



Barrier to keep Silver, Bighead carp from Great Lakes allows in other invaders

The electric barrier in the Chicago River meant to keep invasive silver and bighead carp from reaching the Great Lakes does not block other types of invasive species, according to a recent study. The Illinois-Indiana Sea Grant organization learned in a scientific study that other sorts of invaders may not be affected by the electric barrier technology. That means risk for damage to the Great Lakes food web remains from other aquatic invertebrates, such as mussels, crayfish, snails, zooplankton and more.

“Silver and bighead carp pose a huge risk to the Great Lakes, but many other species, most of which are invertebrates, can be serious

invaders and we also need to prevent them from spreading either to the Mississippi River Watershed from the Great Lakes or the opposite,” said Reuben Keller, a Loyola University Chicago biologist who led the research.



Keller’s team studied two barrier technologies on a sample of invertebrate species in a lab setting.

The first used electricity like the barrier in the Chicago Sanitary and Ship Canal near Joliet, Illinois, and the second by emitting carbon dioxide, which is being researched and considered as a backup option to stop the invasive carp.

The research focused on two invertebrates, the red swamp crayfish and a tiny amphipod crustacean called *Hyaella azteca*. Researchers found even at electrical charges 400% higher than the barrier, no organisms died – though some were stunned or experienced equilibrium changes.

The carbon dioxide barriers bubbled the gas into the water as a deterrent, and the project tested

Barrier allows in other invaders
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Ludington Regional Fishery Workshop Feb 18

The 2023 Ludington Regional Fishery Workshop will include presentations from scientists, educators, and fishery managers. Topics will include mass marking results, alewife survey methods, and water level expectations in addition to updates on stocking levels and other fishery management issues.

The location is West Shore Community College, Administration and Conference Bldg, 3000 N Stiles Rd, Scottville, MI 49454. 9:00 -2:15 p.m. Doors open at 8:30 a.m. [REGISTER](#) online or by phone by 5:00 p.m. on Tuesday, February 14.

This year's workshop will also provide time for small group discussions with presenters over the lunch break for those who attend in person. Those who cannot attend in person can attend

presentations virtually using Zoom. Advance registration for in-person attendance is \$35/person and includes lunch. If you have not attended this workshop in the past, you will need to [create an account](#) to register online.

For those who do not register in advance, walk-in registration is \$40/person and lunch may or may not be included depending on availability. Advance registration is free for the virtual meeting (which includes morning and afternoon sessions). You must register in advance for the virtual meeting because a Zoom link will be sent to you before the meeting begins.

If you would like to register by phone or if you have questions about registration please contact Cara Giammalva at West Shore Community College (231) 907-8976, cemitchell@westshore.edu ✧

2023 Sturgeon Spearfishing Season opened Feb. 11

[Season Forecast Now Available](#)

MADISON, Wis. – The Wisconsin DNR stated the sturgeon spearfishing season opened on February 11, giving spearers a chance to harvest Wisconsin's largest and oldest fish



species.

With one of the largest lake sturgeon populations in North America, the Winnebago System supports an annual spearfishing season that will run for a maximum of 16 days (February 26) or until any of the predetermined harvest caps have been met. This year's harvest caps have been set at:

Waterbody	Juvenile Females	Adult Females	Males
Upriver Lakes	70	79	246
Lake Winnebago	280	714	985
Winnebago System	350	793	1231

If harvest caps are met early, a closure notice will be posted to the DNR's [Winnebago System sturgeon spearfishing webpage](#).

Season Predictions

The sturgeon spearfishing season length is usually dictated in part by water clarity of the Upriver Lakes and Lake Winnebago. Warmer temperatures this winter prevented biologists from safely conducting water clarity assessments until this week. There is an average of 13.0 feet of water clarity around Lake Winnebago with generally clearer water on the eastern

shores as well as farther from shores along the west side of the lake.

With better water clarity this year, we should see a good harvest, though the warm weather could deteriorate ice conditions which may reduce spearfishing success. Recorded low chironomid densities (lake fly larvae/red worms) this year may also impact sturgeon distribution around Lake Winnebago.

Spearers can find the full water clarity report, season forecast and daily harvest updates on the [Winnebago System sturgeon spearfishing webpage](#) and by [signing up](#)

[for email updates](#).

Registration Information

The DNR reminds spearers that once they have successfully speared a sturgeon, the tag must be validated by tearing off the bottom portion. The sturgeon must then be brought to [an official registration station](#) and registered by 2 p.m. on the day it was speared.

Any sturgeon harvested from Lake Winnebago must be registered at one of the registration stations on Lake Winnebago. Likewise, any sturgeon harvested from lakes Poygan, Butte des Morts or Winneconne must be registered at one of the Upriver Lakes registration stations.

This year's registration stations have returned to their pre-pandemic locations. Some locations will continue to offer the drive-thru registration option. Please check the [2023 sturgeon spearfishing regulations](#) for specifics.

Stay Safe on the Ice

Spearers are also reminded that no ice is 100% safe. Check with local fishing clubs and conservation groups for local ice condition information as the DNR does not monitor ice conditions. [Get tips for staying safe on the ice from the DNR's ice safety webpage](#).



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Position Statement

Representing a major interest in the aquatic resources of the Great Lakes states and the province of Ontario, the Great Lakes Sport Fishing Council is a confederation of organizations and individuals with a concern for the present and future of sport fishing, our natural resources and the ecosystem in which we live. We encourage the wise use of our resources and a search for the truth about the issues confronting us.

