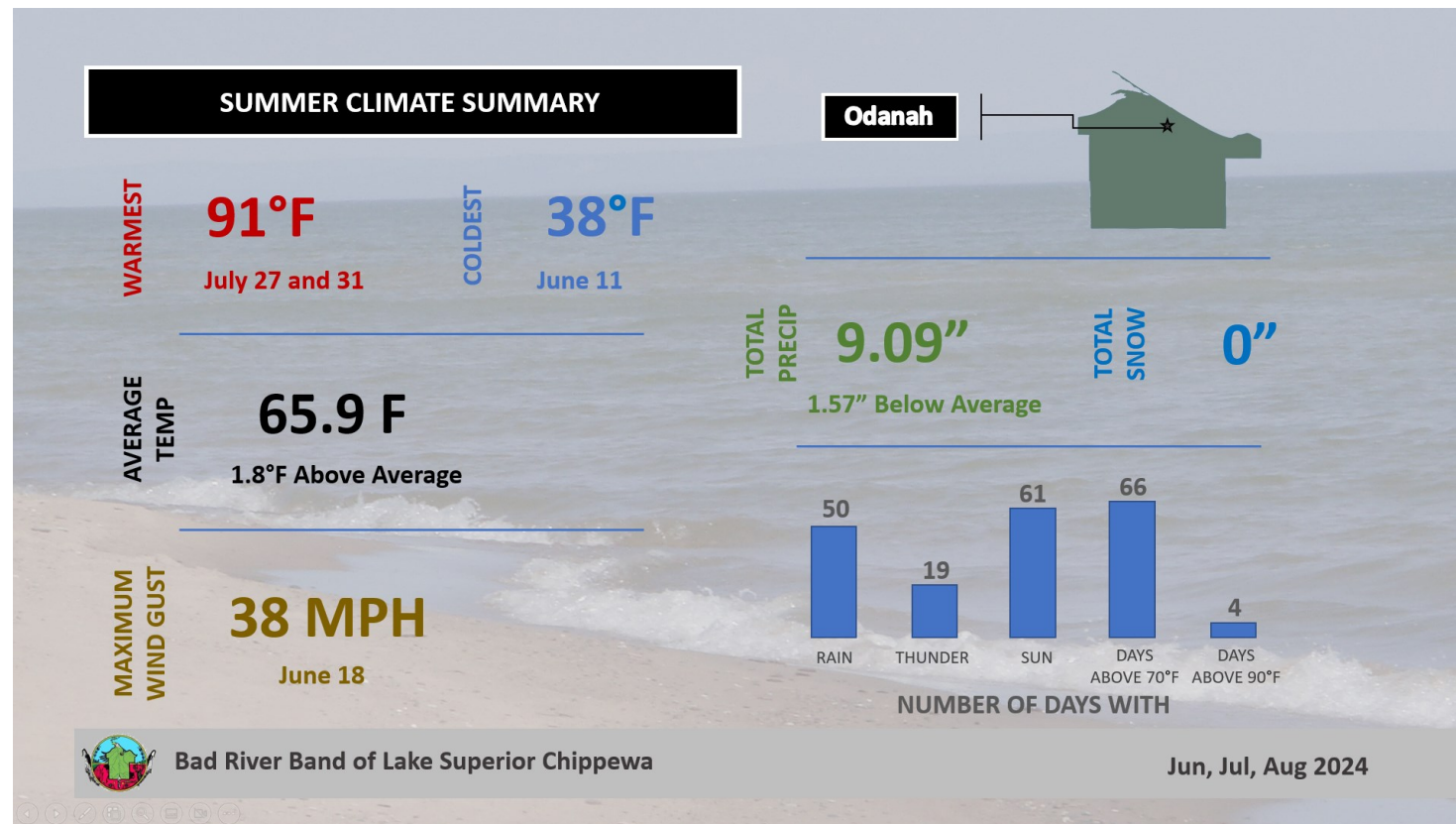


Summer Climate Summary



Mashkiiziibii Natural Resources Department

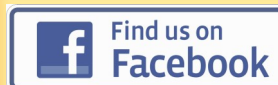
72682 Maple Street
PO Box 39
Odanah, WI, 54806

Phone: 715-682-7123
Fax: 715-682-7118
Email: NRDO outreach@badriver-nsn.gov

~MISSION STATEMENT~

The Department strives for resource management which both conserves the natural resources for the future generations and provide for the needs of the present. The departments existence reflects the importance the Bad River Tribe places on its right and ability to exercise sovereignty, self-determination and self-regulation in the area of natural resource management.

