BAY MILLS INDIAN COMMUNITY

BIOLOGICAL SERVICES NEWSLETTER

WINTER 2021 ISSUE 12

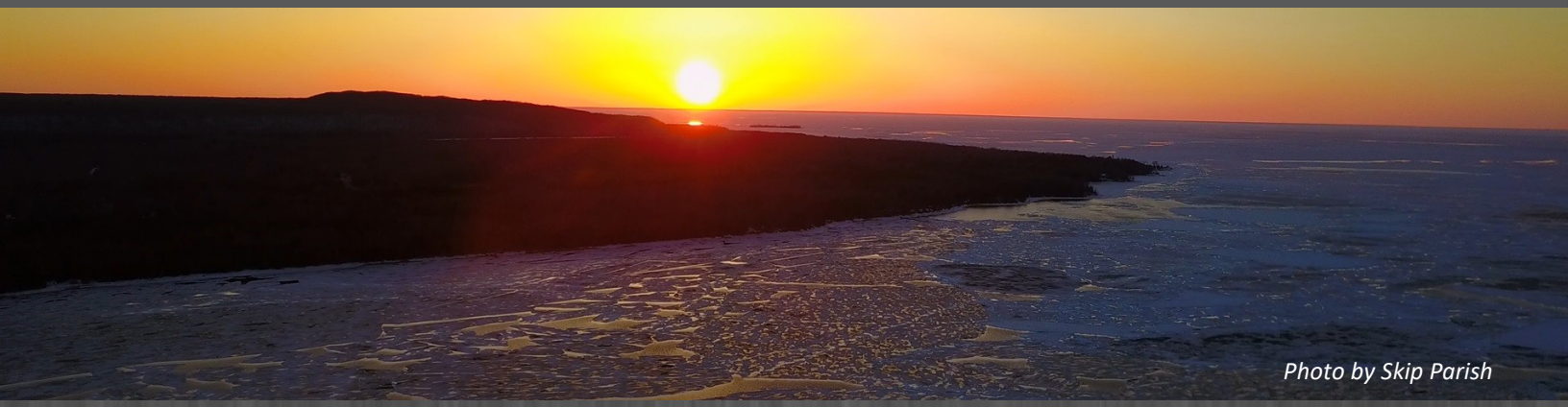


Photo by Skip Parish

INSIDE THIS ISSUE

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

IN THE NEWS: Confederated Salish and Kootenai Tribes Reclaim Legacy of Bison Conservation

To view the full article by Patrick Shea, visit Native News Online.

A package of bills passed just before the new year returned the National Bison Range to the Confederated Salish and Kootenai Tribes (CSKT) from the U.S. Fish and Wildlife Service. The Tribes had long been fighting to regain ownership of the 18,800-acre wildlife refuge in western Montana, which was unlawfully taken from the heart of their reservation.

Teddy Roosevelt's administration set aside the National Bison Range in 1908 with the intention of saving the bison from extinction. But the property was improperly seized from the Flathead Reservation by the federal government through the Dawes Act of 1887— the practice of allotment: dividing land between tribal members and selling off the surplus to homesteaders.

The modern-day National Bison Range lies within the CSKT's rightful property about an hour north of Missoula, MT, per their 1855 treaty with the United States. The herd is descended from a group of bison originally brought to the reservation by the Tribes' forebears more than 150 years prior.

In 1971, court ruling found in favor of the Tribes, but it was another 50-year struggle to complete the transfer process. Now the Tribes' biologists will take over research and management of the herd and lands. The bison range remains open to the public.

Photo by David Stalling

INLAND WILDLIFE PROGRAM


Marten


Black bears


Moose


Raccoon

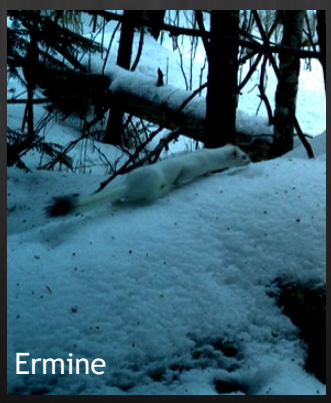

White-tailed deer


Fisher

BAY MILLS WILDLIFE SAYS ‘CHEESE!’ ON TRAIL CAMERAS

A large number of species exist throughout the Bay Mills Indian Community but many are elusive and rarely seen. In order to best study these species, we try to use techniques that are as non-invasive and rewarding as possible for the time that is devoted. One of the best options is to use camera traps. Game cameras can provide a large amount of information on species, including location, population size, presence of young, interactions between species, and habitat preference, without having to actively capture an animal or see them in person.

