

COMMON GROUND

2017-18 WINTER EDITION

2017: A Year in Review

By: Naomi Tillison, Natural Resource Director

2017 was a year of transition for the Bad River Natural Resources Department (NRD). It's the first year without Erv Soulier leading our Department and in his legacy a woman is now in charge of NRD. Our long-time Forester, Doug Tutor, retired from the Department in August, and we managed to keep Bob Wilmer out of retirement to help us with our Conservation Enforcement Program.

We had four Department employees change positions over the last year, and we welcomed eight new people in full-time positions onto our team. We enjoyed bringing back our dedicated seasonal staff and hiring new seasonal help to assist our Department in our many accomplishments. Our current staff directory can be viewed at: <http://badriver.nsn.gov/tribal-operations/natural-resources/nr-programs-a-personnel>



Despite all of the personnel changes, the NRD team worked hard and continued to do amazing work! Our highlights from 2017 include (in no particular order):

- Purchased 511 pounds of green rice and re-seeding around 11 acres in the Kakagon Sloughs. This is the most rice we have purchased since 2009 when we purchased 617 pounds.



- Continued to build our capacity on issues associated with industrial agricultural, or Concentrated Animal Feeding Operations (CAFOs). We even sent staff to the National Manure expo to learn about the most current

technology and practices in manure management.

- Implemented a NRD Summer Youth Program for thirteen tribal youth focused on plants, including the identification, cultural significance, and management of them. We



were thrilled to have multiple tribal elders come

teach our group about the proper harvest of plants!

- Launched our new research boat Minwaanimad (Good Breeze) on Lake Superior to



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JOIN US @ ELDERLY DAY
in MAY to Learn about our **WETLAND FUNCTIONAL ASSESSMENTS**
Watch for Event Flyers

Special points of interest:

- Natural Resources Summer Youth Programs
- Wildlife 2017 Annual Report
- Forestry Technician Introduction
- Conference Room C Modifications
- POWTS Informational Guide
- New Conference Room Photos

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MONITORING AIR POLLUTION AT BAD RIVER

Nathan Kilger, Air Quality Specialist

Since the ambient air monitoring site was first established in the field behind the old LCO school 14 years ago, the Air Office in the Bad River Natural Resource Department has monitored fine-particulate pollution and ground-level ozone (what some refer to as “bad” ozone, not the “good” kind that is up in the ozone layer). Of the six pollutants that are of primary

concern across the country, ozone and fine-particulate pollution are the two that we have chosen to monitor here.

Ozone is created from several ingredients (nitrogen oxides, volatile



Bad River Natural Resource Department staff giving a tour of the air monitoring site to visitors from the US EPA Indian Environmental Office in June 2012.

...Continued on page 2...

Monitoring Air continued...

Nathan Kilger, Air Quality Specialist

organic compounds, sunlight, etc.) and when compared to Milwaukee, Chicago, and Minneapolis, our ozone levels here at Bad River are relatively low. However, compared to the National Ambient Air Quality Standards (Standard) that are set across the country to protect human and environmental health, our ozone pollution is only a little bit below that cut-off level. Any large increases in ozone here may start to impact human and environmental health. According to the EPA, high ozone levels lead to shortness of breath or pain when breathing, inflamed or damaged airways, increased frequency of asthma attacks, makes lung diseases worse, and can lead to



USGS mercury isotope samplers #3 and #4 at the Bad River Air Site, along with inlets for measuring atmospheric elemental mercury and ground-level ozone. This small solar panel runs the

chronic obstructive pulmonary disease (COPD). We monitor ozone to see what our ozone level is and what the trend of ozone is over time, and we can also combine these measurements with our weather measurements to see how the "bad" ozone moves throughout the area.

Fine particulates are created by burning things (coal/ biomass power plants or wildfires as examples), or mechanical activities (mining and processing, dirt roads, agricultural fields). They can be created nearby or can travel on the wind. Our levels of fine-particulate pollution here at Bad River are half the Stand-

ard, but we do see that some days have higher pollution than others. According to the EPA, high particulate levels lead to aggravated asthma, decreased lung function, irritation of the airways including difficulty breathing or coughing, nonfatal heart attacks, and premature death in people with heart or lung disease. Certain weather conditions can influence fine-particulate pollution levels too.

We need at least three years of continuous, uninterrupted data to put into the mathematical equations for Bad River's air monitoring to have enough meaning for us to compare our air quality to the Standard. If Bad River lost funding for monitoring air pollution, or had to move the air monitoring site, a three-year gap in the data would occur and we would need another three years to get back to the current level of air quality data.