Inland Seas Angler

GREAT LAKES BASIN REPORT

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Fish and Wildlife spring hearings happening virtually **April 10-13**

MADISON, Wis. – The Wisconsin Conservation Congress (WCC) and DNR are inviting the public to get involved in April during the annual spring hearing public input opportunity.

The WCC/DNR Spring Hearings focus on natural resource-related questions and proposed rule changes. They will again be held in a virtual format, as they have been since 2020. This year's online questionnaire will be open from April 10 at noon through April 13 at noon via the [Wisconsin Conservation Congress Spring Hearing webpage](#).

New this year will be open houses in each county to allow the public to ask questions and learn about resource management in their neck of the woods. Open houses will be held from **April 3 through April 6**. More details will be made available on the [DNR's Events Calendar](#) and [Spring Hearing webpage](#) as soon as details are finalized.

DNR staff and WCC delegates will be on hand at these open houses to discuss local issues of importance, answer questions from the public and open a dialogue between the public, the DNR and the WCC about areas of interest and concern.

In addition, the WCC will hold elections for their delegates at each of these open houses. Two of the five WCC seats will be up for election in each county.

The [Wisconsin Conservation Congress](#) is the only statutory body in the state where the public elects delegates to advise the Natural Resources Board and the DNR on responsibly managing Wisconsin's natural resources for present and future generations. The Congress accomplishes this through open, impartial, broad-ranged actions.

Learn more about the WCC and how to become involved in resource management decisions on the [Wisconsin Conservation webpage](#).

DETAILS - OPEN HOUSES

WHEN: April 3-6, 2023

WHERE: Location and time details for each county to be posted soon to the [DNR's Events Calendar](#) and [Spring Hearing webpage](#).

DETAILS - SPRING HEARINGS

WHAT: Open public feedback period for Wisconsin DNR/Wisconsin Conservation Congress Spring Hearings

WHEN: Noon April 10 - noon April 13

WHERE: Complete the online questionnaire on the [Wisconsin Conservation Congress Spring Hearing webpage](#)

Wisconsin Conservation Congress Update for Meeting Agendas and Minutes. The Migratory Committee meets **Feb 27, Agenda**. Spring District Meetings begin March 1, [Schedule](#). More information is available here: [now available](#). ✧

2023 Black Lake sturgeon season results

After only 65 minutes of fishing, this year's sturgeon season on Black Lake (in Cheboygan and Presque Isle counties) ended at 9:05 a.m. Saturday, Feb. 4. The season, which included spearing and hook-and-line fishing, was scheduled to run February 4-8, or until the harvest quota of six lake sturgeon had been reached.

Anglers initially were allocated a season quota of seven sturgeon, but the Michigan DNR set the harvest limit at six fish. This action helps accommodate the expected number of anglers and anticipates the possibility of near-simultaneous harvest of more than one fish.

There were 630 registered anglers this year, including a good number of supervised youth. According to the DNR, the harvested sturgeon ranged in size from 32 inches to 55.5 inches long and 6.4 pounds to 35.5 pounds.

- The first fish was a 49-inch male that weighed 30 pounds.
- Fish number two was a 55.5-inch female that weighed 35.5 pounds.

- Fish three was a 54.3-inch male that checked in at 32 pounds.
- Fish four was a 32-inch immature fish that weighed 6.4 pounds.
- The fifth fish was a 54-inch male that weighed 34 pounds.
- The sixth fish was a 39-inch male that weighed 11.8 pounds.



Participating anglers were notified of the season closure in a variety of ways, mainly from nearly instantaneous text alerts and ice shanty visits from DNR personnel. All methods were used to indicate the season's end within minutes of the final fish being harvested. DNR law

enforcement officials and other department personnel again were embedded in the on-ice fishing communities and were able to quickly and safely report harvested fish this year, as well as to quickly contact all lake sturgeon anglers on the ice and close the season.

Rehabilitation of lake sturgeon in the Cheboygan River watershed is a cooperative effort involving the DNR, the Black Lake Chapter of Sturgeon For Tomorrow, Michigan State University, Tower-Kleber Limited Partnership, the Bay Mills Indian Community, the Grand Traverse Band of Ottawa and Chippewa Indians, the Little River Band of Ottawa Indians, the Little Traverse Bay Band of Odawa Indians and the Sault Ste. Marie Tribe of Chippewa Indians.

For more info on lake sturgeon in Michigan, visit [Michigan.gov/Sturgeon](#). To learn more about all fishing opportunities statewide, go to [Michigan.gov/Fishing](#). ✧

Minnesota DNR seeks comments on:

➤ Duluth area fisheries management plans

The Minnesota Department of Natural Resources invites anglers and others to comment through Wednesday, March 15, on fisheries management plans for several waters in Carlton and St. Louis counties.

Fisheries management plans will be reviewed for the following waters in these counties:

- Clearwater Lake – revised plan to increase trout stocking rate and split stocking between spring and fall seasons.
- Little River – initial management plan including a proposal to introduce brook trout to the river.
- South Branch Whiteface River (also known as Hornby Junction Creek) – initial management plan including a proposal to introduce brook trout to specific reaches of the river.
- Talmadge River – initial management plan including a proposal to introduce brook trout to specific reaches of the river and

extend trout designation to include headwater reaches of the stream.

The DNR will use comments and suggestions from the public as it finalizes fisheries management plans that identify specific management activities planned for these lakes over the next five to 20 years. The plans include a variety of fisheries information, including summaries and evaluation of past management activities and regulations and background information such as water chemistry and water temperature, species presence, stocking, and historic catch rates from previous fisheries surveys.

The plans may also identify biological and social factors that may limit a fishery's potential and seek to address limiting factors prescribing science-based management tools when biologically, fiscally and socially appropriate.

