



BAY MILLS INDIAN COMMUNITY

BIOLOGICAL SERVICES NEWSLETTER

SUMMER 2019

ISSUE 10



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IN THE NEWS: Dune Grass Restoration Continues at BMCC

In an effort to increase biodiversity, restore native plants and decrease erosion, Bay Mills Community College and Bay Mills Biological Services planted thousands of beach grass plugs on the sand dunes near the college.



Photo by Biological Services

Coastal sand dunes serve as protective barriers from flooding and erosion, provide reservoirs of sand to replenish the beach zone, and provide habitat for a variety of plants and animals. However many of these species, while adapted for the harsh, dynamic environment of a beach, are intolerant to vehicle traffic, which tears up root systems. Please do your part by giving these plants a chance to grow; walk on the well-developed paths and keep motorized vehicles off the beach.

Take a walk this summer and watch this natural community bloom!

For questions about fishing/hunting licenses, current regulations, or if you wish to report poaching, please contact Conservation Officers at 906-248-8640.

INLAND FISH AND WILDLIFE PROGRAM UPDATE

CHRONIC WASTING DISEASE

Chronic Wasting Disease (CWD) is a neurological disease that affects deer and elk and is highly contagious. In the past few years, it has become a hot topic in Michigan among hunters, biologists, and the general public. In 2015, a wild deer tested positive for CWD and since then 122 more positive deer have been identified in the Lower Peninsula (most of them hunter-harvested). In addition, one positive wild deer was identified in Dickinson County at the western end of the UP. The spread of disease is concerning because of the potential for it to cause decline in deer populations. CWD is easily spread between animals through direct contact, food and water sources contaminated with saliva, urine, or feces, and contact with infected areas.

Baiting or feeding animals, as well as keeping them in captivity, can increase the rate of disease spread. Because of the risk of disease spread associated with baiting, Michigan DNR has banned the use of bait in the Lower Peninsula (effective 1/31/19). Bay Mills has passed a ban on baiting in the same area as required by the 2007 Inland Consent Decree.

When an animal becomes infected with CWD, the disease causes brain degeneration that eventually leads to death. Prions, which are misfolded and infectious proteins, are the agent that causes CWD. Since the disease is not caused by bacteria or a virus, there is no known way to treat infected animals and the infectious proteins are very difficult to denature or “kill.” The prions can remain in the environment for years and infect other deer that come into an infected area. Though there have been no reported cases of CWD in humans, recent research suggests that there is a risk of CWD being transferred to primates after they ingest infected meat or come into contact with other parts of infected deer or elk. If you are hunting within the CWD management areas in Michigan (or any other state) it is recommended that you have your deer tested for the disease prior to processing or consuming the meat. Deer heads may be tested by Biological Services until Jan 2020. For more information on this testing or general information about CWD signs/symptoms and preventing disease spread, contact Gael Sanchez at gsanchez@baymills.org or pick up an informational brochure at the Conservation Office.”



Above: Counties with CWD positive deer

KEEP WILDLIFE WILD: Be Bear Aware

At times we experience issues with black bears on the Reservation. In many situations like this, bears will leave the area if food sources are removed. The Conservation and Biological Services Departments work together on this issue, but there are a few things that residents can do to help!

- Properly dispose of hunting scraps (including fish remains) away from residential areas. Use garbage dumpsters or the trash compacter.
- Remove birdfeeders from your yard when bears are most active.
- Keep garbage and odor at a minimum by removing trash often and cleaning the can.

For more tips, check out our factsheet, available at the Conservation Office and our [website](#).

FEATURED INVASIVE SPECIES: Eurasian Water-Milfoil



Photo by Allison Fox, Bugwood.org

European water-milfoil (EWM) an aquatic plant that grows entirely underwater often forming dense mats. The feather-like leaves grow in sets of four along 3-10ft stems. EWM is often the first aquatic plant to grow in early spring and quickly out-completes other aquatic life. It prefers disturbed shorelines and nutrient-rich waters. A small patch is already growing in the wharf in Back Bay and could devastate wild rice and fish populations in the bay if it spreads further.

Why it's a Problem

Eurasian water-milfoil grows very thick mats, enough to stop boat traffic by tangling propellers. It also impedes fish movement and diving ducks due to the lack of space between plants.

