionals and students who are interested in a career around climate change-related projects/issues?

I am teaching a class at UWSP on climate change implications, policies, and solutions. My goal is to help students understand climate change and ways they can find and use highly reputable information resources in their careers. It will take everyone, not just climate change specialists, making the climate-positive changes we need to make progress toward a more resilient planet.

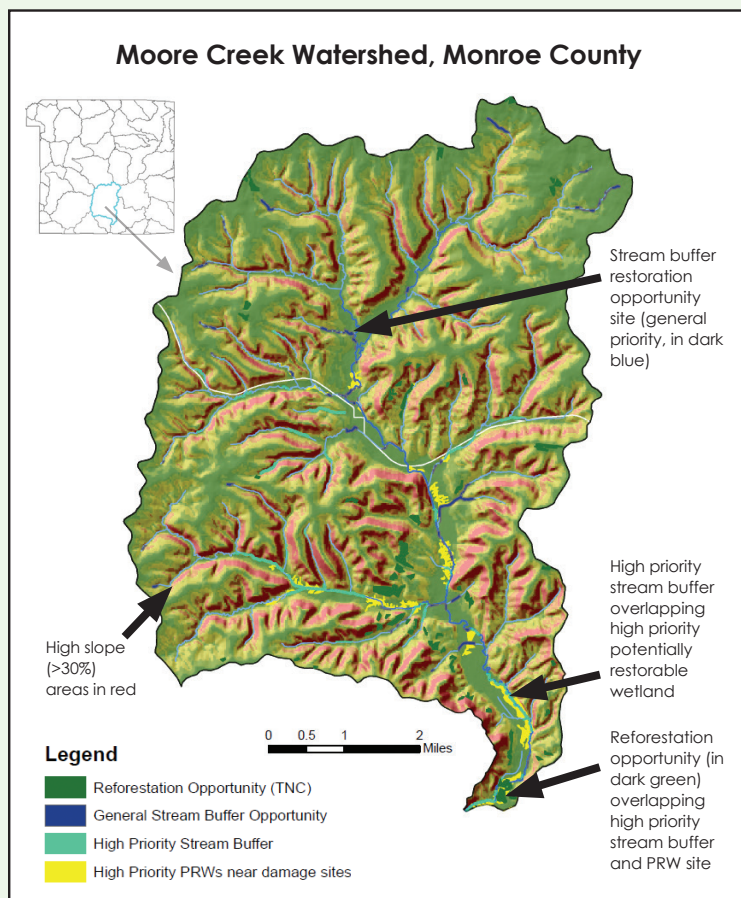


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also created a process to identify areas most amenable to restoration for greatest co-benefit (Moore Creek watershed results pictured) and conducted watershed analyses to assist with planning and prioritization.

Our team made over 70 recommendations to assist the County in strategically addressing future climate resiliency. While these recommendations centered on nature-based solutions that improve the physical environment of the County, the report also offers several supporting recommendations that build the County's capacity to implement these recommendations on the ground. Supporting recommendations include updates to spatial/GIS databases to improve risk assessments, and strategies for identifying policy barriers, accessing funds, and building staff capacity. Since more than 50% of Monroe County's land base is managed by farmers and other private landowners, the CCREOA team focused on solutions that supported landowner income and land management goals, such as harvestable biomass buffers, agroforestry, marginal lands management, and carbon farming.

The final report is available online at Wisconsin's Green Fire's website <https://wigreenfire.org/community-climate-resiliency/>, and an interactive version (in the form of a Story Map) is planned to be completed this year.



Map of Monroe County Watersheds with 12-digit ID codes (HUC-12). This map indicates restoration opportunities in the Moore Creek watershed showing reforestation opportunity, general and high priority stream buffer needs, and high priority potentially restorable wetlands.