We're on the Web!
Visit www.badriver-nsn.gov



Mashkiiziibii Natural Resources

COMMON GROUND

Second Consecutive Summer Emergency Response Exercise

2024 DAGWAAGIN EDITION
(FALL)



By: Andrew Spychalla, Brownsfield Specialist - brownfields@badriver-nsn.gov

On July 23, 2024, the Bad River Band hosted a significant emergency response training exercise focused on a hypothetical oil spill from Line 5. The event was a collaborative effort involving various external organizations, including individuals from federal, state, Tribal, and industry entities. The exercise had two primary objectives. The first was to ensure the effective tracking and management of resources and personnel on the Bad River Reservation, and the second was to enhance coordination, communication, and operational readiness for all who were involved.



Photo Courtesy of MNRD

The training was divided into two distinct groups to simulate different aspects of emergency response. The first group, the

Continued on page 7...

Special points of interest:

- New Staff Introduction
- Forestry Updates
- Weather Patterns and Air Quality
- Manoomin Community Engagement
- Energy Program Update
- Non-local Beings Update
- Sign Up for NIXLE Alerts

MANOOMIN PROGRAM COMMUNITY ENGAGEMENT

Dan Powless, Manoomin Specialist - Manoomin@badriver-nsn.gov

The Manoomin Blessing feast took place on August 6. 49 people attended which included Tribal staff and members, along with GLIFWC staff.

Bad River Community Wild Rice Camp was held on August 19-20 at the newly acquired Goslin Road property. I provided an overview of the Manoomin Program activities with an emphasis on bundling techniques and practices to approximately 30 tribal members and other



local boaters, with actual bundling exercises being conducted. Members in attendance got to hear an Ojibwe perspective in the language about manoomin and stories in a historical perspective of the sloughs from long time Ricers. A Q&A

Continued on page 11...

Inside this issue:

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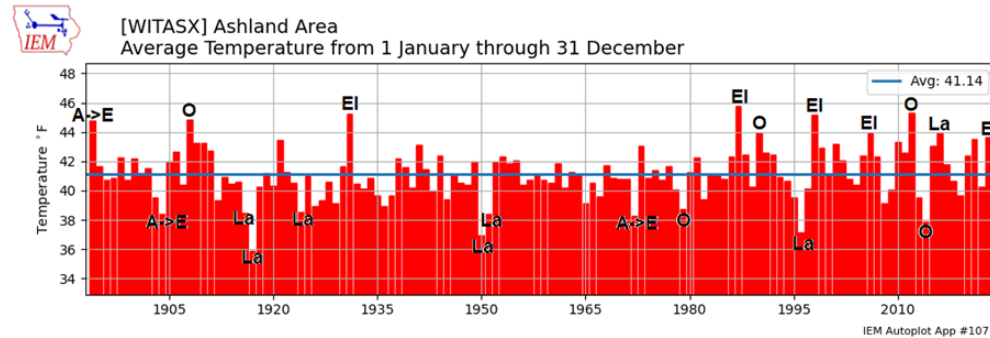
Global Weather Patterns Relate to Air Quality

Nathan Kilger, Mashkiizibii Air Quality Specialist - air1@badriver-nsn.gov

Weather and air quality are closely linked topics; each one affects the other. As one example, drought can increase fine particulate pollution locally (dust from roads and fields), as well as increase the likelihood of wildfires farther away (wildfire smoke can blanket entire regions downwind of the fires). Additionally, wildfire smoke a thousand miles away from a wildfire can stabilize the atmosphere making it harder to form thunderstorms and increases the chances of periods of dry conditions, even creating drought conditions if the smoke hangs around. That means that weather patterns are an important part of any discussion about air quality, but those weather patterns also have other impacts and implications on the environment around us. There are different types of weather patterns, some are smaller and closer to home, while other patterns are more global and can influence weather for weeks and months at a time.

El Nino and La Nina seem to make the news headlines most often, but there are other weather oscillations in different parts of the world that are constantly in motion. Those weather patterns can enhance or offset each other and work together or against each other in complicated ways. A couple of the weather patterns that can influence our weather are the Arctic Oscillation, the North Atlantic Oscillation, and the Pacific Decadal Oscillation.