There are other air monitoring sites around Wisconsin, but Bad River is the only one in the Wisconsin portion of the Lake Superior Basin.

The nearest monitoring sites are in Duluth, Taylor County, or just north of Minocqua. Air monitoring sites are a critical part of the enforcement process under the Clean Air Act in areas of high pollution. When air pollutants rise above the Standard, federal rules kick in that require

states and permitted facilities to bring that pollution level down below the Standard. Several counties in Wisconsin have pollution levels that are above the Standard. Part of

Kenosha County and all of Sheboygan County are above the 2008 Standard for ozone, and part of Oneida County is above the 2010 Standard for sulfur dioxide, another health hazard pollutant.

Not all tribes can afford an air monitoring station or do not have an air quality program in their Natural Resource Department. Happily, Bad River has been able to secure grants to make this possible. We are proud that we have been able to monitor for the past 14 years. Bad River is grateful to our partners at the US EPA for all of our funding for air quality monitoring.

The rest of the air monitors in each Great Lakes states are operated by each state's Department of Natural Resources or equivalent agency. But even these air monitoring sites need funding to continue. A committee of the Wisconsin Legislature recently voted to eliminate funding for the air monitor in Sheboygan County (the county listed above as being higher than the Standard for ozone), which would theoretically eliminate the air monitoring in that county (<https://docs.legis.wisconsin.gov/2017/proposals/ab588>). The proposal has not been signed into law yet and would then have to undergo a federal review process. The Air Office is watching to see if that proposal advances.

In the meantime, the Air Office will continue to monitor air pollutants as a tool to protect human and environmental health. More information on the Air Standards can be found on our website (shortened weblink): <http://x.co/NAAQS>



Alissa Dickerson next to the fine particulate sampler in November 2002 at the Bad River Air Site.



Bad River receives Treatment in the Same Manner as a State (TAS) for air quality in February 2005. Acting EPA Regional Administrator Bharat Mathur presented a plaque to Bad River Chairman Donald Moore, Sr.

A Homeowner's Guide to Septic Systems

Submitted by: Eugene Bigboy, POWTS Inspector

~POWTS Stands for Private On-site Wastewater Treatment System~

Why should I maintain my septic system?

A key reason to maintain your septic system is to save money! Failing septic systems are expensive to repair or replace, and poor maintenance is often the culprit. Having your septic system inspected (at least every 3 years) is a bargain when you consider the cost of replacing the entire system. Your system will need pumping every 3 to 5 years, depending on how many people live in the house and the size of the system. An unusable septic system or one in disrepair will lower your property's value and could pose a legal liability.

Other good reasons for safe treatment of sewage include preventing the spread of infection and disease and protecting water resources. Typical pollutants in household wastewater are nitrogen, phosphorus, and disease-causing bacteria and viruses. Nitrogen and phosphorus are aquatic plant nutrients that can cause unsightly algae blooms. Excessive nitrate-nitrogen in drinking water can cause pregnancy complications, as well as methemoglobinemia (also known as blue baby syndrome) in infancy. Pathogens can cause communicable diseases through direct or indirect body contact or ingestion of contaminated water or shellfish. If a septic system is working properly, it will effectively remove most of these pollutants.

How to treat your drainfield

- Plant only grass over and near your septic system. Roots from nearby trees or shrubs might clog and damage the drainfield.
- Don't drive or park vehicles on any part of your septic system. Doing so can compact the soil in your drainfield or damage the pipes, tank, or other septic system components.
- Keep roof drains, basement sump pump drains, and other rainwater or surface water drainage systems away from the drainfield. Flooding the drainfield with excessive water slows down or stops treatment processes and can cause plumbing fixtures to back up.

Your septic system is your responsibility!

Did you know that as a homeowner you're responsible for maintaining your septic system? Did you know that maintaining your septic system protects your investment in your home? Did you know that you should periodically inspect your system and pump out your septic tank?



If properly designed, constructed, and maintained, your septic system can provide long-term, effective treatment of household wastewater. If your septic system isn't maintained, you might need to replace it, costing you thousands of dollars. A malfunctioning system can contaminate groundwater that might be a source of drinking water. And if you sell your home, your septic system must be in good working order.