Comments and suggestions from the public are important in identifying angler values and social considerations to include in plans. Public input is due by March 15. Anyone can request information and share thoughts about fisheries management by contacting the Duluth area fisheries office by email at duluth.fisheries@state.mn.us, phone at 218-302-3264, or by U.S. mail at Duluth Area Fisheries, 5351 North Shore Drive, Duluth, MN 55804. Information about Duluth area lakes is also available on the [DNR LakeFinder \(mndnr.gov/lakefinder\)](http://mndnr.gov/lakefinder).

Comments and suggestions for managing other lakes and streams in the Duluth work area are welcome at any time and will be considered when those plans are due for review. More information about the Duluth area fisheries office is available on the [DNR website \(mndnr.gov/Areas/Fisheries/Duluth/index.html\)](http://mndnr.gov/Areas/Fisheries/Duluth/index.html). ✧

➤ Grand Rapids area fisheries management plans

The Minnesota DNR invites anglers and others to comment through Friday, **March 17**, on fisheries management plans for several lakes in the Grand Rapids area.

Fisheries management plans will be reviewed for the following lakes in Itasca and western St. Louis counties: Ball Club, Balsam, Bluewater, Caribou, Coon-Sandwich, Dixon, Hart, Jay Gould and Little Jay Gould, Lawrence, Longyear (near Chisholm), Nashwauk, Noma, North Star, Prairie, Pickerel (near Side Lake), Round (near Big Fork), Shallow, Stingy, Trout (near Wabana).

The DNR will use comments and suggestions from the public as it finalizes fisheries management plans that identify specific management activities planned for these lakes over the next five to 20 years.

The plans include a variety of fisheries information including summaries and evaluation of past management activities and regulations; background information such as water chemistry and water temperature; species presence, stocking, and historic catch rates from previous fisheries surveys.

The plans may also identify biological and social factors that may limit a fishery's potential and seek to address limiting factors by prescribing science-based management tools when biologically, fiscally and socially appropriate.

Comments and suggestions from the public are important in identifying angler values and social considerations to include in plans. Public input is due by March 17. Anyone can request information and share thoughts about

fisheries management by contacting the Grand Rapids area fisheries office by email at grandrapids.fisheries@state.mn.us, phone at 218-328-8835, or by U.S. mail at Grand Rapids Area Fisheries, 1201 East Highway 2, Grand Rapids, MN, 55744.

Information about Grand Rapids area lakes is also available on [DNR LakeFinder \(mndnr.gov/lakefinder\)](http://mndnr.gov/lakefinder).

Comments and suggestions for managing other lakes and streams in the Grand Rapids work area are welcome at any time and will be considered when those plans are due for review. More information about the Grand Rapids area fisheries office is available on the [DNR website \(mndnr.gov/Areas/Fisheries/GrandRapids/index.html\)](http://mndnr.gov/Areas/Fisheries/GrandRapids/index.html). ✧

Starting March 1, residents will pay \$13 for Recreation Passport

Passport gives year-round vehicle access to state parks and other outdoor recreation, and an easy way to help protect natural resources for generations

Packing up for a camping trip. Fishing from your favorite pier. Parking the car, ready to enjoy thousands of miles of motorized and nonmotorized trails or drop your boat in the water. .

Those are just a few outdoor amenities and experiences that start with the Michigan Department of Natural Resources' valued-packed Recreation Passport, which gives year-round vehicle access to 100-plus state parks and recreation areas, more than 1,000 state-managed boating access sites, 140-plus state forest campgrounds, and parking at thousands of miles of trails and other outdoor spaces.

Effective March 1, the Recreation Passport resident vehicle fee increases from \$12 to \$13 (and from \$6 to \$7 for motorcycles) – the first such increase since 2020.

The moderate fee change is a result of a statutory provision that ensures Recreation Passport funding keeps pace with the economy. Basically, the law says that the DNR does not determine the cost of the Recreation Passport; instead, fee adjustments are based on the Consumer Price Index, as determined by the federal Bureau of Labor Statistics. The notice of change was provided by the Michigan Department of Treasury in November.

March 1, the resident Recreation Passport fee will increase:

- From \$12 to \$13 for vehicles.
- From \$6 to \$7 for motorcycles.
- From \$24 to \$26 for two-year vehicle registrations.

New nonresident Recreation Passport fees, including the nonresident annual pass that went from \$36 to \$39, went into effect January 1, 2023. ✧

Multi-year Invasive Species Case concludes with convictions

MADISON, Wis. – The Wisconsin DNR announced the conclusion of a multi-year law enforcement investigation and prosecution related to the illegal distribution of more than 960 invasive crayfish by several wholesale-level distributors.

A number of invasive crayfish were distributed, including red swamp, mini orange, electric blue and others. Although these species are native to the southern U.S., they are not native to the northern U.S., including Wisconsin, Michigan and Minnesota. Due to the damage these crayfish can cause to native plant and animal populations, the species are illegal to possess in Wisconsin.

“Some of the more popular invasive crayfish species cause havoc in our waterways by out-competing native species, damaging shorelines, and burrowing deep into the ground to avoid winter freezing,” said Lt. Warden Robert Stroess, Administrator of the DNR’s Commercial Fish and Aquatic Species in Trade Enforcement Program.

The investigation was launched in 2019 after a concerned resident reported a [red swamp crayfish](#) for sale in a Milwaukee pet store. The primary distributor responsible for these illegal crayfish, Apet, Inc., had previously been notified by the DNR of Wisconsin’s invasive species laws. In 2017, Apet, Inc. was found to be delivering an invasive plant and crayfish to a pet store. Despite being contacted by the DNR two more times, the company continued to ship more crayfish to pet stores.