Often it can be hard to see the weather pattern, but there's ways of monitoring the patterns, and the increasing capabilities of satellite technology is making the tracking of weather



| Top 10 | | Bottom 10 | |
|--------|-------|-----------|-------|
| 1987 | 45.75 | 1917 | 35.87 |
| 2012 | 45.33 | 1950 | 36.93 |
| 1931 | 45.23 | 1996 | 37.12 |
| 1998 | 45.16 | 2014 | 37.85 |
| 1908 | 44.81 | 1972 | 38.26 |
| 1894 | 44.78 | 1904 | 38.40 |
| 2016 | 43.93 | 1951 | 38.42 |
| 2006 | 43.92 | 1916 | 38.49 |
| 1990 | 43.89 | 1924 | 38.54 |
| 2023 | 43.65 | 1979 | 38.72 |

| Graph Legend | |
|--------------|--|
| EI | (El Nino) |
| La | (La Nina) |
| A->E | (La Nina transitioned to El Nino) |
| O | (Neutral, neither La Nina nor El Nino) |

er patterns easier. There is a global weather pattern that we have given the nickname “El Nino”, and the opposite pattern has been called “La Nina”. The pattern was first noticed by fishermen off the coast of Peru hundreds of years ago, so we went with their name for it. The official title is El Nino Southern Oscillation (ENSO), since it is a global pattern that spans the entire southern Pacific Ocean but can affect the entire planet. We can compare that pattern to the average annual temperature in the Ashland, WI area, since there have been temperature records kept here in the area since 1894. The graph below shows the annual average temperature of the weather stations in the Ashland area on a red bar graph. The graph then calls out the 10 highest annual temperatures and the 10 lowest. We can then look up the historical El Nino Southern Oscillation weather pattern and see if we see a pattern.

Most of the lowest annual temperatures since 1894 in the area have been the La Nina part of the El Nino Southern Oscillation pattern. With most of the highest annual temperatures since 1894 in the area have been during the El Nino

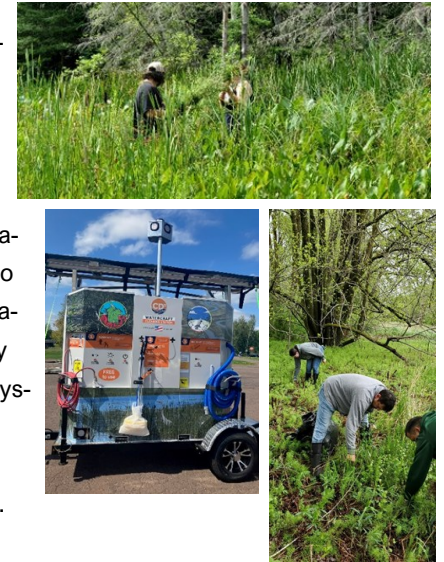
Non-Local Beings Program Updates

Bridget Thronburg, Non-Local Beings Program Manager - nonlocalbeings@badriver-nsn.gov

The Non-Local Beings crew has been hard at work this summer removing purple loosestrife, garlic mustard, and wild parsnip. Removing these species creates space for native vegetation to expand and increase in population size. This work is very difficult, and the Non-Local Beings Program is very thankful to have such a great crew this year!

A mobile boat wash station was purchased this summer and will be available for use at boat launches on the reservation soon! This standalone unit offers a suite of self-service resources, including an air blower, wet-dry vacuum, hand tools, and lights to help boaters remove, then dispose of, water, non-local beings, and debris – including leftover bait. This unit allow boaters to keep their boats clean which will

stop the spread of non-local beings. This is important because when non-local beings are accidentally introduced into a body of water, natural predators do not exist to keep populations in check, and they can quickly throw ecosystems out of balance by overwhelming and destroying native species.



Manoomin Engagement continued...

talked of issues and development of the Manoomin Stewardship Plan. We also participated in the youth harvest event in which 10 youth participated. WDIO TV Staff were present. The Wild Rice committee had site visits on Aug 1,5, 12,16, and 21 which included the following Openers:

- **August 14 open to the “Y” of Big Round and Bear Trap Creek**
- **August 18 open to the “Y” before Wood Creek.**
- **August 24 open Wood Creek**

AMI Consulting Engineers out of Superior, WI was hired to do the Kakagon Headwaters Restoration Feasibility study. We are gathering recent plant surveys and other relevant data for them to evaluate and had for an initial meeting with MNRD. Future Community engagement opportunities are being planned.

Initial bundling and re-seeding took place in 2023. Notably a small 1/4 acre section of Manoomin was re-

established across from the hatchery and we are following up with an additional site where the native invasives plants were removed just up stream. The riverine stretch between the bridges was also sporadically reseeded for year 2 as well and these will be monitored in conjunction with the Wild Sage node monitoring device. STRONG Manoomin Collective Project – Jordan Gurnoe informed us that they have completed their field monitoring for 2024.

Manoomin Program



Forestry Updates

Gena Abramson, Forestry Specialist - Forester@badriver-nsn.gov

Boozhoo Mashkiiziibiing niiji!

While the Birch Hill Red Pine Chipping Project is winding down, several other forestry projects are gearing up! Bad River's Forestry Program is always working to create a better forest for you as well as the 7th generation.