Thanks to our widespread camera traps over many years, BMIC Biology has been able to identify the occurrence of a wide range of species within the area. Data from these photos are now being analyzed to determine further information about these animals.


Ermine


Red Fox pair


Coyote

GREAT LAKES FISHERIES PROGRAM

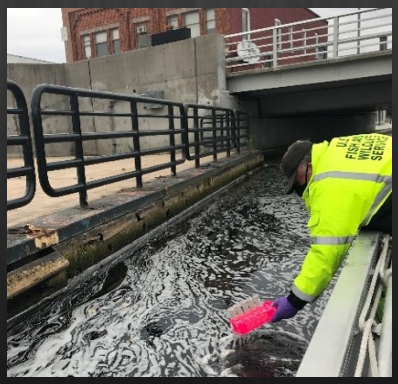
SAMPLING eDNA TO DETECT SPAWNING WHITEFISH IN RIVERS

Coregonines (whitefish and cisco) are a diverse group of fishes that are key to sustaining the Great Lakes food web and its fisheries. The relationship between the Anishinaabe People and the diverse fish group is critical and ancient. Adikameg (Lake Whitefish) and Otoonapii (Ciscoes) are important to tribes as they provide a nutritious food source and support several commercial and subsistence fisheries. However, much of the historical diversity of this group has been lost and recent declines of Lake Whitefish harvest in lakes Michigan and Huron highlight a need for restoration.

A guiding principle of conservation and restoration science that can be applied by fishery managers is that resilient and sustainable fisheries are built on highly diverse populations. One example of diversity is variation in aspects of spawning- either timing or types of habitats used. In the past, Lake Whitefish and Cisco spawned in habitats ranging from shallow coastal areas to tributaries. However, over the last 150 years, tributaries have become among the most degraded habitats available for these fishes and their use as spawning locations declined. Recently, Lake Whitefish spawning runs observed in Green Bay tributaries suggest that this habitat is being utilized. Additionally, Cisco have been observed around 40 km upstream in the Spanish River, Lake Huron and less than 1 km upstream in the Boardman River, Lake Michigan outside of the spawning season. However, the extent of tributary use throughout the Great Lakes basin is unknown and represents a gap in life-history knowledge for Lake Whitefish and Cisco.

Left: Tributaries of known historic whitefish spawning runs (by Matt Herbert, TNC). Right: Map of water sampling for eDNA (by Chris Olds, USFWS).

Sampling environmental DNA (eDNA; DNA sampled from water or soil without any sign of the source organism) is used in assessment programs including invasive species in the Great Lakes. The presence/absence of these coregonines during potential spawning times will help determine the extent of tributary use across the basin. In 2020, a pilot project was implemented in 5 tributaries across lakes Michigan and Huron and plans are underway to add at least one Lake Superior tributary in 2021. The goal is to demonstrate that eDNA can detect coregonines in Great Lakes tributaries and then evaluate whether coregonine spawning has been occurring undetected in some tributaries. We will sample eDNA to determine if native Lake Whitefish and/or Cisco are present in tributaries throughout the Great Lakes where traditional efforts (netting, electrofishing, etc.) may be less effective. If successful, this pilot project may lay the groundwork for broader eDNA sampling across the Upper Great Lakes tributaries for additional priority species. Ultimately this knowledge will help partners prioritize some rivers for protection to enhance restoration or recovery of these important species.



This project includes USGS, USFWS, Bay Mills, Sault Tribe, Michigan State University and The Nature Conservancy partners.

US Fish & Wildlife Biologists collect water samples for eDNA (Photo credit: Chris Olds, USFWS).

WATER QUALITY PROGRAM UPDATE


Photo by Biological Services

Waishkey River Watershed Management Plan Finalized

The Waishkey River Watershed Management planning team was created in 2015, with the goal of protecting and restoring the ecological integrity of the Waishkey River. This plan lays out the environmental challenges the river faces, as well as a path forward towards better water quality through a series of projects.

After an open house and public scoping of the draft, the watershed management plan has been approved by Bay Mills Council. The plan now goes on to the USEPA and EGLE for further reviews. The watershed plan is currently available on the Biology Dept website. http://www.baymills.org/biologicalservices-waishkey.php Contact Aubrey Maccoux-LeDuc or Brian Wesolek for more information amaccoux-leduc@baymills.org or bwesolek@baymills.org (906) 248-6852.