Apet, Inc. was found to have delivered 847 invasive crayfish to Wisconsin customers over two years ending in mid-2019.

“Education and outreach are our primary tools for changing illegal behavior,” Stroess said. “But when that doesn’t work, enforcement is needed.” The Wisconsin Department

DNR shares FAQs about the Great Lakes Consent Decree, now awaiting federal review

In December 2022, Michigan, the United States and four Tribal governments — the Bay Mills Indian Community, the Grand Traverse Band of Ottawa and Chippewa Indians, the Little River Band of Ottawa Indians and the Little Traverse Bay Bands of Odawa Indians — filed a proposed Great Lakes Consent Decree with the U.S. District Court for the Western District of Michigan.

The proposed agreement comes after three years of negotiations. It would extend for 24 years the system of overseeing commercial and sport fishing in parts of lakes Huron, Michigan and Superior.

Because not all governments involved in the negotiations concurred with the proposed decree, it is not yet in effect; rather, it is on a litigation track that will extend into the spring. Because all parties were bound by a confidentiality agreement, the contents of the document could not be discussed prior to its release last month.

Understandably, some questions have arisen in relation to the proposed decree’s potential impact on the Great Lakes fishery within the 1836 Treaty area. To clear up any confusion and clarify key points, the Michigan DNR has compiled a list of the most frequently asked questions.

The proposed decree and FAQ are available at the DNR’s [consent decree webpage](#). ✧

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of Justice charged Apet, Inc. At the conclusion of the case, there were 147 citation convictions of “Transport, Possess or Transfer Invasive Species.”

“I’m hopeful the outcome of this case will deter other wholesale distributors from shipping or delivering to Wisconsin,” Stroess said. More information about [invasive species in Wisconsin](#) can be found on the DNR website. ✧

## New DNR tool provides health information for thousands of lakes

The Minnesota DNR has created a new online tool, called the Watershed Health Assessment Framework for Lakes (WHAF for Lakes), providing easy access to water quality and health information for thousands of Minnesota lakes.

“Our staff did very innovative work over the past year to create this valuable new tool,” Ecological and Water Resources Division Director Katie Smith said. “WHAF for Lakes will benefit anyone who wants to know more about a particular lake’s water quality and the health of the aquatic habitat and community in that lake. It will also help guide decisions about lake protection and restoration.”

Users can compare a lake’s health measures to other nearby lakes. Along with graphics showing lakes’ relative water quality, biology, and hydrology, WHAF for Lakes includes information about basic lake characteristics and lake stewardship. Quick access to this information will help Minnesotans, local government, and water resource agencies work together on comprehensive watershed management efforts.

A lake’s watershed includes all land and surface water upstream of a lake outlet that contribute water to that lake. Land uses within a watershed influence lake health. Alterations of the land, the shoreline, and nearshore vegetation affect the quality of the water and the health of the aquatic community in a particular lake.

“A healthy lake is one that is nearest to its natural state — free from pollution and with a natural shoreline that protects the bank and filters runoff — which allows it to withstand changing conditions and seasonal fluctuations,” Smith said.

WHAF for Lakes can be accessed by searching for a [particular watershed](https://arcgis.dnr.state.mn.us/ewr/whaflakes) ([arcgis.dnr.state.mn.us/ewr/whaflakes](https://arcgis.dnr.state.mn.us/ewr/whaflakes)), exploring watershed health with the [WHAF Map](https://arcgis.dnr.state.mn.us/ewr/whaf2) ([arcgis.dnr.state.mn.us/ewr/whaf2](https://arcgis.dnr.state.mn.us/ewr/whaf2)), or using the DNR’s popular [LakeFinder](https://mndnr.gov/lakefind) page ([mndnr.gov/lakefind](https://mndnr.gov/lakefind)). ✧

## Overfishing in Lake Huron leads to 25 years of license suspensions and \$135K in fines

A commercial fishing company and two of its boat captains are facing hefty fines and lengthy license suspensions after conservation officers deemed them to be overfishing lake trout in Lake Huron. According to a press release from the Ministry of Natural Resources and Forestry, Inland Sea Products was convicted of failing to accurately report the amount of fish caught under their commercial fishing license and was subsequently fined \$100,000.

Two men, who were employed as boat captains by Inland Sea products, were also convicted of the same offence during a separate case. One of the men was fined \$30,000 and is prohibited from participating in commercial fishing for 20 years, while the second man was fined \$5,000 and is prohibited from participating in commercial fishing for five years.

Conservation officers first began their investigation following an audit of catch reports submitted by commercial fishers from Lake Huron. The investigation revealed that the two men, while operating under a fishing license granted to Inland Sea Products, had reached their annual lake trout quota in 2017, but failed to report their lake trout catches, all the while continuing to fish for lake trout throughout the year. ✧

## 2023 Indiana Fishing Regulations Guide now available online

The 2023-2024 Indiana Fishing Regulations Guide is now available to view online. Free hard copies will be available at DNR properties and retailers by the end of February. Check out our tips on ice fishing, as well as 2022 Fish of the Year winners, and 2023 Free Fishing Days. ✧

[Find out more](#)

## Update on the war on Carp

The [Invasive Carp Regional Coordinating Committee](#) states its plan on controlling Asian Carp is to expand the “War on Carp” education campaign, providing new tools and resources to educate the public in support of increased state and federal management. The idea for the “war” apparently came from Wade White, a board director for TVA, and the effort has generated considerable federal and state investment in carp removal and mitigation projects.