We've recently been informed that we will be receiving a grant from the Wisconsin Department of Natural Resources which will help us remove unwanted and potentially hazardous trees from community yards. In their place, we will be planting food or medicine trees, such as plum, elderberry, cedar (*giizhik*), or others.

That same grant will help us replace potential hazard trees at the Powwow Grounds. Unfortunately, there are some dead or dying aspen as well as many ash that are showing signs of Emerald Ash Borer (EAB) infestation.

EAB comes through areas and kills all ash trees. Some die sooner than others, but it generally takes 2-5 years from beetle contact until mortality occurs. Ashland County was one of the last of Wisconsin's 72 counties all of which now have confirmed EAB presence.

Our grant calls for the utilization of those ash through firewood processing which will allow us to pay a tribal member to do that work. In their place at the Pow Wow G rounds, we are planning to plant silver maple (*Acer saccharinum*) (*Zhooniyaa aaninaatig*). Silver maple are fast growing and will provide shade for a couple of centuries if we protect them from damage. They can also be tapped for sap in late winter.

Additionally, we will be starting to "release" young white pine trees after the Birch Hill project is completed. This release work involves cutting away the trees (aspen, mainly) surrounding these young white pine. The result is more sunlight, soil nutrients, soil moisture, and air flow around the seedling or sapling.



Once of our goals in the Integrated Resource Management Plan (IRMP, 2001) is to increase the pine component across the Bad River landscape. This work nurtures pine and reduces the influence of our overpopulated aspen.

Please let us know if you ever have any questions or concerns about your yard trees or the Bad River Forest. We appreciate getting to know you better!

Forester@badriver-nsn.gov , Foresttech@badriver-nsn.gov , 715-685-8929, or Chief Blackbird Center ext.1563.

Happiest of Holidays to all Bad River Community Members!!

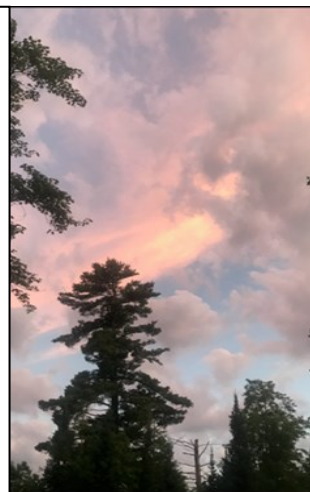


To the left:

Healthy young white pine seedling

To the right:

Mature white pine towering over the forest connecting **Aki miinawaa Giizhig** (earth and sky)