Protect Your Septic System

- 1 Inspect your system (every 3 years) and pump your tank as necessary (generally every 3 to 5 years).
- 2 Use water efficiently.
- 3 Don't dispose of household hazardous wastes in sinks or toilets.
- 4 Care for your drainfield. Avoid driving or parking vehicles on your drainfield. Plant only grass over and near your drainfield to avoid damage from roots.

How do I maintain my septic system?

Pump frequently

You should have your septic system inspected at least every 3 years by a professional and your tank pumped as necessary (generally every 3 to 5 years).

Use water efficiently

Average indoor water use in the typical single-family home is almost 70 gallons per person per day. Dripping faucets can waste about 2,000 gallons of water each year. Leaky toilets can waste as much as 200 gallons each day. The more water a household conserves, the less water enters the septic system.

Flush responsibly

Dental floss, feminine hygiene products, condoms, diapers, cotton swabs, cigarette butts, coffee grounds, cat litter, paper towels, and other kitchen and bathroom items can clog and potentially damage septic system components. Flushing household chemicals, gasoline, oil, pesticides, antifreeze, and paint can stress or destroy the biological treatment taking place in the system or might contaminate surface waters and groundwater.



Use Water Efficiently!

- Fill the bathtub with only as much water as you need
- Turn off faucets while shaving or brushing your teeth
- Run the dishwasher and clothes washer only when they're full
- Use toilets to flush sanitary waste only (not kitty litter, diapers, or other trash)
- Make sure all faucets are completely turned off when not in use
- Maintain your plumbing to eliminate leaks
- Install aerators in the faucets in your kitchen and bathroom
- Replace old dishwashers, toilets, and clothes washers with new, high-efficiency models

For more information on water conservation, please visit www.epa.gov/owm/water-efficiency

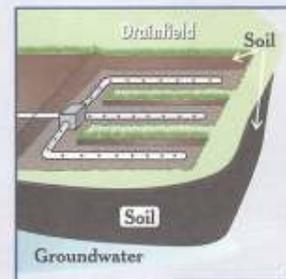
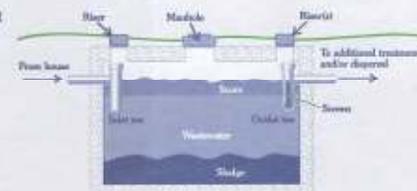
How does it work?

A typical septic system has four main components: a pipe from the home, a septic tank, a drainfield, and the soil. Microbes in the soil digest or remove most contaminants from wastewater before it eventually reaches groundwater.

The septic tank is a buried, watertight container typically made of concrete, fiberglass, or polyethylene. It holds the wastewater long enough to allow solids to settle out (forming sludge) and oil and grease to float to the surface (as scum). It also allows partial decomposition of the solid materials. Compartments and a T-shaped outlet in the septic tank prevent the sludge and scum from leaving the tank and traveling into the drainfield area. Screens are also recommended to keep solids from entering the drainfield.

The wastewater exits the septic tank and is discharged into the drainfield for further treatment by the soil.

Microorganisms in the soil provide final treatment by removing harmful bacteria, viruses, and nutrients.



NRD 2017 Year Review continued....

complete lake trout assessments.

- Initiated a pilot solar project near our long-term air quality monitoring and weather station. We have produced over 1500 kWh of electricity to date. See page 1 for more details.
- Held a wolf howling event for approximately 50 youth and community members.
- Received a national award for GIS Program of the Year!
- Engaged in the Lake Superior Partnership to implement the Lake Superior Lakewide Management Plan.
- Created a story map about the Enbridge Line 5 pipeline crossing the Chequamegon-Nicolet National Forest to increase awareness of traditional knowledge and unique resources in this area. Our story map can be viewed at: <http://www.arcgis.com/apps/MapJournal/index.html?appid=6de2694e7f9a4713b3f83f9022006589>
- Collaborated with University of Michigan to implement a project assessing the potential non-economic loss and damage from climate change. This project involved numerous interviews with tribal members willing to share their knowledge.
- Evaluated over 100 parcels and initiated the process to transfer these tribal fee parcels into trust.
- Completed over 650 reviews under Section 106 of the National Historic Preservation Act.
- Raised walleye and perch at our Hatchery, and released 2.7 million walleye fry, 213,320 walleye fingerlings, and 150,000 yellow perch into the Kakagon and Bad Rivers. See page 10 for more details.
- Continued our FEMA-funded project to develop a Pre-Disaster Mitigation Plan in collaboration with other Departments, community members, and organizations. See the article on page 6 for more details about this project.
- Evaluated the resources and the conditions of the septic systems and realty on the Madeline Island portion of the Reservation.
- Monitored the piping plover population on Long Island, in collaboration with the National Park Service and other partners. This year there were four nesting pairs of piping plovers producing 9 chicks.
- Continued to grow our Invasive Species Program, including controlling wild parsnip around the community and surveying for Phragmites in the Kakagon/Bad River Sloughs complex. See page 8 for more details.



