



BAY MILLS INDIAN COMMUNITY

BIOLOGICAL SERVICES NEWSLETTER

SUMMER 2024

ISSUE 19



Photo by Kurt Kipfmueller, UMD

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

In The News: Prescribed Burn at Raco Rifle Range

This summer wildland firefighters from the US Forest Service conducted a prescribed burn of the old rifle range off M28 near the Smithers facility in Raco. The area was used by Air Force years ago, but has long since been managed as an opening by the US Forest Service. Openings like this are burned frequently, approximately 5-10 years.

The prior condition of vegetation in the old rifle range included a dense carpet of reindeer lichen, many bracken ferns, spotted knapweed, grasses, and old blueberry bushes which produced little fruit. Land managers hope that this summer's prescribed burn will decrease encroachment of woody vegetation and create wildlife habitat (including dead standing trees). They also hope the fire will stimulate blueberries while reducing competing plants.

Other burns this summer include an area east of the Rifle Range and around Highbanks. Planned burns like these are great training opportunity keeping local resource staff trained up. Many partners assisted with these burns including Bay Mills Fire Crew and staff from USFS, BIA, Seney FWS, and MiDNR.



Photo by DNR Air support partner

Above: Prescribed burn courtesy of K. Kipfmueller UMN-Duluth.

Left: View of Rifle Range burn from above in DNR airplane.

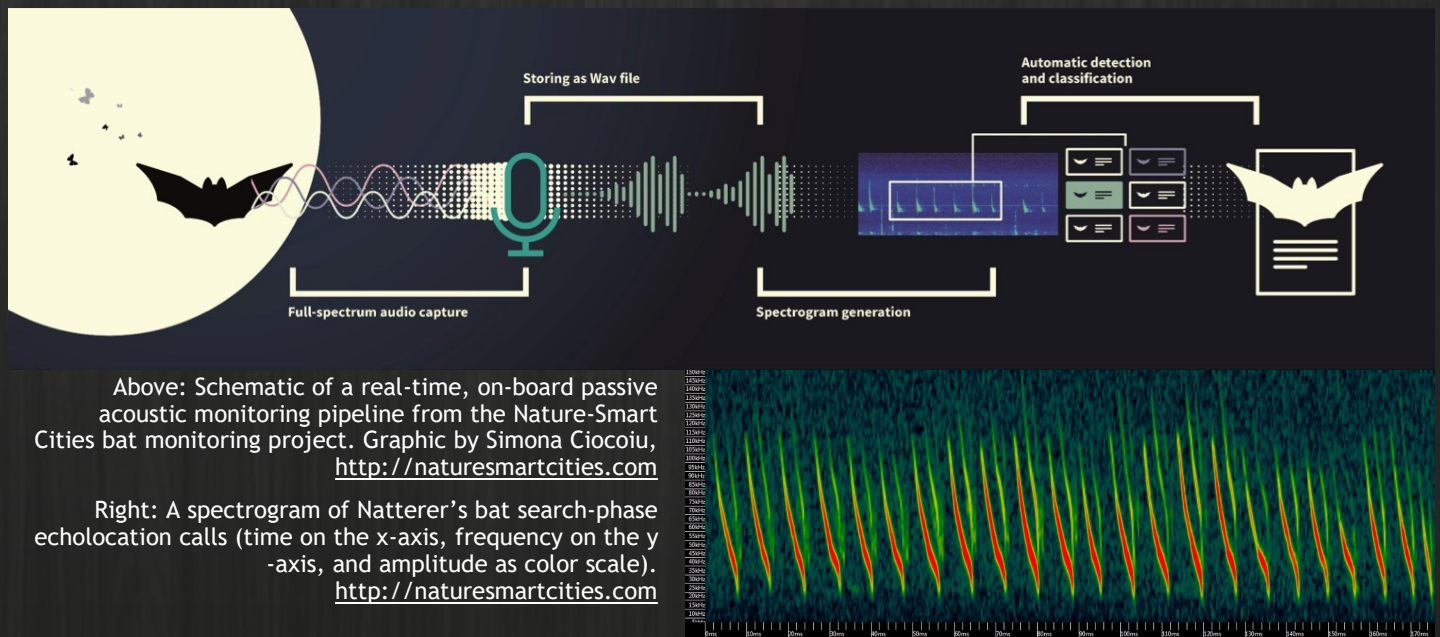
WILDLIFE PROGRAM UPDATE

GOING BATTY AT BAY MILLS!