How it Spreads

Eurasian water-milfoil spreads by becoming attached to boats, trailers, or other equipment. Currents can also move fragments of plants which can root and establish new infestations. EWM also spreads by creeping runners.

Ways to Control Eurasian Water-Milfoil

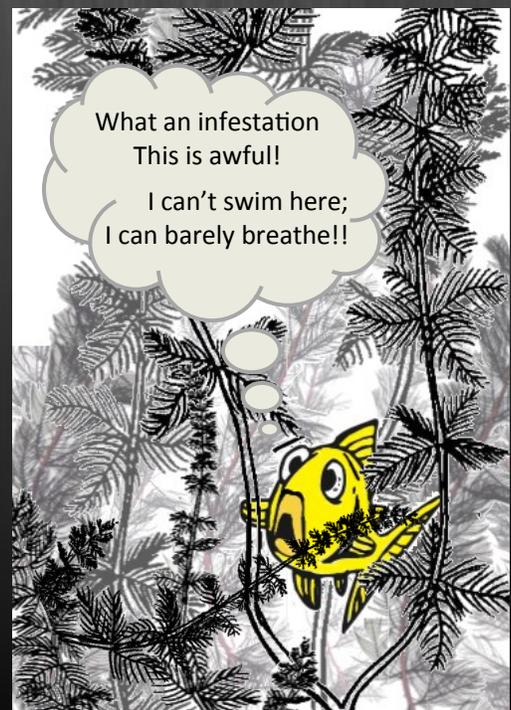
Hand pulling and harvesting is the best method to remove Eurasian water-milfoil. Overall, preventing further spread is the best strategy for this plant as it is very difficult to control.

For more information on identifying this plant www.uwsp.edu/cnr-ap/UWEXLakes/Documents/programs/CBCW/publications/EWM_Card.pdf

Photo courtesy of A. Fox, University of Florida, Bugwood.org

What You Can Do to Help

- Avoid areas that are infested or slow your vessel down when travelling near European water-milfoil infestations. Propellers can chop of fragments that can spread.
- Leave native vegetation in place to compete with EWM
- Always inspect your boat, trailer, and equipment after removing it from the water. Make sure to remove all plants, animals, and mud before moving to a new water body.
- Always **CLEAN** debris from your equipment, **DRAIN** the water, and **DRY** your equipment when leaving the lake to prevent spreading.



COMMUNITY OUTREACH

Boys & Girls Club Sets Sail Aboard the Inland Seas SchoolShip

On a beautiful sunny July day, 20 young scientists sailed around Hessel bay. Participating kids from Bay Mills Boys and Girls Club got to experience the way real scientists monitor the health of our Great Lakes. The children became scientists for the day, testing water chemistry, sampling for zooplankton, assessing the fisheries with an otter trawl and even looking for microplastic particles. They rotated through the lessons in small groups and then got to teach each other their new-found skills. They also became part of the crew as they helped hoist the sails and steer the ship on the Great Lakes schooner.

“It was a great experience and I would definitely go on the boat again. I loved learning about the water, the things in the water, and things that cause the water to change with the things in it. I also really liked the people who were guiding us; they were patient and helpful. I think other kids would have a great time too!”

—Tallulah Slabosheski



Above: Boys and Girls Club learns about water quality aboard Great Lakes schooner.



Photo by Biological Services

Above: New info board posted outside Bay Mills Maintenance bldg.

Waste Transfer Station gets a Facelift

Tons of recyclable materials are sent to landfills every day. But making products from recycled materials cost much less than harvesting, shipping, and manufacturing products from raw materials. Help preserve our natural resources for future generations by recycling. Updated information on waste disposal is now posted in the new kiosk board. Information about special events like Household Hazardous Waste collection or television recycling will also be posted here. Reduce, Reuse, & Recycle today! Contact Bay Mills Maintenance Dept for more information.

New Recycling Bins Benefit the Community and Environment

New recycling bins have been placed in many Bay Mills office buildings and BMRC boat launch to increase accessibility. These are made possible by the Great Lakes Restoration Initiative to keep harmful trash out of our waters. Reduce, Reuse, & Recycle today! Contact Aubrey Maccoux-LeDuc at (906) 248 6852 or amaccoux-leduc@baymills.org for more information.