- Collaborated with Tribal Roads Department and Town of Sanborn to improve the design of culverts to promote fish passage and improve aquatic health.
- Worked as a team to review numerous projects proposed by utility and pipeline companies to ensure projects are implemented in a manner that avoid and minimizes impacts to tribal resources and protects community health.
- Engaged youth and teachers in our Indigenous Arts and Sciences Program (IAS), a program we implement in collaboration with the Education Department. As part of our IAS Program, Tribal Council members met with the Ashland School Board Members.
- Collaborated with other tribal programs to hold seasonal camps to engage youth and community members in traditional activities.
 - Hosted a Spill Response Workshop taught by U.S. EPA, U.S. Coast Guard, and Wisconsin DNR to build our capacity to respond if there was a release of hazardous materials.
 - Held our biennial Environmental Open House and our annual Lake Superior Day celebration with 165 and 135 participants, respectively. We also had over 100 participants at our Earth Day celebration.
- Implemented a FireWise Project in collaboration with Wisconsin DNR to reduce fuel (dead branches, shrubs, etc.) around homes. Wood chips from this project were provided to the Food Sovereignty Program for mulch and compost.
- Collected 154 water samples from Lake Superior beaches within the Reservation. Only three advisories were issued in the 2017 beach season due to elevated pathogen levels.
- Revised the Tribal Trapping Code and Non-Member Indian Harvest Code, incorporating the community input we received.
- **Took first place at the Employee Appreciation Day picnic!**



We worked on many other projects (and with many partners) beyond these to protect, enhance, and restore the natural resources so current and future generations can continue to depend on these resources to support a healthy community. Miigwech to all the hard working NRD staff and for all the support we received from tribal leadership, community members, our partners, and our funders!

Large Format Printing Capacity Expands

By Suzi Smith, GIS & Mapping Specialist

Perhaps one of BRNRD's better kept secrets; GIS & Mapping Services maintains a 42" wide color plotter which now features more paper types and widths for large format printing needs. A Native American, female-owned business - True North Resources - out of Milwaukee now supplies the plotter that is housed in the BRNRD office. Available paper types are: coated drafting paper, glossy photo paper, and *new* polypropylene banner material. The banner material is more flexible and durable than the paper, but there are currently no waterproof inks available, so all posters are recommended for indoor use or temporary/fair weather outdoor use only. Maximum widths of banners and posters are 36" for all paper types and 42" for all paper types and banner material. Of course, there is a printing fee

schedule, but prices are reasonable (e.g. one 24" x 36" poster on glossy photo paper costs around \$20) and are only intended to cover cost of supplies, with reduced rates of multiple copies of the same poster. If you have large format printing needs, or want to learn more, stop by BRNRD offices during regular business hours and either Suzi or Berthea will be happy to help.



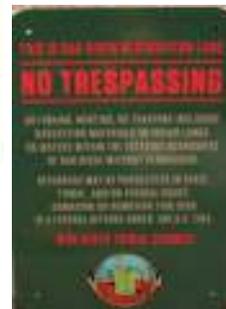
Example plotter – ours is not this fancy, but it gets the job done, so let's just call it "retro"

Natural Resource Department Outreach Updates

Berthea Olby, NRD Outreach Coordinator

Boozhoo!
I'm the Outreach Coordinator for the Natural Resource Department in Bad River and I wanted to provide you with a couple updates on the projects I have been working on recently;

- The *Bad River Natural Resource Common Ground Quarterly Newsletter* which consists of updates from our NRD programs every 3 months on current and upcoming projects/activities. ***Be sure to catch the Spring Edition coming in June as we're introducing a "Lake Superior Days Photo Contest" which we're hoping to run annually before our Lake Superior Days Celebration.**
- Coordinating *Annual Lake Superior Days Celebrations*—coming July 13, 2018—located on the shores of our beautiful Lake Superior with Lake Superior Educational Booths and Activities. See Flyer on Page 11.
- Coordinating Bi-Yearly *Environmental Open House*—coming next year 2019—Stay



Tuned for More Details!