These photos represent some of the challenges faced by the Waishkey watershed — E. coli, poorly-managed farms, invasive species, road-stream crossings, and poorly-managed septic system. Future implementation of these projects will benefit water quality. Waishkey River watershed partners will continue to evolve and adapt management plan to conserve and protect the Waishkey River Watershed, for now, and for the benefit of the next seven generations. This management plan is not a legal document. It is a set of goals, objectives, and plans that serves as guidance for future action to protect the Waishkey River Watershed. We hope you will consider taking part in the effort to protect this area and restore areas of degradation for the long-term benefit of both human and non-human relatives.

Nibiish Naagdowen, this is how we will "take care of the water."


Photo by Biological Services

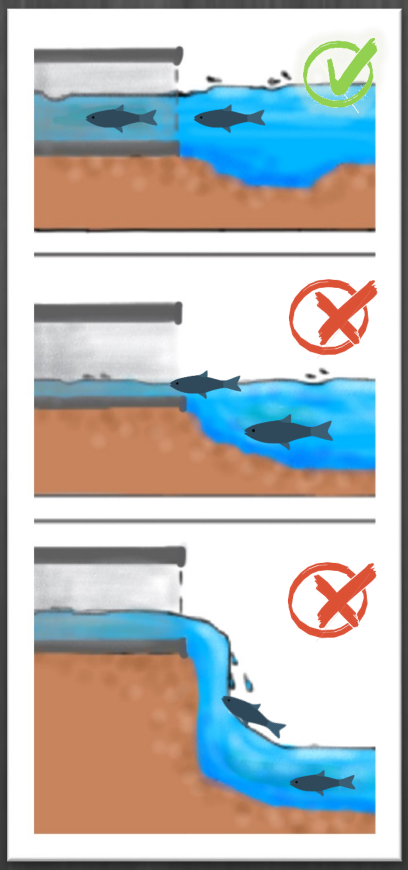

Photo by Bad River Band


Photo by Biological Services

Photo by US Forest Service

Photo by US Forest Service

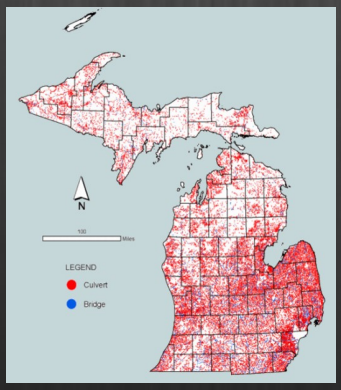
MORE THAN A TUBE UNDER THE ROAD: WHY CULVERTS MATTER



Culverts or road stream crossing structures occur at any of the numerous instances where roads, railroads, trails, pipelines, or any other crossing of a stream or river to move people, livestock, materials, or other things from one side of a stream or river to the other. These structures are extremely important for aquatic passage, they can slow down water velocity to allow fish to safely pass and help decrease debris accumulation.

Stream crossings that are improperly-designed or installed, structurally failing, or no longer accommodating current stream conditions affect stream health. They can affect stream hydrology, prevent fish and other aquatic animals from reaching up-and downstream reaches, increase water temperatures, and are sources of nutrients, sediments, bacteria, heavy metals, and other nonpoint source pollutants.

Compounding existing problems, climate change has brought heavy storms and flashy floods to the EUP in recent years, creating conditions some culverts were not designed for. Biologists and engineers alike now recommend that crossings be designed to handle "100-yr floods."



Right: Michigan culverts and bridges. Note the high number of culverts in EUP despite the low road density.

DID YOU KNOW?

60,700 There are an estimate of over 60,700 culvert crossings in Michigan

60% Studies have shown that over 60% of streams pose passability issues to fish and other aquatic organisms (*Januchowski-Hartley et al 2013)*

Sources

Great Lakes Stream Crossing Inventory. (n.d.). Retrieved January 21, 2021, from https://great-lakes-stream-crossing-inventory-michigan.hub.arcgis.com/

Januchowski-Hartley, S.R., McIntyre, P.B., Diebel, M., Doran, P.J., Infante, D.M., Joseph, C. and Allan, J.D. (2013), Restoring aquatic ecosystem connectivity requires expanding inventories of both dams and road crossings. Frontiers in Ecology and the Environment, 11: 211-217. https://doi.org/10.1890/120168

COMMUNITY AND THE ENVIRONMENT

BMIC Waste Transfer Station is **MOVING** summer 2021

The Waste Transfer Station, recycling trailers, and trash compactor will be moving up to the Plantation Rd this summer. This will make room for a new Boys and Girls Club center on Lakeshore Dr. Updated information on waste disposal services will be posted on the BMIC website and Bay Mills News when the moving date is finalized. Although this will be a summer of transition to the new location, the following waste disposal services will continue to be offered:

- ◊ Trash disposal
- ◊ Recycling (paper, cans, plastics, glass, cardboard)
- ◊ Old tires (summer-Oct 15)
- ◊ Household hazardous waste (special event)
- ◊ Old TV & eWaste (special collection event)

VOLUNTEERS CLEANUP BAY MILLS STREAMS, WOODS, AND WETLANDS

On October 15, 2020 two dozen dedicated volunteers removed trash from streams, wetlands, and forests around Bay Mills. Volunteers braved chilly October winds and cold autumn streams to remove mattresses, appliances, car parts, tires, broken glass, and more. In Just three hours, more than 2500 pounds of debris was removed and properly disposed of! Chi-Miigwetch to all the volunteers and the Michigan United Conservation Clubs for making this event possible.

24 Volunteers

0.5 Acres cleaned

2500 lbs of trash removed

Photos by Biological Services and Michigan United Conservation Club

FEATURED INVASIVE SPECIES: Spotted Lanternfly

ANOTHER TINY BUG DEVASTATING TREES

Left: a walnut branch with spotted lanternfly nymphs. Inset: Adult spotted lanternfly.

Photo by Eric R. Day, Virginia Polytechnic Institute and State University; Pennsylvania Department of Agriculture , Bugwood.org

Spotted Lanternfly (*Lycorma delicatula*)

Spotted Lanternflies are an invasive plant-sucker native to China, India, Vietnam. This insect has the potential to greatly impact agricultural crops such as grapes, hops, and hardwoods. The insect's honeydew excretions also create a nuisance for homeowners. There are currently no known infestations of Spotted Lanternfly in Michigan. However, in November 2020, dead lanternfly stowaways were discovered in a shipment to a Michigan business.

Why it's a Problem

Spotted Lanternflies use piercing-sucking mouthparts to feed on the sap in trunks, branches, twigs and leaves. The oozing wounds will leave a greyish or black trail along the bark of the plant. As it digests the sap, the insect excretes a substance known as honeydew. Honeydew and sap fall to the ground where it provides a medium for fungal growth. Fungal growth can cover leaf surfaces and ground cover below the plant. Plants with heavy infestations may not survive— a particular concern for agriculture.

How it Spreads

Spotted Lanternflies arrived on a shipment of stone from Asia to Pennsylvania with lanternfly eggs in 2014. Movement of Spotted Lanternflies happen via plants, plant-based materials and outdoor household items that they have attached themselves to. They also may be transported by/lay eggs on vehicles that have sat in parking lots near infested areas.

Ways to Control Hemlock Woolly Adelgid

At a state level, Pennsylvania Department of Agriculture imposed a quarantine to regulate the movement of plants, plant-based materials and outdoor household items. On a very local level, management options include manual methods to capture and kill the nymphs and adults.

John M. Randall, The Nature Conservancy, Bugwood.org; Kelly Oten, North Carolina Forest Service, Bugwood.org

STAFF CHANGES in BIOLOGICAL SERVICES

Angela Johnston of Bay Mills joined the Biology team in Oct 2020 as a part-time Environmental Project Specialist. She is also currently working on a (BMCC) Bay Mills Community College grant as a Youth Sustainable Agriculture coordinator. As a part of the Biology team, she will be working on addressing clean air issues such as radon education, testing, and mitigation. Angie has her Bachelor's in Community Development w/ minor in Psychology from (CMU) Central Michigan University and is currently working on a Master's of Public Administration from CMU. Previous work experience includes several years at the Bay Mills Health Center working in the Community Health Department on Policy, System, and Environmental Changes. Angie has studied various topics, including health science, environmental health, health psychology, and community development in rural locations.

Angie Johnston Environmental Project Specialist (906) 248-8399 office ajohnston@baymills.org

Above: Angela Johnston

Above: Jennifer Parks

Jen Parks joined the Biology Dept last week as the Environmental Coordinator. She will be coordinating work on solid waste streams, oil and hazardous materials response planning, brownfields planning and response, green infrastructure planning, and septic systems (the GAP and Brownfields grants). Jen received a bachelor's degree in Environmental Conservation from Northern Michigan University and a Master's degree in Natural Resource Based Parks and Recreation Management from Michigan State University. Jen grew up on a small farm in northwest lower Michigan and has worked and volunteered with a variety of government agencies and non-profit organizations. She spent twelve years living in southern Arizona where she managed a State Natural Area with Arizona State Parks. Jen and her family love being back in Michigan.

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Great Lakes RESTORATION

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