



BAY MILLS INDIAN COMMUNITY

BIOLOGICAL SERVICES NEWSLETTER

WINTER 2022

ISSUE 14



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

Ininaatig Dibaajimowinan

STORYTELLING EVENT: SUGAR MAPLE

In a virtual storytelling session held on February 8, community members came together from across sugar maple territory to talk about our relationship with ininaatig (the maple tree). A panel of elders, harvesters, and resource managers shared their stories, experiences, concerns, and items of importance for the next generation to care for ininaatig. The panelists also shared traditional stories, songs, and teachings, as well as harvest knowledge such as timing of sugaring, sap quality, and composition.

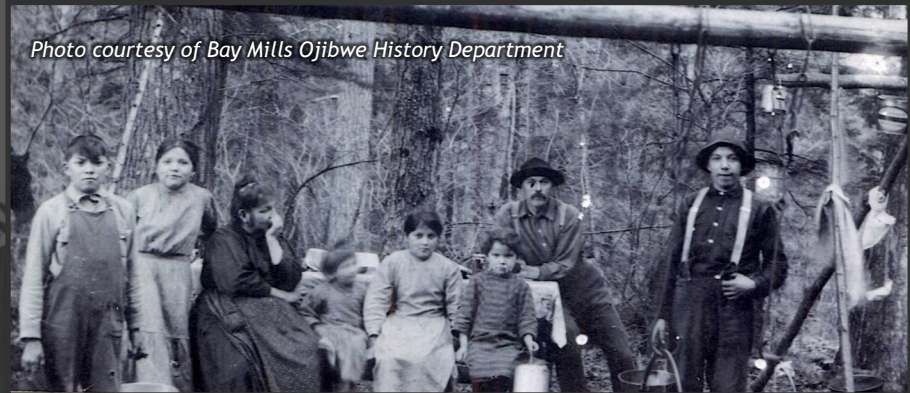
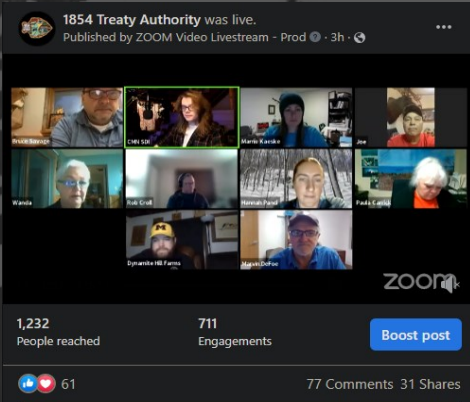
Ininaatig will feel the effects of climate change like all beings, particularly related to the cultural practice of maple sugaring. This concern spurred the creation of our ininaatig workgroup, formed in late 2020 and made up of tribal members, tribal employees, and tribal sugarers along with partner agencies who work with ininaatig across its range. The goal of the workgroup is to share knowledge, ideas, questions, and research about ininaatig. We also want to learn about climate change impacts and gather information that can enable more holistic and culturally-informed ininaatig management in light of those climate impacts. We wanted to



SCAN ME

Rewatch the
recording
[here!](#)

...CONTINUED ON NEXT PAGE...



Above: A Bay Mills family at their sugar camp.

Chi-miigwetch to all the speakers, hosts, & event planners!

- ◇ Gimiwan Dustin Burnette
- ◇ Marvin Defoe (Red Cliff)
- ◇ Wanda Perron, Paula Carrick and Joe Carrick (Bay Mills)
- ◇ Bruce Savage (Fond du Lac)
- ◇ Erik Carlson, River Spry, Matt Petz (Grand Portage Forestry)
- ◇ Jerry Jondereau & Katy Bressette
- ◇ Great Lakes Indian Fish and Wildlife Commission, College of Menominee Nation’s Sustainable Development Institute, 1854 Treaty Authority, Wisconsin Tribal Conservation Advisory Council, Dynamite Hill Farms, Bay Mills Indian Community, United Southern and Eastern Tribes, and the Northern Institute of Applied Climate Science



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start by learning more and reacquainting ourselves with ininaatig.