- Annual *Earth Day Celebration*— Coming SOON! Scheduled for Late April depending on the Weather (Watch for Updates!)
- *Updating our Great Lakes Restoration Initiative* brochure to provide current updates on the projects and plans using GLRI funds.
- Modifying our Conference Room C in the Chief Blackbird Center by adding a little S. T. Y. L. E. with canvas prints of NRD original pictures.
- Designing Signage for Tribal Beaches ***Waverly Beach Sign & No Trespassing Signs coming Summer 2018!**
- Natural Resource Department Facebook Page! Make sure to LIKE US!



Moving Forward to Make the Bad River Community Safer from Disasters

By Lissa Radke, Environmental Specialist, Natural Resources Department

The Tribe's Natural Resources Department, in collaboration with other tribal Departments and community members, is working on a project that's funded through a grant issued by the Federal Emergency Management Administration (FEMA) called a "Natural Disaster Pre-Mitigation Plan." This project will help the Tribe prevent and reduce impacts from future storms and natural disasters.

"Mitigation" means to reduce the severity or seriousness of something, which in this case, means reducing the often severe impacts from natural disasters such as floods, droughts, tornadoes, wildfires, blizzards, etc.

A group of representatives from numerous Bad River departments and services have been meeting monthly since last Fall to identify the natural and human resources that might be vulnerable and defining ways to re-

duce impacts. At an early January meeting, the group started ranking the severity of disasters and began to brainstorm ways to keep the tribe safer from harm. In just one hour, 16 participants came up with 78 possible mitigations for 8 disasters!

At the February meeting, the group generated mitigation ideas for 8 more natural disasters, and a small group of folks sorted through all mitigation ideas to come

up with one master list of possibilities. At the March 15 meeting, the group will prioritize those that are most important, and the final list of recommendations will be shared with community members throughout this Spring and Summer to get public comments and input.

So while the planning group is developing a new draft plan for Bad River, community input is necessary to make it valuable and useful for everyone. Your input is important!



The Bad River pre-disaster planning team members filled the conference room at a recent meeting to discuss how to reduce impacts resulting from natural disasters that could happen on the Reservation.



Left to Right: Denise Gilles, Jessica Strand, Edith Leoso, and Ed Wiggins came up with 7 ways the Tribe could reduce impacts from severe thunderstorms and high winds, and a dam or levee break.

Feel free to attend the March 15 meeting at 1:30 p.m. in the Housing Gathering Room, and look for a short survey we will be sending around to the community to get your thoughts.

The deadline for having a Council and FEMA-approved pre-disaster mitigation plan is September 2018, so we're on a very speedy deadline, but we welcome everyone's feedback in the next few months!

For more information contact Lissa at 682-7123 in the Natural Resources Department.

Radon on the Bad River Reservation

Daniel Wiggins, Air Quality Technician

Radon is a carcinogen that has been linked to the development of lung cancer. It is a natural radioactive gas that is present everywhere and is commonly traced back to sources in the soils around your home. It has the ability to infiltrate your home through foundation cracks and openings and once in your home can attach to particles in the air where they are then breathed in. Since radon is radioactive it can cause damage to lung tissue and contribute to the development of lung cancer.

The Bad River Tribe has a Tribal Indoor Radon Program, which has been testing tribal homes since 2006. Educating the Tribal community about radon is crucial, along with the proper training to tribal staff to provide radon expertise to Tribal Members. The Program has annual testing from January to March and has continued to work with the Bad River Housing Authority (BRHA) and private homeowners with testing and addressing radon issues, as needed.



Radon Mitigation Fan used for lowering levels on Housing Authority unit.

The BRHA has been a great partner in addressing radon effectively. Since 2006 the BRHA has testing each housing unit at least once. There has been a total of eight housing units that have tested

above the United States Environmental Agency's action level have a radon mitigation (reduction) system and shall



continue to be tested in the future to assure effectiveness of systems and analyze changing or fluctuating of radon levels.

The Tribe still faces many challenges with addressing radon effectively. Ideally new homes should be built with radon resistant features, but there are currently no requirements on the reservation for radon resistant new construction. Although new homes are also not being built in large numbers, homes that are have yet to include radon resistant methodology. This may be contributed to many new homeowners not being able to afford additional costs or they may have not just been aware of radon.