The USGS says potential control methods include the use of fish poisons, physical barriers, physical removal, habitat alteration, or the addition of predators, parasites, or pathogens—but none show promise of total elimination. See details on the [Invasive Carp Regional Coordinating Committee](#) website. ✧

## Snowmobile Reminder: Sled Safe, Sled Smart

There is fresh snow on the ground for southcentral Wisconsin, and many snowmobilers are out on the trails. The DNR reminds everyone to know and practice your safety skills on every ride:

- Snowmobile operators need to be safe and responsible while on the trails, routes and frozen bodies of water.
- It is never okay to drink and operate a snowmobile. Impairment of any kind – drugs or alcohol – can have tragic consequences.
- Always operate within the limits of your skills, visibility and snowmobile. Sled Safe, Sled Smart.

[Find a snowmobiling safety refresh along with snowmobile safety classes, regulations and info on how to register your snowmobile on the DNR's website](#) ✧

## Eating one fish from U.S. waters likened to drinking month's worth of contaminated water

Eating one freshwater fish caught in a river or lake in the U.S. is the equivalent of drinking a month's worth of water contaminated with toxic "forever chemicals," new research said recently. The invisible chemicals, called PFAS, were first developed in the 1940s to resist water and heat and are now used in items such as non-stick pans, textiles, fire suppression foams and food packaging.

But the indestructibility of PFAS, per- and polyfluoroalkyl substances, means the pollutants have built up over time in the air, soil, lakes, rivers, food, drinking water and even our bodies. There have been growing calls for stricter regulation for PFAS. The median level of PFAS in the fish was 9,500 nanograms per kilogram, according to a study published in the journal *Environmental Research*. Nearly three quarters of the detected "forever chemicals" were PFOS, one of the most common and hazardous of the thousands of forms of PFAS.

PFOS have been linked to a range of serious health issues including liver damage, high cholesterol, reduced immune responses and several kinds of cancer. To find out PFAS contamination in locally caught fish, a team of researchers analyzed more than 500 samples from rivers and lakes across the U.S. between 2013 and 2015.

Eating just one freshwater fish equaled drinking water with PFOS at 48 parts per trillion for a month, the researchers calculated. Last year, the Environmental Protection Agency lowered the level of PFOS in drinking water it considers safe to 0.02 parts per trillion. The total PFAS level in the freshwater fish was 278 times higher than what has been found in commercially sold fish, the study said.

David Andrews, a senior scientist at the non-profit Environmental Working Group, which led research, told Agence France-Presse (AFP) he grew

up catching and eating fish. "I can no longer look at a fish without thinking about PFAS contamination," said Andrews, one of the study's authors.

The findings were "particularly concerning due to the impact on disadvantaged communities that consume fish as a source protein or for social or cultural reasons," he added. "This research makes me incredibly angry because companies that made and used PFAS contaminated the globe and have not been held responsible."

Patrick Byrne, an environmental pollution researcher at the U.K.'s Liverpool John Moores University not involved in the research, said PFAS are "probably the greatest chemical threat the human race is facing in the 21st Century". "This study is important because it provides the first evidence for widespread transfer of PFAS directly from fish to humans," he told AFP ✧

## Protect our Streams from Aquatic Invasive Species

**MADISON, Wis.** – The Wisconsin DNR reminds anglers out for the early inland trout season to help protect our streams from aquatic invasive species. Some fishing streams may contain invasive species, and if care is not taken, those species can accidentally be transferred to another.

New Zealand mudsnails have one of the highest potentials of spreading from one water body to another. Only 4-6 millimeters in length, they can easily get stuck in the mud and picked up on boots, waders and gear. Felt-soled boots are particularly susceptible to these snails as they can lodge into and under the felt. The snails can lie in the mud along the shore, so they can be spread without ever stepping foot into the water.

Some seeds and fragments of invasive plants can survive throughout winter under the ice. Thoroughly cleaning fishing gear before leaving a fishing site can help stop the chance of spreading invasive species.

Cold Wisconsin winters usually help combat the spread of invasives. The DNR encourages anglers to leave fishing gear where it can freeze for 8 hours or more as this will kill most species, including New Zealand mudsnails. Other methods to kill aquatic invasive species hiding in fishing gear are to steam clean the gear or to soak it in either 140° water or 2% Virkon solution (5.4 tablespoons per gallon) for 20 minutes. Many people aware of the risks will also switch to a new set of gear for a second adventure,

especially if they have been fishing in a stream known to have mudsnails. A few minutes of preventative action can help preserve and protect waterways for generations to come. Before leaving a fishing site, anglers should:

- **Inspect** fishing equipment for attached aquatic plants, animals or mud.
- **Remove** all attached plants or animals.
- **Drain** all water from buckets and containers.
- **Never move** live fish away from a waterbody (fish out of water = dead).

To learn more about invasive species and their impacts on Wisconsin's waters, visit the DNR's [Aquatic Invasive Species webpage](#) ✧

## A Pleasant Milestone

By Bruce Caruso

On February 8<sup>th</sup>, Perch America achieved 2 unbelievable milestones. This is our 30th year anniversary of the club's inception. The next milestone is it will be the 25th year for the Wolf Lake walleye stocking. For a small organization to chug along through many circumstances is really an unbelievable feat. While I have seen clubs fail during this time, Perch America has stood the test of time.

I am proud of all the things we have accomplished and being part of something that gives back to our community and the environment. I am grateful to all the members we have had through the years and want to pay homage to the forefathers who created this great organization. Also I would like to pay respect to those members who are no longer with us. And a great deal of gratitude to all those who helped along the way.

I have met so many good people through this organization and formed relationships that will last my whole life. While we live in a different world today and I don't know what the future holds for us, I am planning on being part of this club till the end and hopefully we can do many more good things.