The virtual event was attended by over 220 viewers, and many watched with their families. One elder reflected the truth that is found in old stories: “Our ancestors told us that the trees would wake up when the Thunderbirds come; we know this now as a change in barometric pressure. But our ancestors had to tell it in a story that would stick with us; these old stories are their whitepaper.” Bay Mills elder Wanda Perron reflected how she didn’t begin sugarbushing until well into adulthood when she taught herself. In her family, little to no sugaring happened for two to three generations! She attributed this to the great cutover, the Indian Allotment Act (and quick loss of those allotments), and boarding schools.

The full recording is available on the YouTube page of [1854 Treaty Authority](#).



AVOID HUMAN – WILDLIFE CONFLICTS IN THE BACKYARD

- Take down bird feeders temporarily if bears are seen nearby.
- Secure garbage cans and empty frequently.
- Dispose of fish and game carcasses properly, away from residences.



GET TO KNOW A NATIVE SPECIES: AMERICAN BROOK LAMPREY



Photo courtesy of North American Native Fishes Association

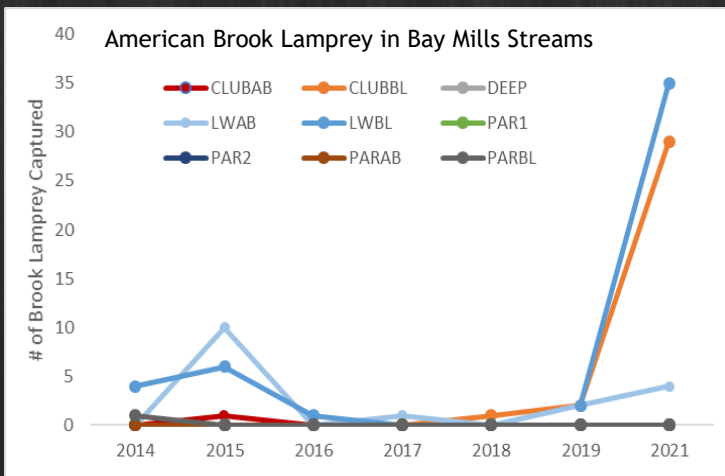
American Brook Lamprey (*Lethenteron appendix*)

American Brook Lamprey are primitive, jawless fish that inhabit streams at Bay Mills. American Brook Lamprey are a native species to Michigan and can be found in cold streams throughout the Central and Eastern United States. At Bay Mills, they are often found at 5 of 9 stream sites monitored. As larvae, called ammocoetes, American Brook Lamprey spend up to 5 years inhabiting soft stream sediments where they filter feed fine organic matter from the water. Ammocoetes are eyeless and have a small mouth with undeveloped teeth. Ammocoetes achieve adulthood by undergoing transformation where they fully develop functioning eyes and a mouth with numerous, blunt teeth. Ammocoetes transform into adults in the late summer to early fall and spawn the following spring, after which the adults die.

Adults commonly 6 to 7 inches--much smaller than sea lamprey. Mouth with scattered blunt teeth. Two distinct dorsal fins. Olive coloration on back fading to silvery white on belly. Ammocoetes (larvae) are worm-like in appearance, lacking eyes and can range from 1-7 inches

The weak teeth of American Brook Lamprey attest to the fact that they are not parasitic on fishes. American Brook Lamprey ammocoetes are very

Above: Native lamprey are small, only the length of a human hand.
Below: Bay Mills Biological Services observed a record number of brook lamprey in streams in 2021.



difficult to distinguish from those of the Sea Lamprey. Adults are rarely observed because they are only present when people are not typically in and around streams (fall to spring). Due to their stringent habitat requirements, the presence of American Brook Lamprey is an indicator of good water quality.

As part of regular stream health monitoring, Bay Mills Biological Services Department surveys the fish populations in Reservation streams annually. 2021 was a record year for American Brook Lamprey! Populations of fish and wildlife naturally fluctuate and this record year to brook lamprey is likely part of their natural variability.



Photo by R.P. Jacobs



Photo by USFWS

Left: The weak teeth of adult American Brook Lamprey indicate that they do not feed on fishes as do Sea Lamprey.