GREAT LAKES FISHERIES PROGRAM UPDATE

Back Bay Fisheries Population Assessment



Above left to right: BMC Biological Services staff assess fish populations in Waishkey Bay (Back Bay).

The Waishkey Bay Fish Community Assessment Project was conducted this summer, as in previous years. These samples and data are currently being worked on. During 2018, a total of 1054 fish were captured. This included 72 white suckers (*Catostomus commersonii*), 66 bullhead (*Ameiurus* spp.), 28 walleye (*Sander vitreus*), 21 pumpkin seed (*Lepomis gibbosus*), 18 rock bass (*Ambloplites rupestris*), 15 yellow perch (*Perca fulvescens*), 6 longnose sucker (*Catostomus catostomus*), 5 northern pike (*Esox lucius*), 1 bowfin (*Amia calva*), and 1 smallmouth bass (*Micropterus dolomieu*). Results from 2019 are still being analyzed.

Walleye have been stocked in Waishkey Bay since 1991. The Inter-Tribal Fisheries and Assessment Program and Bay Mills Biological Services have stocked about 100,000 fish annually. In 2018 the Sault Tribe was able to stock 100,000 walleye in back bay. Walleye are marked with oxytetracycline (OTC) at the hatchery in order to identify their hatchery origin. When walleye are caught in this and other surveys in Waishkey Bay and the upper St. Mary's River, they are checked for OTC marks to estimate the effects of stocking as percentages of stocked and wild fish. The current estimate is that approximately 50% of the walleye population in Back Bay is stocked. This ratio has been fairly consistent for the last decade.

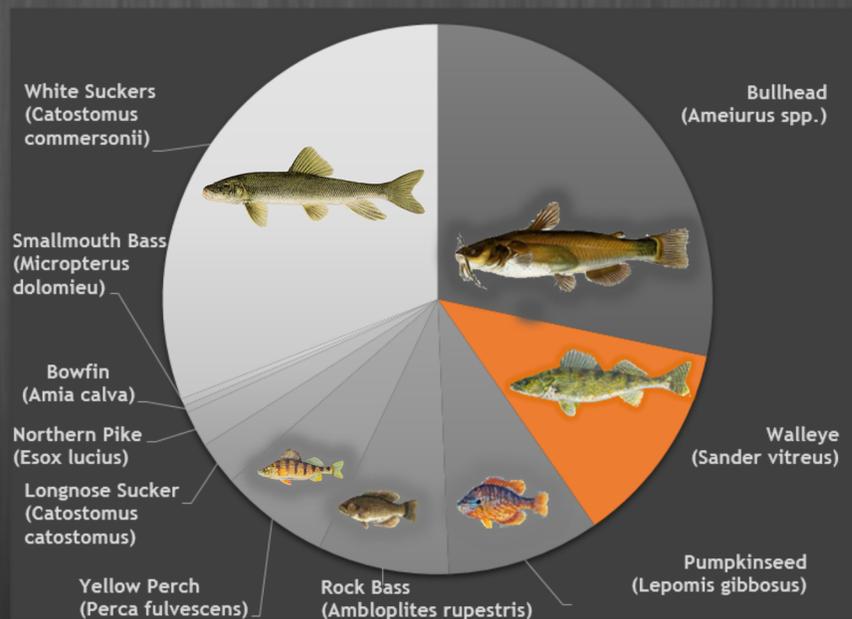


Figure above: Proportions of fish in Waishkey Bay, Brimley, MI.

If you have questions about the fisheries program, please contact the program manager, Paul Ripple at (906)248-8649, pripple@baymills.org.

WATER QUALITY PROGRAM UPDATE

Mussels of the Waishkey River

In cooperation with Bay Mills Community College, Bay Mills Biological Services conducted mussel surveys within the Waishkey River. This survey was done as part of a larger project to investigate the health of the Waishkey River and its biota. Mussels are filter feeders and are very sensitive to changes in the watershed and the mere presence of mussels can indicate that a river is in good condition. Monitoring their population numbers is a crucial in to evaluate changes occurring in the river, good or bad. The surveys were carried out at three points in the river; the East Branch, the South Branch of the East Branch, and the Waishkey River mouth. Species, length, age, and (if possible) sex were recorded before the mussels were released.