Did you know that bats are the second most diverse order of mammals with over 1,400 known species? Nine of those species of bats are in Michigan, including Big brown bat (*Eptesicus fuscus*), Little brown bat (*Myotis lucifungus*), Hoary bat (*Lasiurus cinereus*), Silver-haired bat (*Lasioncyteris noctivagans*), and Eastern red bat (*Lasiurus borealis*) which can be found in the eastern Upper Peninsula.

Bats have a few important roles in the ecosystem including pest control and pollination. Many bats have a diet of mosquitoes, moths, and other flying insects and can often consume their body weight every night! Bats can also act as pollinators and in some areas are responsible from spreading pollen to aide in fruit and crop production.

Across the nation, bats are currently facing population decline due to a fungus called White-nose Syndrome (WNS, *Pseudogymnoascus destructans*). WNS is a fungus that spreads to bats during hibernation and causes them to become more active. This leads to the depletion of their stored fats that are made to help them through the winter, leading to lower survival rates. Multiple studies have been conducted to further understand WNS in Michigan bat populations including monitoring the longevity of little brown bats with the presence of WNS (Kurta et al. 2020) and bat hibernation in abandoned mines in the U.P (Kurta and Smith 2014).



Above: Schematic of a real-time, on-board passive acoustic monitoring pipeline from the Nature-Smart Cities bat monitoring project. Graphic by Simona Ciocoiu, <http://naturesmartcities.com>

Right: A spectrogram of Natterer's bat search-phase echolocation calls (time on the x-axis, frequency on the y-axis, and amplitude as color scale). <http://naturesmartcities.com>

One way to study bat populations is by conducting stationary acoustic monitoring. This entails using acoustic recorders and microphones set at 10 ft high to record bat calls from sunset to sunrise. Once the audio is captured, the data is analyzed and can identify species specific bat calls. This information provides biologists with presence and absence data which can be used as a focus area for further studies on the effects of WNS has on a specific bat population. Bay Mills Biological Services Department is currently conducting acoustic bat monitoring across the eastern and central U.P at 18 site locations, including the reservation! Results from our study will be released in the coming years.

Sources: <https://www.batcon.org/about-bats/bats-101/>

<https://www.nps.gov/articles/what-is-white-nose-syndrome.htm>

Kurta A, Foster RW, Daly BA, Wilson AK, Slider RM, Rockey CD, Rockey JM, Long BL, Auteri GG, Collins JD, White JD, Kaarakka HM, Redell JA, Reeder DM. 2020. Exceptional longevity in little brown bats still occurs, despite presence of whitenose syndrome. *Journal of Fish and Wildlife Management* 11(2):583-587; e1944-687X. <https://doi.org/10.3996/JFWM-20-039>

Kurta, A. and Smith, S. 2014. Hibernating Bats and Abandoned Mines in the Upper Peninsula of Michigan. *Northeastern Naturalist* 21(4):587-605. <https://www.jstor.org/stable/26453826>

IS YOUR HOME READY FOR EXTREME WEATHER?

GRANT ALLOWS FOR UPGRADES IN BAY MILLS RESIDENCES

Inter-Tribal Council of Michigan (ITC) received funding from the Energy Foundation to develop a Weatherization Assistance Program that provides Bay Mills Tribal citizens access to energy efficiency upgrades and energy-saving heating and cooling systems for free. This program will primarily focus on installation of heat pumps and geothermal technology, and will prioritize households utilizing propane.

Contact Inter-Tribal Council of Michigan (ITC) for more information.



ACCEPTING APPLICATIONS UNTIL AUGUST 31ST

GET YOUR APPLICATION AT WWW.BAYMILLS.ORG OR PICK UP AT TRIBAL ADMINISTRATION TODAY!

WEATHERIZATION ASSISTANCE PROGRAM

RESIDENTIAL HOMES

Limited to Bay Mills Indian Community Citizens

PROGRAM SERVICES

- ✓ Home Energy Audit
- ✓ Energy Efficiency Upgrades
- ✓ Heat Pump Installation
- ✓ Geothermal Installation

Questions?
906-248-8100

BAY MILLS INDIAN COMMUNITY
ONOZHEKAWING

INTER-TRIBAL COUNCIL OF MICHIGAN, INC.