I AM A PROUD MEMBER OF PERCH AMERICA ✧

## Commercial fishing deaths in Canada hit 20-year high

Despite improvements in safety training and awareness, commercial fishing remains one of the most dangerous professions in Canada. The Transportation Safety Board of Canada reports that 45 workers died between 2018 and 2020, the highest three-year total in 20 years. And fishing safety has been on the board's watch list of important safety matters since 2010. But fishing fatalities are preventable. The TSB also reports that 29 workers died between 2015 and 2021 after their boats capsized or sank without personal floatation devices or distress-alerting devices. ✧

## Boaters pay for Launch Ramps, Safety, Conservation, etc, but is everyone paying their fair share? *BoatUS News*

SPRINGFIELD, Va., Jan. 24, 2023 – It's a question that's been asked a million times: "Is everyone paying their fair share?" When it comes to those who recreate on the water together nonmotorized and motorized vessel operators who mutually benefit from the use of launch ramps, boating safety programs, conservation efforts and more, a recently released U.S. Government Accountability Office (GAO) study says that answer remains unclear.

Discussions on the equitability of contributions to the Sport Fish Restoration and Boating Trust Fund, a user-pay/user-benefit grant program administered by the U.S. Fish & Wildlife Service, began from a mandate included in the Trust Fund's 2021 Reauthorization from Congress. Trust Fund revenue comes directly from import duties or excise taxes vessel operators pay on sportfishing equipment such as tackle boxes and fishing rods, but the single largest bucket of funding (49%) for the Trust Fund comes from a special tax on fuel that only motorboat operators pay.

The recently released [GAO study, "Recreational Boating: How Vessel Users Contribute to and Benefit from a Federal Trust Fund"](#) looked at (1) The use of nonmotorized and motorized vessels, (2) The extent that users of these vessels have contributed to the Trust Fund, and (3) The extent that the Trust Fund has been used for boating access and safety activities to benefit users of those vessels. The report concluded that "GAO was not able to determine the specific extent that non-motorized and motorized vessels users benefit from these activities." One challenge noted was that anyone can purchase products such as sport fishing equipment, so the extent to which boat users – paddlers or motor boaters – are contributing to the fund is not clear. *Continued on col. 3*

## Always assume you are on thin ice

With the recent temperature drops across the state, Indiana Conservation Officers are advising Hoosiers across the state of the potential hazards of being on frozen lakes, ponds, rivers, and streams. Every winter, thousands of Hoosiers safely enjoy fishing, skating, hiking, or just sliding around on frozen ponds and lakes. And every year, people drown after falling through ice. Just like driving differently on snow versus on clear roads, it's important to adjust your approach to safely have fun on ice. The best rule of thumb is to put safety first. When you are thinking about getting on the ice, believe it is thin ice unless proven otherwise. ✧

## Paying their fair share

*Continued from column 2*

"What is clear is that the Sport Fish Restoration and Boating Trust Fund has been critical to any vessel operator, giving us the waterway access we need to use our boats, keeping us safer on the water, and supporting fish habitat and healthy waters. And it does so without asking for dime of funding," said David Kennedy, BoatUS manager of government affairs.

What GAO found:

1. More than a quarter of the U.S. population engaged in recreational boating in 2018, according to a survey commissioned by the U.S. Coast Guard. The survey also estimated that more motorized vessels were used (5 million) at least once compared with nonmotorized vessels such as kayaks (3.9 million) the same year.
2. The Trust Fund received tax and import duty revenues averaging about \$713 million for fiscal years 2012 through 2021, adjusted for inflation. Motorboat fuel taxes make up about 49% of this funding.

The Trust Fund is next set to be reauthorized by Congress in 2026. ✧

## How microplastic kills plankton

Plastic has become so pervasive that even tiny plankton are ingesting it. And since marine creatures from fish to whales eat plankton, plastic is harming species all the way up the food chain. New research shows that sea urchin larvae don't even have to eat plastic to die from developmental problems; they just have to be reared in waters containing it.

Plastic pollution in oceans has been increasing at an alarming rate over the years. According to the World Wildlife Fund, [88 percent](#) of marine species have been affected by plastic contamination.

People are familiar with seabirds dying from eating [cigarette lighters](#), or turtles suffocating as a result of mistaking [plastic bags](#) for jellyfish, but there is very little awareness about plastics that harm creatures at a smaller level, Kirby explains. Ingesting microplastic can even kill plankton that are crucial sources of food to other marine life, including fish. This is because plankton cannot get a sufficient amount of food into their guts if they're already occupied by little shreds of plastic.

Plastic is almost ubiquitous in oceans, and can even be found in environments that used to be considered pristine, says Kirby. "You can even find plastics in plankton samples collected in Antarctica, for example." Plastic shreds from clothing are a significant pollutant at the micro level. Microplastic can also [come from](#) tires, road markings, and personal care products.

Plankton aren't mistaking microplastics for food, exactly, says Bill Perry, an associate professor of biology at Illinois State University. They are filter-feeding during which they extract small pieces of food and particles from the water. In doing so, they gather up microplastics, too.

The damage that microplastics cause is not just confined to microscopic marine organisms like plankton. In fact, it is more pronounced in species that are located higher in the food chain, explains Perry, and which eat smaller creatures that have themselves consumed microplastics. In 2020, Perry conducted a [study](#) that examined the presence of microplastics in two different fish species in drinking water reservoirs that belonged to McLean County in Illinois. Perry's research group collected 96 fish, and they detected microplastics in all of them. "The fish seemed to be swimming in essentially a soup of microplastics in the reservoirs," he says.