Silver Maple

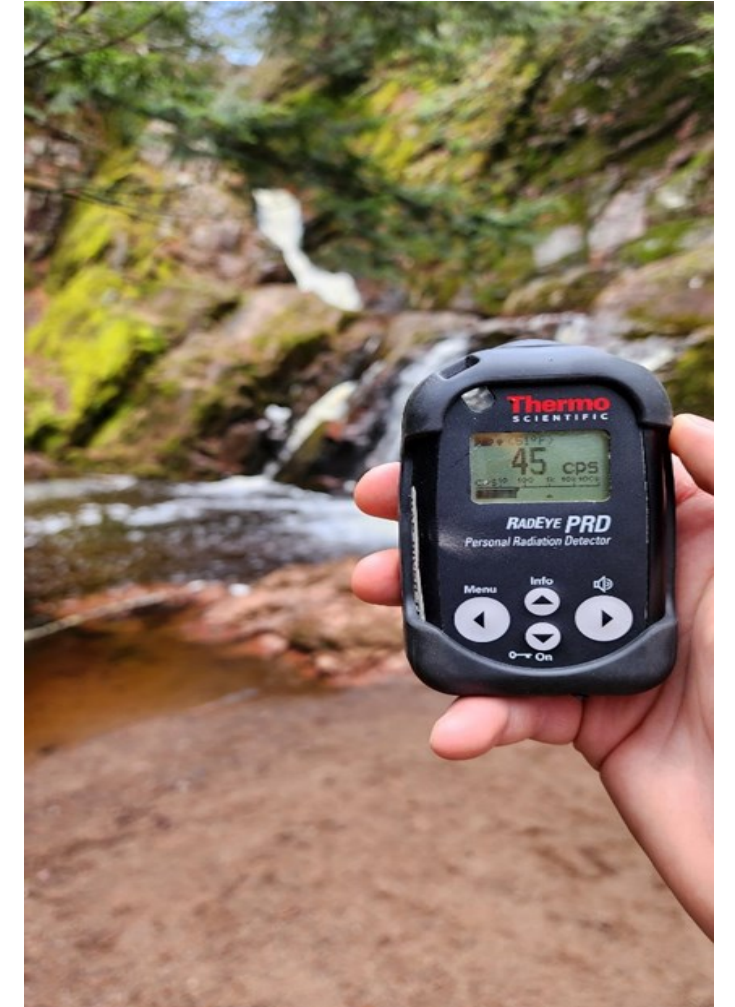
N.O.R.M

By Zakk Zander, Air Quality Technician - airqualitytech@badriver-nsn.gov

We are all familiar with social norms, treat others how you would want to be treated, be respectful to your elders and so on. Today though, I'm talking about a different norm. Much like social norms, they are around us and have very real impacts on our everyday lives. This norm is an acronym for Natural-Occurring Radioactive Materials, which the EPA defines as "found naturally in the Earth (primordial radionuclides) and in the atmosphere (cosmogenic radionuclides)". Primordial radionuclides are the ones most folks would be familiar with are uranium, radium, thorium and potassium. The name primordial radionuclides just mean they were around before the Earth was formed. All we'll say about cosmogenic radionuclides is that they form when a cosmic ray hits a particle in the upper atmosphere.

Bringing this back to the ground, the Lake Superior basin sits atop a failed rift valley. Most of the rocks that make up the mid content rift (MCR) are volcanic with some sandstone underlying the MCR. Some of those rocks, the granites and the Jacobsville sandstone, carry naturally higher levels of uranium and radium. At this point if you are still reading this you'll probably be thinking, "great thanks for the jargon but, why does this matter to me?" Great question, well three of the NORMs I briefly talked about turning into radon. Uranium and thorium both eventually* turn into radium which then shortly** turns into radon. Radon is not one of the primordial radionuclides due to its short half-life of just under 4 days. Radon, as folks may be aware, is a radioactive gas that moves up from the bedrock through the soil and into your home. NORMs and radon can also pose an issue for groundwater. Water moving through and around the rocks containing NORMs can easily pick them up and transport them to the well. This is the main way that radon ends up in your drinking water. Some of you may now be concerned that you have contaminated well water and there is the chance, but, you do not know unless you test it. There are state and federal regulations that limit the amount of NORMs in community wells. Wells that are put in through Bad Rivers POWTS program are also tested for these contaminants.

If you have concerns about your private well, please reach out to me and I can try and answer your questions. I can conduct radon in water testing, which could be used as an indicator for NORM contamination. The Wisconsin state lab of hygiene can also be



NORMs at Morgan falls contribute to higher than average outdoor radon concentrations. It is typical to have anywhere from 7-30 counts per minute (CPM)

*Eventually in this case means tens thousands of years

**Shortly means only a couple thousand years

contacted for NORM testing if folks would prefer to do it themselves. They can be reached at 800-442-4618 Monday through Friday 7:45-4:30. If high levels are found, there are solutions. The Bad River Tribal Indoor Radon Program would not be able to cover costs or install radon mitigation (reduction) systems but would be able to assist in locating contractors and possibly funds towards installing them. If you have any questions, please contact Zakk Zander 715-682-7123x1553 or at airquailitytech@badriver-nsn.gov



THE OFFICE OF CLEAN ENERGY DEMONSTRATIONS

Energy Improvements in Rural or Remote Areas – Mashkiiziibii Minigrid

The Energy Improvements in Rural or Remote Areas (ERA) Program, managed by the U.S. Department of Energy's (DOE) Office of Clean Energy Demonstrations (OCED), aims to fund community-driven energy projects that demonstrate clean energy systems, deliver measurable and sustained benefits to people who live in rural or remote areas, and build clean energy knowledge, capacity, and self-reliance throughout rural America. As part of the ERA Program's cooperative agreement funding opportunity, OCED sought applications with a range of different technologies aimed at improving the resilience, reliability, and affordability of clean energy systems in communities across the country with 10,000 or fewer people. OCED selected 17 projects across 20 states and 30 tribal nations for a total of up to \$366 million in federal funding. Following negotiations, in August 2024, OCED awarded the Mashkiiziibii Minigrid project more than \$600,000 for Phase 1 activities on the Bad River Reservation, WI.



Awardee Fact Sheet Energy Improvements in Rural or Remote Areas: Mashkiiziibii Minigrid

Project at a Glance

- » **Total OCED Cost Share:** Up to \$14.1 million
- » **Phase 1 Total Project Amount:** \$794,862*
- » **Phase 1 OCED Award Amount:** \$635,881**
- » **Phase 1 Scope of Work:** Planning, development, and design activities
- » **Phase 1 Timeline:** 7-8 months
- » **Recipient:** Bad River Band of Lake Superior Tribe of Chippewa Indians is a federally recognized tribe
- » **Project Locations:** Bad River Reservation, WI
- » **Start Date:** August 2024

*Represents the total project cost for Phase 1.