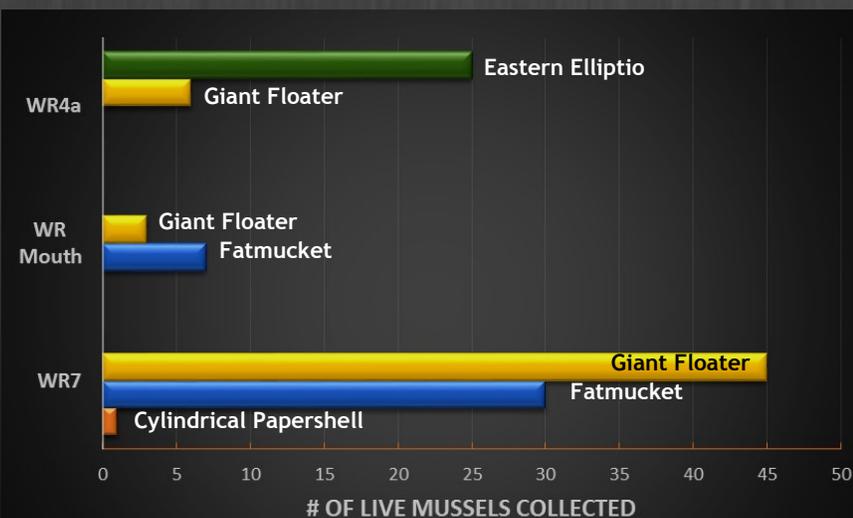
The graph shows how many mussels were found alive at the three sites (empty shells not included). Four species were found; giant floater (*Pyganodon grandis*), fatmucket (*Lampsilis siliquoidea*), cylindrical papershell (*Anodontoides ferussacianus*), and eastern Elliptio (*Elliptio complanata*) mussels. The fewest mussels were found at the mouth (6 giant floater mussels). Site WR4a was the only site containing eastern Elliptio mussel (3 giant floater, 7 fatmucket, 25 eastern elliptio). This may be because the host fish that they rely on to breed does not normally traverse to other points in the river. Site WR7 contained the most mussels of the three sites (45 giant floater, 30 fatmucket, 1 cylindrical papershell). Even though the site was underneath a busy bridge crossing, it had warm water and was the perfect depth for a mussel habitat.

Biological Services will continue to monitor river mussels and the is overall health the Waishkey River. For more information, contact Biological Services 906 248 8648.



Photo by Biological Services

Above: Fatmuckets of various sizes; Giant floater mussel found in Waishkey River.



This survey made possible by the NIFA Tribal College Research Grant.

GO LEAD-FREE FOR FISH & WILDLIFE

By Kendra Carrick & Trinity Bowen

Lead ammunition and tackle have extremely harmful effects on the environment. Lead is a toxic metal that has been banned from most products. When used in hunting or fishing gear, the lead can splinter, and be consumed by humans and wildlife. Lead can damage the immune system, brain, and reproductive systems of wildlife. No amount of lead consumption is safe for humans or animals.

When lead enters the bloodstream, it causes anemia, brain impairment, and harms the immune system. Loons, eagles, ducks, geese, and small mammals have been found to have increased amounts of lead in their bodies after ingesting lead bullets, shot, and fishing tackle, or game with lead shot. Lead can be found in the sediment and plants in areas contaminated from lead shot. Birds can be greatly affected by lead, especially because the lead is stored in the gizzard and broken down. The lead is absorbed into the bloodstream and secreted into the body. Treatment for lead poisoning in the wild is unlikely, unless the animal is found in the early stages of poisoning.

In some states, the use of lead ammunition and fishing tackle is illegal. Using non-toxic products such as copper or tungsten bullets, and tin, steel, or bismuth fishing tackle, can be a great alternative to lead. Restoration of areas that contain lead from bullets can take years, and leave irreversible damage to the ecosystem. Prevention is the best method to maintaining our ecosystem. Switching to non-toxic tackle and ammunition will help keep Bay Mills lead-free.