Eating microplastics, as you might imagine, is not very good for marine animals. Fishes can face [problems](#) with growth and reproduction, says Grace Saba, an associate professor who also researches organismal ecology at Rutgers University. Their guts start to have more and more plastic and less food, and they don't have enough energy to put toward growth and reproduction like they would if they weren't eating microplastics.

The microplastic problem is only going to get worse: A [report](#) by the International Atomic Energy Agency projects that the amount of microplastics in the eastern tropical Pacific Ocean will rise by 3.9 times in 2030 as compared to the microplastics level in 2008 in the region.

Once microplastics enter the ocean's food chain, it's hard for them to leave. Individual animals may excrete microplastics, but "the thing about poop in the ocean is that it serves as a food source for marine animals, including plankton and filter feeders," Saba explains. In this way, microplastics get continuously recycled. Marine scientists in the future will probably be spotting microplastics in their samples, too. ✧

## Wisconsin NRB Meeting Feb. 22

**MADISON, Wis.** – The Wisconsin Natural Resources Board will meet in-person for the February board meeting to consider several proposed rulemaking documents, fish and wildlife matters, and donations.

The meeting will begin at 8:30 a.m. on Wednesday, **Feb. 22, 2023**, originating from public meeting room G09, State Natural Resources Building (GEF2), 101 S. Webster Street, Madison, Wisconsin. [The Board will act on items 1-4 and 7 as listed on the agenda.](#)

The public is encouraged to watch the February board meeting on [the DNR's YouTube channel](#).

The deadline to register for public appearance requests and to submit written comments is 11 a.m. on Wednesday, Feb. 15, 2022. Remote testimony from the public via Zoom may be accepted. In-person public appearances are also welcome.

During the February meeting, several items the Board will be considering include:

- Approval of the Statement of Scope for Board Order WM-18-22
- Conditionally approve the public hearing notice and notice of submittal of proposed rules to the Legislative Council Rules Clearinghouse, for proposed rules affecting chapters NR 10 and 45 related to the 2023 Wildlife Management Spring Hearing rule.
- Approval of the Central Sand Plains Regional Master Plan

[The complete February NRB meeting agenda is available on the DNR website.](#)

In addition to being encouraged to watch the upcoming meeting, there are opportunities for the public to testify and to submit written comments about issues that come before the NRB. [More information regarding public participation at Board meetings is available here.](#) ✧

## Solar power coming to DNR state fish hatcheries

As Michiganders, we truly love to get outside on sunny days, maybe for a day at the beach, a skiing trip with friends, boating on our favorite lake, bike riding on trails or camping at one of our beautiful state parks.

Regardless of what we have planned, the sunlight has a way of brightening our spirits and adding positive vibes to our lives, even on days when we seem just too busy to go out and truly unwind in it.

Starting in 2023, solar panels will be installed at Michigan state fish hatcheries, contributing to paying the bills, producing electricity to help rear fish.

Starting in the southern part of the state in March and moving north through July, Solar Harvest, a solar energy company, will install solar arrays at five of the six DNR fish hatcheries.

Only the Marquette State Fish Hatchery in Marquette will be left out because nearby hills and trees block some light and reduce the amount of time solar panels could be producing electricity. This means that not enough electricity would be produced to offset enough power to make the investment worthwhile.

Luckily, though, that's not the case at the other hatcheries.

### Larger arrays

Three of the solar arrays will be the same size, each designed to produce 189.24 kilowatts and each offsetting power from Consumers Energy. These three larger arrays will be installed at the Wolf Lake, Harrietta and Oden hatcheries.

Although they will have the same design output capacity, the cost savings will vary due to site-specific physical factors and differences in electrical rates at each hatchery.

Projected annual energy cost savings are expected to be about \$17,000 at Wolf Lake, \$19,700 at Harrietta and \$19,500 at Oden.

Wolf Lake State Fish Hatchery's array installation will begin in March and is planned to be completed by early April. The location will be north of the production raceway building, paralleling Michigan Highway 43.

This array will be noticeable by hatchery visitors but will not be highly visible from the highway, due to trees along the north side of the property.

Wolf Lake's solar array is expected to offset 17% of the main hatchery's electricity needs and will pay for itself in 17 years.

Harrietta State Fish Hatchery's array will be the next one installed, to be completed by the end of April. This one will be easily seen, with its location just west of the settling pond and in clear view of West 30 Road.

The location was selected because there is a steep, wooded hill just to the south of the hatchery that needs to be avoided. Harrietta's solar array is expected to offset 18% of the main hatchery electricity needs and will have a payback period of 15.3 years.

Oden's large array, one of two at this hatchery, will be installed in June. It will be situated in a sunny location just north of the brood stock building and will produce electricity for the main hatchery.

The site is well off South Ayr Road and will not be visible from the road, but visitors will be able to see it from the main hatchery. Oden's large array is expected to offset 16% of the hatchery electricity needs and have a payback period of 15 years.

### Smaller installations

Additionally, three smaller arrays will be installed at DNR hatcheries, including one at Platte River, one at Thompson and a second one at Oden. These arrays will vary in size and mounting style due to agreements with power companies and site conditions.

The Platte River State Fish Hatchery will receive a smaller, ground-based

solar array by the end of May, which will offset power supplied by Cherryland Electric. This one is designed to produce 125.5 kilowatts for the main hatchery and is expected to produce enough energy to save the DNR about \$13,000 per year.

The location for the array will be near the weir and salmon maturation ponds, visible to hatchery visitors but not noticeable from U.S. Highway 31. Platte's array is expected to offset 12% of the hatchery electricity needs and has a payback period of 15.6 years.