In addition, 100% of the BRHA units have been tested, but only half of private tribal homes have been tested. Private homeowners can be difficult to coordinate with and unfortunately has remained a challenge. Still the Program has continued to address private homes and has assisted one private homeowner with identifying proper mitigation techniques to utilize and funding to support project costs, when home was found with level 8 times the USEPA action level.

The only way to know if your home has high indoor radon concentrations is to test. 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 Daniel Wiggins, the Air Quality Technician at 715 -682-7123 or email at Air1@badriver-nsn.gov.**

Fish & Game Program Wildlife Section Annual Report for 2017

Lacey Hill-Kastern, Wildlife Specialist

Positions:

Wildlife Specialist (FT) – Lacey Hill Kastern (since 2010)

Invasive Species Coordinator (FT) – Darrel Burns (since May 2017)

Wildlife & Fisheries Aide – (1) Seasonal Piping Plover Monitors – (2) Seasonal Natural Resource Aides (invasive crew) – seasonal and crew size varies

Funding:

(funding levels by agency can vary annually; competitive grant funding)

BIA – Great Lakes Restoration Initiative, Circle of Flight, Endangered Species, Invasive Species

USFWS – Coastal Program, Tribal Wildlife Grant

WTCAC – Great Lakes Restoration Initiative
NRCS – Environmental Quality Incentives Program

USFS – Aagask Habitat Restoration

Past funding: APHIS-VS CWD funding, NPS GLRI Piping plover funding, USFWS GLRI Piping plover funding

Age: The Tribe's Wildlife Program ran out of funding and ceased to exist for several years. The program started back up the fall of 2010. The Tribe's Wildlife Specialist, Lacey Hill Kastern, received Wildlife Biologist Certification through The Wildlife Society which is an international professional organization committed to addressing national and international issues that affect the current and future status of wildlife in North America and throughout the world. There are currently only 1900 recognized certified wildlife biologists around the World.

Wildlife Program Summary

The Wildlife/GIS Specialist is responsible for developing and maintaining wildlife survey and management capabilities along with providing GIS expertise for the Bad River Tribe. The Wildlife/GIS Specialist:

- Monitors the Tribe's wolf population and is



pursuing state recognition of the Tribe's 2013 Ma'iingan Management Plan (this plan is currently open for revisions, stay tuned for upcoming public meetings)

- Develops strategies to assess and evaluate the status of on-Reservation wildlife resources;
- Provides recommendations for management strategies related to on-Reservation wildlife resources;
- Incorporates GPS/GIS into various wildlife studies;
- Assists the Tribe with additional GIS needs;
- Prepares progress and technical reports for various wildlife/GIS projects;
- Oversees multiple GLRI funded projects conducted by the Natural Resources Department on the Reservation;
- Coordinates educational/outreach activities for Tribal and surrounding communities on these projects, this includes the Critter of the Month program with local schools;
- Prepares grant proposals to acquire funds to assist the Natural Resources Department;
- Maintains familiarity with current grant funding opportunities and processes in the areas of natural resources;

2017 Summary Interior Subsistence Wildlife

The black bear population on the reservation was unable to be surveyed using bait stations during July 2016 or July 2017. In 2016, a massive flood event occurred right when we were going to be checking the bait stations and since this survey must be completed at the same time every year we were unable to complete it. This past year the Tribe's Wildlife Specialist was on maternity leave and no one was available to fill in for her during this period. In 2015, the bear population remained healthy and on the rise on the reservation with forty-four (44) percent of the fifty (50) bait stations being hit during the 2015 survey. There was a drastic decline in bait stations hit during the 2013 season, with only sixteen (16) percent of the bait stations being hit. The 2014 season should a slight increase with twenty-eight (28) percent being hit.

According to WDNR registration nonmembers harvested sixty-four (64) deer on the Reservation during the 2016 deer season. That is up from the nonmember harvest of twenty-two (22) the year before. Tribal members received a total of ten (10) transport tags for deer so the deer could be taken off the Reservation during the 2016 season. This is down from the forty (40) tagged during the previous 2015 season.

The woodcock and ruffed grouse populations were surveyed in April 2017 at ten (10) established monitoring stations. A total of twelve (12) ruffed grouse drums, nine (9) woodcock and zero (0) turkey gobblers were heard at the monitoring stations. The number of woodcock observed has remained stagnant since this survey began.

Nuisance Wildlife Control

Four (4) nuisance bears were relocated and thirteen (13) bear complaints were investigated by Conservation Enforcement Program staff during 2017 season. This is consistent to the nuisance animal control conducted in the

previous two years.