**Represents OCED's cost share for Phase 1. Additional funding for this project is subject to future award negotiations at the end of each project phase.

About This Project

The Bad River Band of Lake Superior Tribe of Chippewa Indians—also known as Mashkiiziibii—plans to build a 5 MW solar photovoltaic (solar PV) array and an 8 MWh battery energy storage system to connect with existing diesel and natural gas generation. This combination would form a hybrid minigrid that would power the reservation's Odanah, Aspen Acres, Franks Field, and Birch Hill communities.

Located along the shores of Lake Superior, residents of the Bad River Reservation experience harsh winter weather, extreme storms, and flooding known to cause power outages. The implementation of a hybrid minigrid would increase the Tribe's energy resilience and reliability, while moving them closer to energy sovereignty.

This project aims to help the Mashkiiziibii reach its goal of carbon free emissions with 100% renewable electricity generation by 2027 and provide a model for replication in other tribes and rural communities.

In August 2024, OCED awarded the Mashkiiziibii Minigrid project with more than \$600,000 to conduct Phase 1, which is expected to last 7 to 8 months. During this phase, the Bad River Band of Lake Superior Tribe of Chippewa Indians will conduct preliminary design, planning and development activities including forming a joint tribal-utility working group, providing input into OCED's National Environmental Policy Act review, and initiating community and labor engagement.

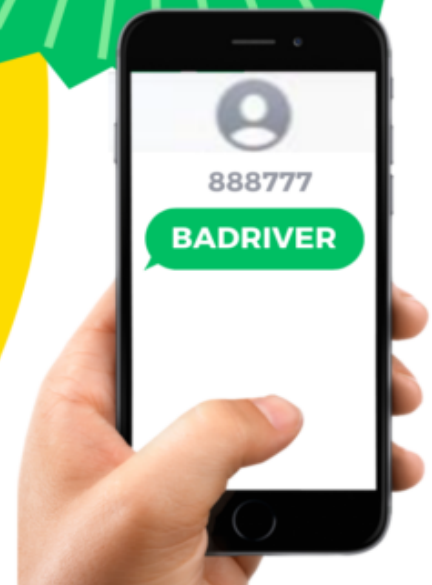
Sign up for Nixle Alerts



TEXT 'BADRIVER' TO '888777'

There has been a change to the Nixle alert system. You will only need **ONE** key word to sign up for each of the following

- **Tribal Events & Operations**
Gives you warnings of emergencies... (ex. forest fires, floods, amber alerts)
- **Alerts & Advisories**
Gives you updates on community happenings...(ex. poll location times, unexpected department closures)
- **Pow Wow**
Gives you updates on Pow-Wow and other community feasts and celebrations.
- **Public Works**
Gives you updates on road closings and hydrant flushing.



BAD RIVER BAND OF LAKE SUPERIOR CHIPPEWA INDIANS

Global Weather Patterns continued...

part of the pattern. A couple of the annual extremes have been neither El Nino or La Nina, and a couple have been during a transition from La Nina to El Nino.

So, some of the variability we see in the local weather is driven by global patterns. We do know that our odds of a cool and wet winter increase during La Nina winters. We also know that we're more likely here to have a warmer and drier summer during an El Nino. Different parts of the globe also see impacts, some are severe: drought and crop failures are common during an El Nino in parts of South America, Australia, and southern Africa, while La Nina can help create a very active hurricane season in the Atlantic Ocean and droughts increase in Chile, the

Deep South of the USA, eastern Africa. An interesting part of this graph is that there are more years above the blue average line in the last 30 years. This is where more research can help answer questions like: Are these warmer years the result of El Nino? Are El Nino events happening more often, and then the El Nino events are producing warmer years? Is something pushing El Nino to happen more often (are ocean surface temperatures changing and that is allowing El Nino to persist longer and more often?) or are El Nino events producing other effects (perhaps drier conditions are allowing more/bigger wildfires, which produce more smoke, which create a feedback loop of promoting more drought?) We're expecting a La Nina pattern to

return in the fall of 2024 and remain in place throughout the Northern Hemisphere winter. Typically, we see a cooler and wetter weather pattern with La Nina in place. The winter of 2021/2022 was a La Nina winter, and we saw about 90 inches of snow that winter. The winter of 2022/2023 was another La Nina winter, and we saw 146 inches of snow that winter. While the winter of 2023/2024 was an El Nino winter and we only had 32 inches of snow, typical of an El Nino winter. But if the future holds more global El Nino events, these winters that lack snowfall may become more and more common, leading to impacts on river and lake levels, wildfire risk, and stress on forests, crops, and wildlife.