BE BAY MILLS AIR AWARE

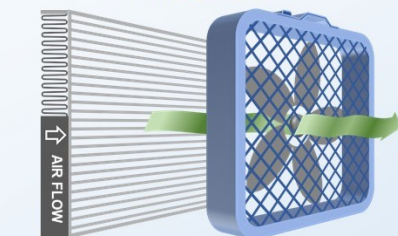
As wildfires rage across the US and Canada polluting the skies with smoke again this summer, managing the wildfire smoke entering your home has gotten a little easier with DIY filters.

Exposure to wildfire smoke is toxic to the body and significant exposure can increase the risk of being diagnosed with dementia by 21%. Exposer can also increase cardiovascular issues by 70%.

Create your own in home air filter with just a few supplies which can be found at local home stores.

DIY Air Cleaner to Reduce Wildfire Smoke Indoors

Materials



20" X 20" air filter

Suggested rating: MERV 13

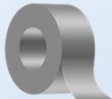
20" X 20" box fan

Only use certified fans with UL or ETL marking (2012 model or newer)



Clamps

or



Duct Tape

or



Bungee Cords

Assembly

1. Attach the air filter to the back of the box fan using either clamps, duct tape or bungee cords.
2. Check the filter for the direction of the air flow (marked on the side of the filter).
3. Replace filters when dirty.

Learn about box fan safety tips:

<https://www.epa.gov/air-research/research-diy-air-cleaners-reduce-wildfire-smoke-indoors#FAQ>

Air Quality Word Search

D I A N V W R B F W X D O O X Y K R Q J
 I N C Q W G W I L D F I R E V S P W R P
 Q D L F I R E A N D S M O K E M A P E N
 W O I G R E O C W Q B T F P N O D N D I
 L O M J B E S A K X X O A A Z K J G H T
 P R A O A N J R W W E Y I R U E Y E L R
 W A T D S H C B S K L N R T D S D J A O
 K I E M T O R O R N A W Q I D U N R G G
 L R C F H U G N U C M L U C A L P M X E
 S X H H M S R M X O B U A U O F Y Y N N
 F O A S A E E O J U I V L L W U S D U D
 A Z N R U G E N P W E Y I A G R L E O I
 I O G S U A N O U P N E T T V D O G F O
 R N E Q C S P X R E T L Y E Q I R M R X
 N E Z P D K K I P O A L I M W O A W P I
 O Z V L G O G D L S I O N A T X N L M D
 W Q I U B E T E E T R W D T Q I G E M E
 G Y B X Y B H R L G M X E T D D E A W P
 P V E M I S S I O N S V X E P E Y D F B
 V W F K G B R S X V N X B R I P Q Z Q J

Particulate Matter	Air Quality Index	Fire And Smoke Map	
Carbon Monoxide	Ambient Air	Indoor Air	Lead
Greenhouse Gas	Emissions	Asthma	Red
Orange	Nitrogen Dioxide	Wildfire	
Purple	AirNow	Ozone	
Sulfur Dioxide	Climate Change	Yellow	
Smoke	Green		

REDUCE AND REUSE WITH BAY MILLS

GROCERY BAGS

Can't recall if that product you like has a recyclable container? Check our bag! Reducing, reusing, and recycling just got easier with these new grocery bags, each one listing precisely how to recycle waste materials at Bay Mills.






FREE TO ALL you can get yourself a bag at Four Seasons grocery store in Brimley, MI. These bags were made possible by the Great Lakes Restoration Initiative and a grant from U.S. Environmental Protection Agency.



BROWNFIELDS PROGRAM UPDATE

OLD BUILDINGS TO BE CLEANED UP WITH FUNDING FROM USEPA, BIPARTISAN INFRASTRUCTURE LAW

The Biological Services Department was awarded two Environmental Protection Agency (EPA) Clean Up grants over the past two years as well as additional funding through the Bipartisan Infrastructure Law (BIL) and Indian Health Service to address environmental contamination on properties owned by the Tribe.