Upper: Photo by Profish3 <https://www.profish3.com/nonlead.htm>
Lower: Photo by Pallatrax <https://www.pallatrax.co.uk/product/swivel-stonze-weights/>



Photo from Little Traverse Bay Bands, NRD



Top: Eagles on deer carcass. Bottom left: X-Ray of a scavenging bird with lead fragments in the digestive tract, with a pullout photo of the actual lead fragment removed from the bird. This bird died from lead poisoning in 2012. Bottom right: Comparison of discharged lead (left) and non-lead (right) bullets. Courtesy of National Park Service <https://www.nps.gov/pinn/learn/nature/leadinfo.htm>

Problems Caused by Lead Bullets and Tackle

- ◇ Contaminates game meat after using lead ammo; splinters into small pieces that we consume.
- ◇ Other animals can be affected by lead shot or lead sinkers by consuming hunting waste or carcasses left behind. Plants and groundwater may even become contaminated.
- ◇ Lead remains in the soil after use: small fragmented pieces can have a greater effect on soil and plants in our area, because it is easily absorbed. Lead has poor mobility and does not break down.

Use alternatives, such as eco-friendly bullets and tackle that are made of Tungsten, can help prevent lead contamination in Bay Mills.

OIL PIPELINE LINE 5 UPDATE: READY FOR RETIREMENT?

North Americans have been dependent upon petroleum for more than one hundred years and have used many methods to get the raw material to market. Although pipelines are one of the safest methods of transporting oil products, they still pose significant threats the environment and public health. Enbridge, Inc operates the Line 5 pipeline that runs from Superior, WI to Sarnia, Ontario, Canada. Along its 645 mile-long path, Line 5 traverses 50 mi in close proximity to Lake Superior, 140 mi along Lake Michigan coast, and lies exposed under the Straits of Mackinac. Lakehead Pipe Line Company, Inc, now Enbridge, Inc installed Line 5 over 66 yrs ago (in 1953). Engineers at the time gave it a life expectancy of 50 yrs.

Biological Studies at Line 5 Stream Crossings

A repeated complaint about Line 5 is the lack of attention paid to the many stream and wetland crossings along its 645 mile length. The terrestrial portion of Line 5 crosses numerous sensitive areas of streams and wetlands of the Lake Michigan-Huron basin. In the Upper Peninsula, Line 5 crosses 16 tributaries within 9 miles of Lake Michigan – 11 of those are less than 4 miles from the lake. That means an oil spill in this area would have a high likelihood of reaching Lake Michigan. In the Northern Lower Peninsula, Line 5 crosses the Indian River, Little Sturgeon River, Pigeon River, and Upper Black River and traverses within a few miles or less from many sparkling inland lakes, including Paradise, Burt, Mullet, and Douglas. These waterbodies include rare and sensitive species such as Brook Trout, Lake Sturgeon, rare mussels, and threatened and endangered species. Some crossings are within 4 miles of Lake Michigan; should a rupture occur, petroleum products could reach the Lakes within minutes. As part of the agreement with the State, some biological surveys were conducted on some stream crossings this summer. While some data is better than none, these surveys are lacking in the following ways:

1. Rare wetland plant surveys were conducted primarily in early summer, when only a handful of plants are up and blooming.
2. Mussel surveys were conducted in small geographic areas surrounding the pipeline, ignoring potential impacts to downstream populations.
3. Fish electroshocking surveys were conducted in late summer, when biodiversity of streams is lowest (spring and fall spawners are missed).
4. Tribes and tribal biologists were excluded from the development of these survey plans.



Above: Map of stream and lake crossings of Line 5; Tip of the Mitt Watershed Council <https://www.watershedcouncil.org/enbridge-energy-line-5.html>



Bad River Band Sues Oil Company

Line 5 has been threatening 645 miles of Great Lakes forests and streams for 66 years. In July 2019, the Bad River Band of Lake Superior Chippewa filed a federal lawsuit against the company Enbridge.