Right: Comparison to strong teeth of Sea Lamprey (*Petromyzon marinus*).

Photos courtesy of North American Native Fishes Association, gallery.nanfa.org; Jacobs, R. P., O'Donnell, E. B., and Connecticut DEEP. (2009). *A Pictorial Guide to Freshwater Fishes of Connecticut*. Hartford, CT; and US Fish and Wildlife Service, Bugwood.org

PROTECTING & RESTORING MANOOMIN FOR FUTURE GENERATIONS

Manoomin in the Great Lakes

Manoomin (wild rice) has grown throughout the great lakes region for thousands of years. It has cultural, spiritual, and dietary significance for Lake Superior Anishinaabe and once flourished throughout Great Lakes bays and connecting channels as well as inland lakes and streams. Though manoomin is less prevalent in the eastern Upper Peninsula, systems like the St. Marys River once supported many beds that spread as far as the eye could see. Events like the great cut over, introduction of invasive species, and manipulation of water levels have resulted in manoomin being scarce, if not lost completely.

Restoring Manoomin to the Landscape

Bay Mills Indian Community has been working to restore manoomin in the eastern Upper Peninsula for more than 30 years. In the early 90s, a dedicated group of community members began seeding manoomin into Spectacle Lake and Waishkey Bay. While some years are better than others, these beds have grown to as large as 13 acres during some years. The success seen in Spectacle Lake has not been the case in Waishkey Bay with small, sparse beds of manoomin, together totaling less than an acre. While some factors that affect manoomin are beyond our control, like changing water levels and climate change, Biological Services is working to identify and limit the impact of other factors affecting manoomin in Waishkey Bay and Spectacle Lake.

13

Acre-bed in Spectacle Lake

650

Lbs seeded in Spectacle Lake

1

Total acreage of beds in Waishkey Bay



Photo by Bucko Teeple



Photo by Biological Services

Above: BMIC staff and community members like Wanda Perron (pictured) spread 650 lbs of manoomin seed in Spectacle Lake during 2021 to enhance beds which had been reduced by geese herbivory.

Left: Manoomin seed grown in Spectacle Lake.

Impacts of Canada Geese on Manoomin

Canada Geese (*Branta canadensis*) can impact manoomin by eating the plants even before they produce seed. Because manoomin is an annual plant, goose herbivory not only limits the amount of manoomin produced during that year, but also the ability of the bed to continue growing into the next year. Over the past 50 years, the goose population in Michigan has grown more than 30 times larger. Biological Services has a multifaceted approach to limiting the impacts of geese on manoomin. At Spectacle Lake, stands that have been reduced through goose herbivory will continue to be reseeded with manoomin purchased from tribal partners in Wisconsin and Minnesota. In Waishkey Bay, we will use a combination of protecting seeded areas with fencing and reducing the goose population, through increased goose harvest, which will benefit both waterbodies.



Impacts of Common Carp on Manoomin

Another impact on manoomin in Waishkey Bay that we have been working to understand is Common Carp (*Cyprinus carpio*). Carp are found throughout the Great Lakes, including Waishkey Bay. Carp are known to impact aquatic vegetation through their feeding habits by rooting around in the sediment and causing plants to be uprooted. Aquatic vegetation can also be uprooted during carp spawning, which occurs in the same habitat where manoomin grows and at the same time that manoomin is the most sensitive to disturbances. In 2019, Biological Services started tagging carp to track their movements around Waishkey Bay. With the data from this project, we have identified spawning sites to avoid from future seeding of manoomin. We also learned that most carp don't stay in Waishkey Bay for much of the year, so avoiding these known spawning sites for manoomin restoration should reduce the overall impact of carp on manoomin.

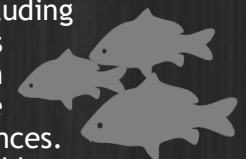


Photo by Biological Services

Beds of manoomin in Spectacle Lake flourished during 2020 and 2021, spreading across more than 10 acres during both years.