Despite popular belief, the Bad River Wildlife Program does not actively remove beavers. There are only several locations where removal must occur otherwise they are left alone. How removal occurs, is that first all beavers are trapped and removed from a location then a hole in the dam is made but only the size of the existing channel in that stream. Sometimes explosives are used, but most of the time these holes are made by hand. This year numerous beaver dams and beaver colonies were removed through a partnership between the Tribe, Town of Sanborn, and APHIS-WS along the township roads due to damage being caused to the roads.

**Non-Game Species/
Endangered Species**

The Tribe continues to monitor the movements of four (4) wolf packs which range includes parts of the reservation during 2017. During 2017, wolves were monitored using telemetry, track, and howling surveys. These surveys suggested that twenty-one (21) to twenty-six (26) wolves were commonly using the reservation before pups were born spring of 2017. There is no harvest allowed on the Bad River Reservation. Endangered species funding will continue to be used this winter to improve our winter surveying methods/transportation for surveying.



Productivity surveys for piping plover were conducted on Long Island from 25 May 2017 to 27 July 2017. There were four (4) breeding pairs that produced a total of nine (9) chicks, of which seven (7) fledged, in 2017.

The Tribe is also on its fifth year of



using acoustic recording units (ARUs) to monitor amphibian and neo-tropical migrants on interior wetlands throughout the Reservation. We have ten (10) long-term monitoring sites.

Coastal Wetland Protection and Enhancement

In the 2017, under the supervision of the Bad River Invasive Species Coordinator and with the assistance of multiple funding programs (mostly GLRI) our invasive species crew were able to cut and treat ninety-six buckthorn plants, treat six acres of purple loosestrife, hand-pull one acre of hybrid cattail, survey one hundred twenty acres for phragmites, treat wild parsnip along roadsides and the Pow Wow Grounds, reseed eleven acres of wild rice, and inspect forty-seven pieces of machinery for invasive species.



Circle of Flight Project

An Assessment of Toxin Concentrations, Transport, and at-risk Species on the Bad River Reservation

For several years, BRNRD has been conducting assessments of toxin concentrations at the various trophic levels of biota, sediment, and water on the reservation. As part of this study the wildlife program has



been focusing on amphibians and bald eagles.

BRNRD currently working with a contractor to compile and analyze this information.

Education and Outreach

The Wildlife Program participated in many educational activities over the 2017 season. In February there was the winter camp at the community center where the wildlife program had a fur and track identification table. In April there was the Bad River Natural Resources Environmental Open House where the wildlife program had two table of furs, another table of scat and tracks, and another table full of informational materials. Then there was also a table full of invasive species educational materials from the Department.

Then in July there was Lake Superior Day where there was some piping plover and invasive species educational materials. In October the wildlife program had a wolf monitoring table at the Northern Great Lakes Visitor Center for the middle school science symposium and we also had a table showing natural resource apps with the Bad River GIS and Invasive Species Program. For wolf awareness week that month, the wildlife



program in partnership with the Education Department and IAS Program hosted a wolf howling event with Bad River Youth programs that was a huge success. The month concluded with a fun Bat Awareness Week Activity at the Northern Great Lakes Visitor Center. Currently the Wildlife Program is working with the Education Department, GLIFWC, Wisconsin Trapper's Association, and others to plan a Trapper's Education Course this upcoming October. Stay tuned for more information.