Bad River Tribal Chairman Mike Wiggins Jr. said the tribe asked Enbridge to shut down Line 5 during the spring thaw over concerns it might rupture. This was a reasonable request considering extreme flow rates associated with spring runoff. "The river is scouring the bank away and is only about 20-some feet away from the pipe," said Wiggins. "Enbridge rejected the notion of shutting the oil flow down to protect our river and Lake Superior." Rivers naturally move, shift, realign. The Bad River's movements are putting it closer and closer to the pipeline, threatening to expose it. According to the complaint, Line 5 was 320 feet from the north bank of a meander in the river in sixty years ago, but now, the riverbank is only 28 feet from the Line. "We want the pumping of oil through our reservation boundaries and through our watershed to cease immediately," said Jennings. "We're not convinced that Enbridge has the best interest of our community in mind when operating Line 5. We need to do and take action to protect our people, our assets and our resources."



Photo courtesy of Bad River Band

Above: 2016 storm causes devastating erosion .

"...I think what people should understand is the constant fear and anxiety that our community has had to endure due to constant and unknown threats that the line poses..."

Erosion caused by severe storms is a huge concern at Bad River. A massive thunderstorm in July 2016 caused the Bad River to flood over its banks, displacing people from their homes and washing out many roads (see photo above). Earlier legal agreements don't account for and calculate in the "changing dynamics in terms of bank erosion and the changing geophysics that are waterways are experiencing because of all the storms," said Chairman Wiggins. "What that ends up doing is it puts us in a perpetual chase for the next weak spot, a perpetual hunt for the next possible rupture."

Wiggins said Line 5 threatens the tribe's treaty rights to hunt, fish and gather.

"I think what people should understand is the constant fear and anxiety that our community has had to endure due to constant and unknown threats that the line poses," said Jennings. "It's a burden that we're not willing or prepared to keep any longer."

Read the full article by Danielle Kaeding, Wisconsin Public Radio; published: Tuesday, July 23, 2019, at <https://www.wpr.org/bad-river-tribe-files-federal-lawsuit-against-enbridge>

- 4/1/2018
Line 5 dented by anchor strike
- 4/23/2018
Line 5 turned 65 yrs
- Oct-Dec 2018
In a lame duck effort, Gov. Snyder approves 2nd and 3rd Agreement with Enbridge and Tunnel agreement.
- March 2019
Attorney General Nesel nullifies Tunnel Agreement
- 2019
Oil industry begins propaganda campaign in favor of tunnel, despite public opposition

STAFF CHANGES in BIOLOGICAL SERVICES

Gael Sanchez of Albuquerque, New Mexico joined the Biology team in August as the full-time Inland Wildlife Biologist. She coordinates the study and management of wildlife for the Bay Mills Indian Community. Gael got her bachelor's in Conservation Ecology at New Mexico State University and Master's in Wildlife Science from Texas A&M University-Kingsville. She has previously worked around the country for USFS, the BLM, Colorado Parks and Wildlife, Idaho Game and Fish, the University of Georgia, and the University of Idaho, and most recently in Michigan for the MDNR and Oakland County Parks and Recreation . Gael has studied a variety of topics and animals including small mammals, birds, deer, large predators like bears and wolves, genetics, and Chronic Wasting Disease.



Above: Gael Sanchez

MEET THE SUMMER CREW! SEASONAL STAFF in BIOLOGICAL SERVICES

Gannon Janhke of Bay Mills, MI is assisting the Invasive Species Program with mapping and pulling invasive plants around Bay Mills. He is studying computer information systems at BMCC, then plans to continue on to LSSU.

Taylor Gamble of Bay Mills, MI is assisting with water quality monitoring, beach monitoring, and biological sample processing. She is pursuing a bachelors degree in general science at BMCC then plans to continue on to LSSU. She plans to study genetics.

Emily Rhodes of Macomb, MI is assisting with wetland biological monitoring as well as water quality monitoring. She is also looking at microplastics in Back Bay fish stomachs. She is studying Fisheries and Wildlife Management at LSSU and hopes to pursue a career in Great Lakes fisheries.

Kendra Carrick of Bay Mills, MI is assisting the Inland Fish & Wildlife Program with fish population assessments, wild rice and carp project, and trail camera monitoring. Kendra is studying Pharmaceutical Science at Ferris State University. She hopes to be a pharmacist someplace warm.

Trinity Bowen of Bay Mills, MI is assisting the Inland Fish & Wildlife Program this summer. She will be attending BMCC this fall and hopes to study social work.



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