Partnerships

Biological Services continues to work with Tribal and State partners to restore and re-establish manoomin across the eastern Upper Peninsula. Through collaborations like the Michigan Wild Rice Initiative, we work to collectively monitor existing beds, restore manoomin where it has been lost, and educate others about the importance of manoomin across the state.

For more information about the efforts to protect and restore manoomin, contact Fisheries Biologist, Frank Zomer at 906-248-8654

INDOOR AIR QUALITY

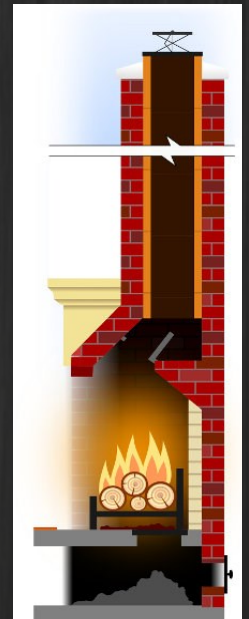
It is often easier and more cost effective to prevent air quality issues rather than treat them. Proper woodstove maintenance can drastically reduce carbon dioxide and carbon monoxide in your home. Smoking tobacco and e-cigarette use indoors introduces an array of chemicals and have negative health consequences for everyone in the home. Radon and mold test kits are two cheap and easy ways to see if there is a more serious threat to your health in your home. These kits are usually found at hardware stores or can be ordered online. Radon kits are especially inexpensive and easy. Mold can be prevented by ensuring proper ventilation in any area that can accumulate moisture and appropriate cleaning. To learn more about indoor air quality, take this Interactive home tour: <https://www.epa.gov/indoor-air-quality-iaq/interactive-tour-indoor-air-quality-demo-house>

IMPROVING INDOOR AIR QUALITY

There are several steps you can take to improve your home's air quality. Once you have identified the sources, it is important to take action.

- Ensuring your woodstove is free of blockages, sufficiently sealed at the joints and is properly capped prevent smoke from leaking into your home.
- Adding a fan to your bathroom and running it for about 20 minutes after a shower or bath will reduce the likelihood of mold and mildew, as well as using an after shower spray on the tub and tile.
- Radon levels can be tested with a simple home radon test. There are several resources available to reduce radon exposure if a test comes back above the action level.
- Lastly, eliminating tobacco residue throughout your home can reduce the load of harmful chemicals. This requires thorough cleaning of walls, ceilings, carpet, ducts, and furniture. Hot, soapy water is generally enough to remove residue from surfaces.

More information can be found here: <https://www.epa.gov/indoor-air-quality-iaq>



EVERY 3 YEARS

PUMP IT! FOR YOUR HOME & OUR WATERS

COVID has changed our lives in many ways. More people are spending much more time in their homes than usual. This means more toilet flushing and overall water use. Septic tanks should be pumped at least every three years to lengthen the lifespan of the septic system and drain field, and to protect the environment. If you don't contact your local septic pumping service a call! Homes with lagoon systems also include a septic tank. If you are unsure of the septic tank location, the county Health Department or Indian Health Services can help determine where the tank may be located.

SPECIAL SOLID WASTE & RECYCLING EVENTS

SUCCESSFUL TV COLLECTION COLLECTED OVER 32,000 LBS!

A community electronic waste collection event was held in September 2021. This free event collected 32,514 pounds of electronic waste!

Electronic manufacturers who sell TV's and computers in Michigan are required by State law to implement a free and convenient electronic take-back program. However most of these events are hosted in urban areas. Since 2018, the Michigan Department of Environment, Great Lakes and Energy (EGLE) has been focusing on supporting the rural collection of electronics with an annual grant program. BMIC Biological Services partnered with EGLE and HP to make this event a success for the rural communities of the Eastern Upper Peninsula.



ELECTRONIC WASTE COLLECTION NOW AVAILABLE YEAR-ROUND

Electronic waste is one of the fastest growing waste streams on the planet and includes many harmful elements that can end up in our soil, water and air. The Maintenance Department is now collecting electronic waste all year long. Please drop off items Tuesday through Friday, 10am–4pm at the new waste transfer station location at 5414 S Nbiish Road, Brimley MI (top of Plantation hill, near the water tower). This free service is available to Tribal members only and a Tribal ID is required at the time of drop off.