-  **Chippewa Landing:** Plans are to demolish the buildings containing asbestos and lead paint, and excavate the petroleum-contaminated soil caused by an underground leaking pipe. The pipe was removed several years ago and the soil and groundwater contamination has declined over time. This project has been delayed but it is hoped it will still be completed this fall.
-  **Silver Dome:** Contamination both under the Silver Dome and directly south of the building have been assessed and the tribe has been working on addressing these as funding has allowed. An EPA cleanup grant will be awarded in October 2024 to fund the deconstruction of the metal Silver Dome building and demolition of the log building beside it. The contamination in the soil will also be excavated out with new clean soil replacing it. This project is expected to take up to three years.
-  **Former Hardware Store and Laundry/Hair Salon/Apartment Buildings in Brimley:** The Biological Services Department is working with Tribal Administration to address these two buildings. The asbestos was removed in July and the buildings will be demolished in August. There is contamination in the soil near the hardware store and this is planned to be excavated out during the demo process.
-  **Plantation Rd Dump Site Clean Up:** Biological Services is working in partnership with the Forest Service to assess the old Superior Township Dump, located across Plantation Rd from the water tower. Studies are being conducted to try to better understand levels of contamination present in the soil and groundwater. The USFS is seeking funding to remove this dump and rehabilitate the stream that flows through it. It is unknown at this time if funding will be available.
-  **Sugar Island:** A dump site on Sugar Island that covers one acre in size is expected to be cleaned up this fall if a contractor can be found to complete the work.



Left: The former hardware store and laundry/hair salon/apartment buildings in Brimley received cleanup funding. Right: Chippewa Landing cleanup planned.

If you have any questions, or have a dump site or environmental concern to report, please contact Jennifer Satchell at jmsatchell@baymills.org or (906) 248-8655.

GREAT LAKES FISHERIES PROGRAM

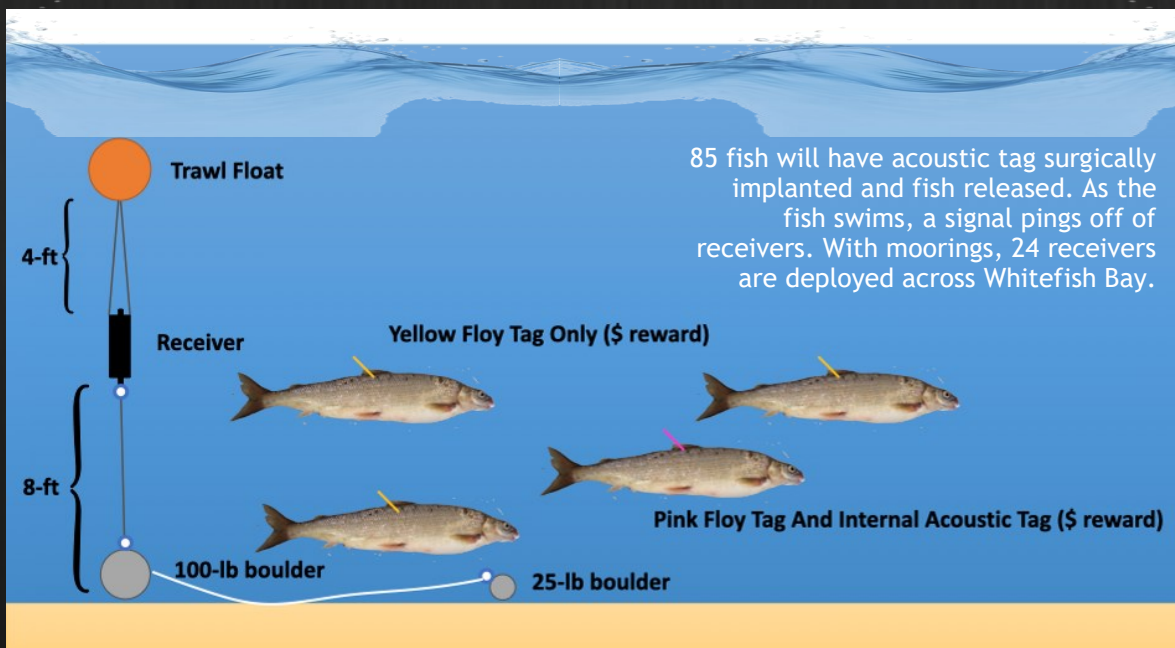
IDENTIFYING MOVEMENT PATTERNS OF ATIKAMEGWAG (LAKE WHITEFISH) FOR TREATY RIGHTS AND RESOURCE PROTECTION