Climate Change Specialist Introduction

Bella Wabindato, Climate Change Specialist - climate@badriver-nsn.gov

Boozhoo! My name is Bella Wabindato and I'm the new Climate Change Specialist. I'm from Bad River but recently graduated from the University of Redlands in the LA area with a biology degree. This is my first job with a college degree, but I'm looking forward to being of service to my community. In my spare time I enjoy reading, watching musicals, and learning French. I love to travel and my most recent expedition brought me to Scotland, France, and Italy.

I'm excited to bring some fresh perspective, with the Mashkiiziibii Natural Resources de-

partment, to the looming threat of climate change in Bad River. If you have any questions, concerns, or ideas please feel free to reach out to me at climate@badriver-nsn.gov



Mashkiiziibii Minigrid Project Fact Sheet

Project Site

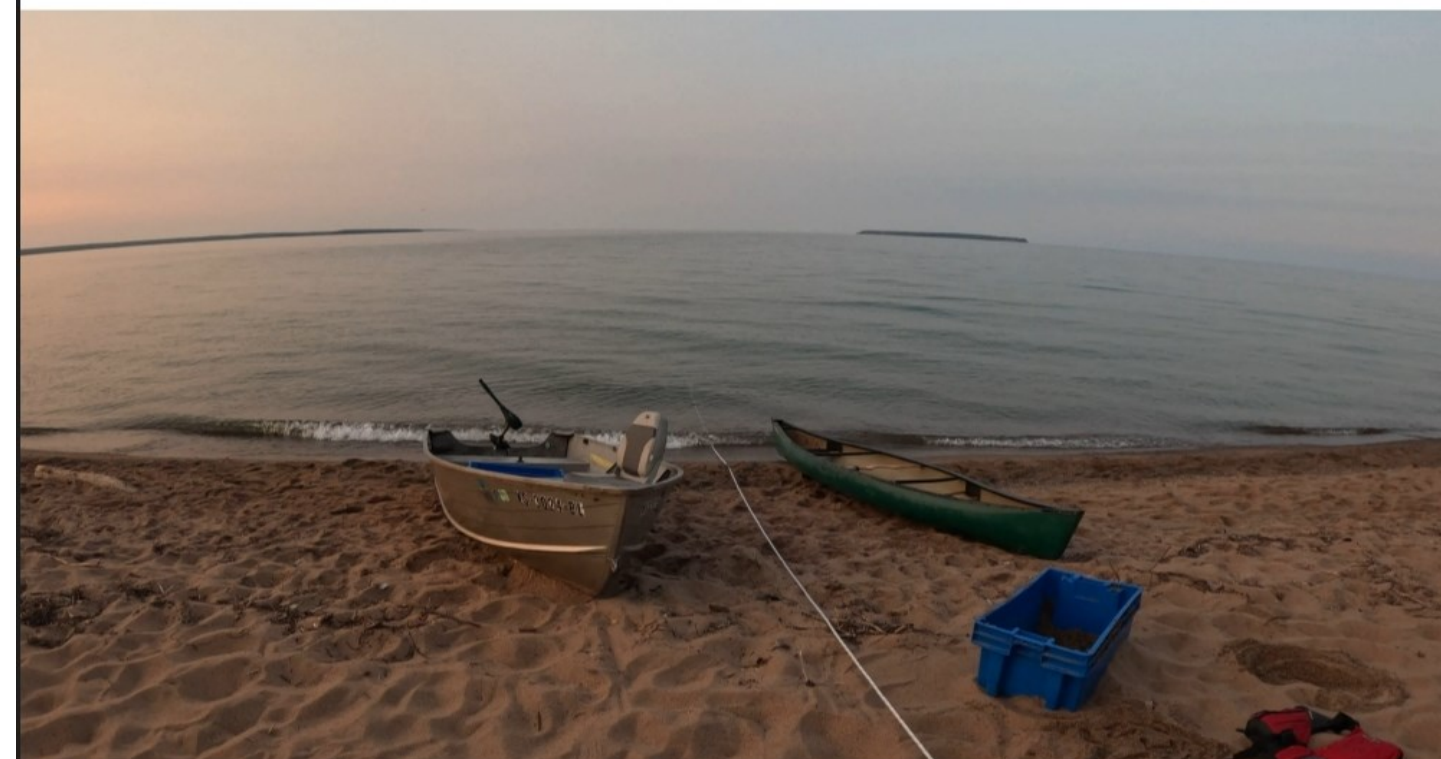
This project would be located on the Bad River Reservation in Ashland and Iron counties in northwestern Wisconsin along the shores of Lake Superior, where the majority of the Reservation's 1,545 residents are tribal members.