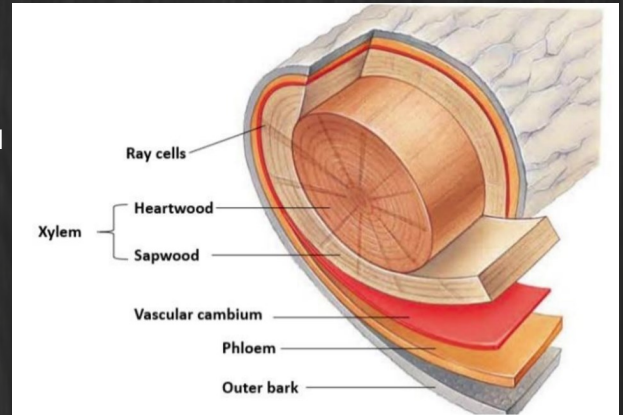
	✓	✓	✗
	<u>Acceptable Items</u>		<u>Not Accepted</u>
	Cables & Cords Camera Cell phones Clocks Coffee Makers Printers Desktop & Laptop Computers	DVD Players Monitors TV's Microwaves Radios Stereos Toasters Gaming Consoles	Large Appliances/ White Goods Ink Cartridges Liquids Medical Equipment Vape Pens Gas Cylinders
	<i>Batteries must be removed from devices and placed in separate receptacle.</i>		

ANATOMY OF A TREE: Spring Sugar Maple

WHAT'S GOING ON UNDER THE BARK?

Spring is approaching and many have maple on the mind. It is well known that sap flows when temperatures alternate between freezing and thawing, but there is a lot of complexity to why it happens. When a warm (above freezing) day follows a cold (below freezing period), positive pressure develops in the tree, forcing the sap through the xylem and out the taphole (or wound). During a freezing event, negative pressure in the tree draws water up from the roots. The drawing up of water can be quite rapid. The temperature fluctuations create alternating periods of negative and positive pressure.

- Ray Cells – These living cells in the xylem, shuttling sugar and wastes horizontally and vertically in the tree
- Xylem – These cells transport water and minerals (i.e. taking water from roots to leaves). Xylem cells are ‘pipes’ penetrated by drilling a taphole for sugaring.
 - Sapwood – youngest wood from the bark towards the center, often lighter color
 - Heartwood – oldest wood in the middle of the tree which may be a darker color
- Vascular Cambium – This is the growing part of the trunk; a thin dividing layer which grows new xylem and phloem
- Phloem – These living cells are the pipeline for sugar, moving it up and down the tree (i.e. taking food from leaves to roots)
- Outer Bark – This protects the tree from insects, retains moisture, and helps regulate temperature.

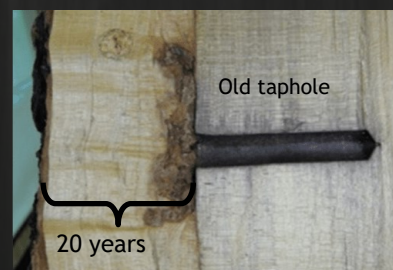


Above: Diagram of tree. Below: A cross-section and a longitudinal section of the trunk help demonstrate how healthy trees react to and recover from tapping.

After taps are removed at end of season, maple trees will heal over the taphole wounds. The photos to the right show how a tree recovers from properly placed taps. Stained wood accumulates with each season as non-functioning sapwood. Stain columns form in spring as internal plugs, to stop the flow of sap out of the tree. The old taphole will remain hollow, while new sapwood eventually grow over it.

Small diameter maple tap spiles help minimize the volume of stain columns, as the tree may heal over faster. With proper tapping, a healthy tree should grow new sapwood faster than stain column volume accumulates.

Right: Photos by of Reece, Urry, Cain, Wasserman, Minorsky, Jackson, & Campbell, 2014, p.754. Todd Leuty (previous Agroforestry Specialist), and edited by Jenny Liu (Maple, Tree Nut, and Agroforestry Specialist).



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