Atikamegwag support recreational, subsistence, and commercial fisheries within the 1836 Treaty Waters of the Great Lakes. Bay Mills Indian Community continues to practice its retained treaty rights in each of these fisheries, and especially in nearby Whitefish Bay, Lake Superior. Whitefish Management units were created within the Great Lakes to help manage these fisheries. Two management units make up the 1836 Treaty Waters of Whitefish Bay. WFS-07 is to the west, is larger spatially and in Atikamegwag population abundance, and extends beyond the bay into the open waters of Lake Superior. While most of the documented spawning activity occurs within Whitefish Bay, some is documented outside of the bay. WFS-08 is the smaller eastern unit closest to the Bay Mills Indian Community. Mixing of Atikamegwag between WFS-07 and WFS-08 does occur, however, the extent of this mixing and each management units' contributions to the commercial fishery is not known. Acoustic telemetry, a technology that uses sound to track the movements of fish, will be used to determine 1) the degree of mixing between management units WFS-07 and WFS-08 for populations of Atikamegwag, 2) spawning site fidelity (the habit of returning to the same place year after year to spawn for Atikamegwag in WFS-07 and WFS-08, 3) the relative contribution to the commercial fishery from Atikamegwag associated with specific spawning reefs.

Learning this information about Atikamegwag in Whitefish Bay will help fisheries managers determine if combining population models for WFS-07 and WFS-08 is prudent. Fish movement and habitat use data can also be incorporated into the current statistical catch at age models that inform management, and help managers better understand WFS-07's and WFS-08's contributions to the commercial fishery.

The project uses acoustic transmitters (the tags to be surgically implanted into fish and send out a transmission or "ping" at set time intervals), and the acoustic receivers (stationary devices that listen record the "pings" or transmissions from tags in the fish, and record the tag's unique ID, date, and time).

Staff tested the equipment in summer 2024 and successfully retrieved the test tags and receivers via grappling in waters as deep as 130 ft. In the coming months 24 acoustic receivers and their moorings will be deployed in Whitefish Bay (see map). Then staff, in cooperation with tribal fishers, will begin the live-capturing Atikamegwag to be tagged and surgically implant acoustic tags. About 100 Atikamegwag will



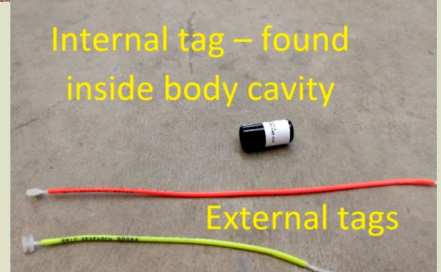
WHAT TO LOOK FOR: EQUIPMENT

If you encounter an acoustic receiver and its mooring while out on the water, please contact Simon Freeman at the contact information provided, or at the phone number on the orange buoy.



WHAT TO LOOK FOR: TAGGED FISH

Check your catch! If you capture an Atikameg with a pink or yellow tag sticking out of its back, please call the number on the tag. A cash reward is available in return for the tag and information on where you captured the fish. Also, check the inside of any fish with the external pink tag for an acoustic tag.



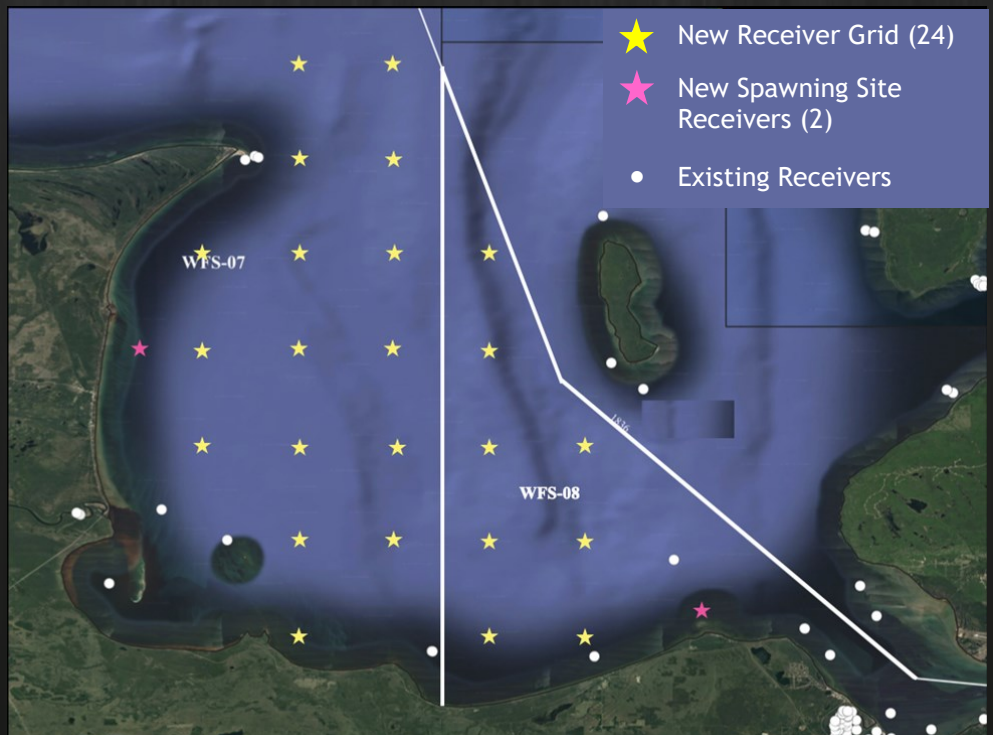
Contact Simon Freeman sfreeman@baymills.org 906-248-8658.