FISHERIES EARNS BRAGGING RIGHTS

Lorrie Salawater, Fisheries Specialist

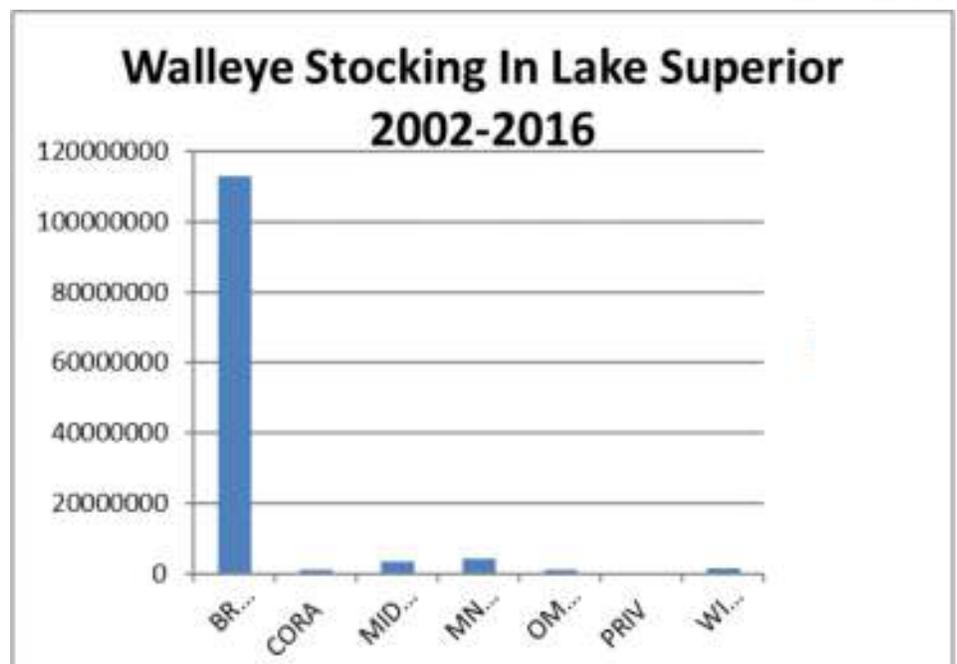
The Bad River Tribal Fish Hatchery has been stocking fish into reservation waters since 1968. Throughout this time, the hatchery has concentrated its activity on rearing walleye fry and fingerlings to supplement natural reproduction within reservation waters. After vastly expanding the hatchery in 2005, the Tribe was able to increase walleye production and begin producing Lake Superior strain yellow perch.

The Bad River Tribal Fish Hatchery can incubate up to 40 million walleyes and 4 million yellow perch eggs annually. If ideal conditions persist throughout the rearing season, the hatchery could produce up to 1 million walleye fingerlings in a single year.

The Bad River Fish Hatchery is something that he tribe should be proud of. We are the biggest producer of Walleye that stocks Lake Superior. There are several different agencies that stock



walleye in the lake, but they don't come close to what the tribe produces. As you can see by the graph that from 2002 to 2016 we have out stocked any other hatchery by millions.



-FISH DOCTOR-
Bad River's own Hilary Butler (Junie) tending to the walleye fry as he does Every Year.

Bad River Forestry Technician

Hello Everyone,

My name is Devon DeRosso I was recently hired as the New Forestry Technician here at Bad River. For a background I was born and raised in Ironwood Michigan, I attended Luther L. Wright high school, where I was a four-sport athlete, Football, weight lifting, baseball, and track & field. After high school, I attended Vermilion College in Ely Minnesota. While attending college I studied Natural Resources Technology/ Forestry and played football for the Ironmen. I graduated from college in May of 2017. When the position here at Bad River came open I was very excited, I would be able to stay close to home doing what I went to school for and continue with my passion for the outdoors. I am an avid fisherman, hunter, and sports fan. I look forward to the future of my position here at Bad River, managing the forest for years to come.

Thank You!



2017 Wildlife Annual Report Continued...

Critter of the Month

In 2017, the Wildlife Specialist & GLIFWC warden, Christina Dzwonkowski, taught the Critter of the Month program to Bad River Head Start and Our Lady of the Lake schools. Students were taught about beavers, red fox & gray fox, wolves, coyotes, white-tailed deer, moose, elk, and black bears. Critter of the month began in 2014 and is continuing through 2018.



2017 Goals Updates

- **To have another successful piping plover nesting season on Long Island. Continue to expand our education and outreach for this project.**

An update was included above. Signs for the beaches about piping plovers were created in 2017 and will be put in the ground this summer!

- **Continue mercury and contaminant study on bald eagles on the reservation. Create ed/outreach material on projects**

An update was included above. Once analysis is complete education and outreach materials will be created.

- **Continue ed/outreach with youth and community. Working with local schools on critter of the month program, Lake Superior Day, field trip to see plovers on Long Island, CBBNF Tour**

An update was included above. In 2018, we would like to add a bat monitoring project with Bad River Youth as part of the Indigenous Arts & Science Program.

- **Implement the Climate Change Monitoring Plan and continue long-term acoustic monitoring project**

An update was included above.

- **Continue to monitor reservation wolf packs and work towards better co management of wolves within the areas surrounding the Reservation**

An update on this was included above.

- **Wildlife Biologist Certification**
Certification was received May 2016!

Natural Resources Hosts Sleigh Ride at Annual Community Christmas Party...



Bad River Natural Resource Department

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~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.

Were on the Web!

Visit www.badriver-nsn.gov