Community Benefits Commitments

Community benefits commitments are a key component of the Mashkiiziibii Minigrid project. These commitments are informed and developed—in consultation with local communities—to mitigate any potential negative impacts of this project and maximize local community benefits. The Mashkiiziibii Minigrid project plans to implement these commitments through:

- Organizing **Community Discovery Workshops, public meetings, presentations, and surveys** to understand the community's priorities, support two-way learning, and inform project decisions.
- **Partnering with the University of Wisconsin's Clean Energy Community Initiative** to distribute a clean energy focused curriculum and skills training to higher and professional education institutions serving tribes and communities in northern Wisconsin.
- **Creating quality jobs** that offer competitive salary packages and hourly wages, comprehensive benefits, and support for professional development, and offering opportunities for current employees to reskill or upskill for project-related opportunities.

More details on the Mashkiiziibii Minigrid project's community benefits commitments can be found in the Community Benefits Commitments Fact Sheet.



The Lake Superior shoreline from Mashkiiziibii



Mashkiiziibii Minigrid Project Fact Sheet

Energy Improvements in Rural or Remote Areas Program Goals

Nearly one in six Americans live in rural or remote communities and face a unique set of energy challenges due to their smaller populations and isolation from larger electrical systems—including higher electric bills, unreliable energy supplies, and/or no access to electricity at all. The ERA Program aims to address these challenges by funding community-driven energy projects that demonstrate clean energy systems, deliver measurable and sustained benefits to people who live in rural or remote areas, and build clean energy knowledge, capacity, and self-reliance throughout rural America. This program will leverage DOE's expertise in resilient energy solutions while recognizing the unique environmental, cultural, and economic landscapes of rural and remote communities. The selected projects cover a range of clean energy technologies—from solar, battery storage systems and microgrids to hydropower, heat pumps, biomass, and electric vehicle charging infrastructure—to ensure new economic opportunities in every pocket of the nation.



Energy Coordinator & Climate Change Specialist Jillian Wilde at Wastewater Treatment Plant microgrid

Contact

Jillian Wilde, Bad River Energy Coordinator

Energycoordinator@badriver-nsn.gov

DOE Resources

Program Email: EngageERA@hq.doe.gov

Site-Specific Email: Midwest_ERA2970@hq.doe.gov OCED

Media Email: OCEDNewsroom@hq.doe.gov

Website: energy.gov/oced/era

Office of Clean Energy Demonstrations: energy.gov/oced



The U.S. Department of Energy established OCED to help scale the emerging technologies needed to tackle our most pressing climate challenges and achieve net-zero emissions by 2050. OCED's mission is to deliver clean energy demonstration projects at scale in partnership with the private sector to accelerate deployment, market adoption, and the equitable transition to a decarbonized energy system.

Second Consecutive Summer Emergency Response Exercise continued...



Photo Courtesy of US EPA

Unified Command (UC) team, convened at the Casino's conference room. This group, composed of key decision-makers, engaged in discussions on how to handle the hypothetical spill. Their focus was on developing effective strategies and making high-level decisions regarding the response.

Simultaneously, the second group, the response team, was stationed in the field near the Bad River Powwow grounds. This hands-on group, which included Enbridge staff and contractors, undertook the task of deploying boom across the river. Their goal was to simulate the containment of oil in a real spill scenario, testing the practical application of response tactics.

The exercise revealed several key insights. The field conditions and the timing of events facilitated smooth check-in and check-out processes for both resources and personnel. Effective communication between the UC team and the field responders was noted, contributing to a well-coordinated effort. The deployment of boom was deemed acceptable under the day's conditions, though it was recognized that real-life scenarios would present more complex challenges, necessitating real-time adjustments to equipment and strategies.

A crucial element of the exercise was the control point at the Powwow grounds, where boom deployment was considered critically important. This control point is positioned as a strategic location just before Lake Superior, underscoring the need for timely notifications and effective management of spill containment.

Feedback from the exercise participants highlighted several areas for improvement. While communication between federal, state, Tribal, and industry was generally positive, some federal staff noted the need for heightened sensitivity to control points

and response strategies. Incorporating community input into response strategies, having access to comprehensive response plans, ensuring staff are trained in situations where hazardous substances are present, and understanding available resources were also identified as crucial takeaways.

External participants also emphasized the importance of communication, planning, and realistic training exercises. The Environmental Protection Agency (EPA) staff stressed the need for early assignment of leadership roles and effective information sharing, particularly concerning cultural and sensitive locations. Overall, the exercise demonstrated the Band's commitment to enhancing preparedness for oil spill incidents and protecting vital resources. It served as a valuable opportunity to refine strategies, improve coordination, and strengthen the collective ability to respond effectively to potential emergencies.