receive a non-acoustic, standard T-Bar tags with a yellow marker. An additional 85 Atikameg will receive a pink tags as well as surgically implanted acoustic transmitter inside their body cavity as well. Check your catch! If you see a yellow or pink tag on an Atikameg, call the number on the tag ASAP! Check the inside of the fish for an acoustic tag, save all tags, and record where and when you captured the fish. A cash reward is available for all tags returned to BMIC Biology staff!

In spring 2025, the acoustic receivers and moorings will be retrieved from the lake and the data downloaded. The data will then be analyzed to track Atikameg movements, gauge spawning site fidelity, and the importance of specific reefs to the population.

For more information about this project or other fisheries questions, please contact Jason Smith, jbsmith@baymills.org 906-248-8653 or Simon Freeman sfreeman@baymills.org 906-248-8658.

Explore the Great Lakes Acoustic Telemetry Observation System (GLATOS). To learn more, please visit <https://glatos.glos.us/>.



Right: Map of whitefish management units, WFS-07 and WFS-08, boundaries outlined in white. White circles denote approximate locations of existing receivers, yellow stars show new receiver locations, and pink stars show new receiver locations in known spawning areas (also likely tagging locations).

STAFF CHANGES in BIOLOGICAL SERVICES

Kylie returns to us for another summer! She is from Mason, MI and currently pursuing a degree in Fisheries and Wildlife Management at LSSU. This summer Kylie is assisting the inland fish and wildlife program with bat and sturgeon surveys. In the future, she plans to pursue a career in wildlife management.

Amanda is from the Sault and has dedicated 24 years of her life to conducting fisheries research in the upper Great Lakes. Currently, she's also the Native American advisor at Malcolm High School. This summer to is most excited to work on manoomin efforts. In future, Amanda hopes to continue to encourage students to view science studies though a TEK lens.

Janine is from Brimley, MI and is a Bay Mills Member. She graduated from BMCC last spring in Liberal Arts and will be attending LSSU this fall to study Psychology. This summer she is most excited to learn about native and invasive plant species and how to better care for the environment. In the future, she intend to pursue a career in psychology/ psychiatry.

Brittany is from Lakeview, MI and student at LSSU majoring in conservation biology and minoring in marine and freshwater science. Brittany is excited to better the environment and teach others how. In the future, she hopes to study marine and coastal sciences in Australia.



Janine, Brittany, and amphibious friend.



Simon, new Great Lakes fisheries researcher.

Simon is originally from Corunna, Michigan but now calls Sault Ste. Marie home with his wife Halle and their dog Daphne. He completed a Fisheries Management at LSSU in 2022 and hopes to earn a Master's degree in Great Lakes fisheries biology and/or management. Some of his favorite memories included recreationally fishing with his dad for Lake Whitefish in northern Lake Huron. He also fondly remembers travelling to this area for vacations, exploring the waters and beautiful shoreline near Bay Mills Indian Community, and eating fresh whitefish likely caught by Bay Mills fishers. He was always asking the how, what, and why questions while on the water and especially when seeking these fish. Now, Simon is very thankful to join BMIC Biological Services team and ask those same questions while conducting meaningful research and assessments on important fishes in waters that have always been special to him. He is especially excited to lead the new Atikameg (Lake Whitefish) acoustic telemetry project, identifying the movement patterns of Atikamegwag in Whitefish Bay for treaty rights and resource

protection. Simon says he has learned so much in my first few months at BMIC about the community and the Great Lakes' resources, such as Atikamegwag, that are so important to it. Simon thanks all of the teachers he has had so far! In the future, Simon hopes to work as Great Lakes fisheries biologist for a tribal biology department; maybe even right here, with the great community of Bay Mills.

Welcome, Simon!



Bay Mills Indian Community
Biological Services Department
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This newsletter funded by the
Great Lakes Restoration
Initiative.

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