The smaller of the two arrays at Oden State Fish Hatchery will be installed in late June. This one is designed to produce 51.46 kilowatts and is projected to save about \$6,600 in energy costs per year.

It will supply a significant amount of the power needed to keep the viewing chamber dry, allowing visitors to watch what's happening underwater in the stream at Oden State Fish Hatchery.

### Solar power

*Continued on page 11*

**Solar power**

*Continued from page 10*

Additionally, it will offset electricity used in the isolation building, which is used to isolate new groups of fish that are planned to be used as future brood stock, including Arctic grayling.

The location for this array will be to the west of the isolation building, south of Oden’s big fishponds. It will not be visible from any road but will be somewhat visible to visitors who use the trail to the ponds.

The smaller array at Oden is expected to offset 76% of the electricity used from this meter and has a payback period of 13.8 years.

The sixth and final array will be installed at Thompson State Fish Hatchery in July. This one will be a roof-mounted system that is designed to produce 126.99 kilowatts of power and is expected to save about \$13,000 annually.

Unlike the others, this array won’t be as noticeable because it will be mounted on top of the production raceway buildings, which are not easily seen from the road or hatchery grounds. Thompson’s array is expected to offset 16% of the main hatchery electricity use and has a payback period of 15.6 years.

Adding these six arrays will dovetail nicely with an existing 6-kilowatt array at the Oden State Fish Hatchery Visitor Center. Significant funding was provided for this array from by the Frey Family Fund via the Charlevoix County Community Foundation and Friends of Oden Hatchery, with construction completed in autumn of 2020.

This array reduced electricity supplied by Consumers Energy from a three-year average (2017-2019) of 11,423 kilowatt hours to a two-year average of 5,255 kilowatt hours and dropped the cost over those same time periods from \$1,851 to \$870.

Quite often, the array produces more power than the visitor center uses, which provides a credit to the monthly electricity bill. Because of this benefit, there were at least seven

months in 2022 when the electric bill was under \$30.

While the six new arrays won’t offer the same extremely low monthly bills, they certainly will make a significant dent in the DNR’s energy costs.

The investment is substantial. It is expected to produce 652,000 kilowatt hours per year, offsetting 16% of the overall hatchery electrical needs, saving the DNR almost \$2.5 million over the next 25 years. ✧

**Take a smile break**

☞☛

- Some people should use a glue stick instead of Chap Stick.

☺ ☺ ☺ ☺ ☺ ☺ ☺

- Sometimes, the first step towards forgiveness is realizing the other person was born an idiot.

☞☛

**Barrier allows in other invaders**

*Continued from page 1*

even more types of species. “Using carbon dioxide levels that elicit avoidance responses in Asian carp, we tested nine invertebrate species, covering a range of sizes and types,” said graduate student Colette Copic, who worked on project as part of their thesis.

The only one that died in the experiment was the bloody red shrimp – native to Eastern Europe but established in the Great Lakes.

Researchers also tested the species’ tolerance for a range of high carbon dioxide levels, and the higher the rate the greater the impact. A concentration nearly twice the level allowed by federal environmental regulators showed low mortality, but the gas did cause many organisms to seemingly fall asleep.

“They almost essentially became frozen and then woke up once conditions got better,” Copic said.

Keller and Copic said the low fatality rate for invertebrates in the barrier experiments is both good and bad news: A carbon dioxide barrier added to the Chicago waterway will have few unintended effects on native invertebrates that aren’t targeted, but it also won’t be a lethal method to halt invasives.

Copic said it was encouraging that adult red swamp crayfish avoided waters filled with carbon dioxide in the study, “but I think that we need to know more and also be thinking about how these species are actually spreading.” The study concluded that both electric and carbon dioxide barriers running at levels that deter invasive carp do little to prevent the spread of invertebrates between the Great Lakes and Mississippi River basins. Even at higher rates, a similar lack of impact is expected.

Invertebrates typically drift rather than swim downstream and often move upstream attached to boats and barges,” Keller said. “They may be uncomfortable or incapacitated going through barriers but would likely recover on the other side.” This discovery comes amid years of scientific research into the potential harm invasive types of Asian carp would have if not blocked from the Great Lakes.

Should they become established in the Great Lakes, bighead and silver carp would have a major disruptive impact on fishing and recreational boating. Silver carp could injure people by leaping from the water when disturbed and both species would likely compete with native fish for food and habitat, as they’ve done in the Mississippi River.

Meanwhile, design and pre-construction engineering work is progressing on an \$850 million effort to fortify the Brandon Road Lock & Dam, a chokepoint dam on the Des Plaines River near Joliet positioned as a last line of defense to keep the fish from Lake Michigan. ✧

**Other Breaking News Items:****(Click on title or URL to read full article)****Treat waders with Formula 409? New study confirms it kills invasive snails**

Biology researchers in Michigan found the best way to kill invasive New Zealand mudsnails from fishing and boating gear is to heavily spritz with common household cleaner Formula 409.

**Lake Erie algae in 2022 worse than predicted**

A year-end report from the National Oceanic and Atmospheric Administration said that Lake Erie algae blooms were more severe than expected due to an increase in algae biomass that fostered *Microcystis* blooms

**More than a classroom pet: St. Clair County students learn through raising salmon**

Students from St. Clair County, MI are learning about the environment by raising salmon in the classroom. The Michigan DNR's Salmon in the Classroom program aims to teach students between third and 12th grade about the ecology in the Great Lakes ecosystems, invasive species, and other topics

**Carp Control**

Great Lakes preservationists received a significant boost in December with the bipartisan passage of the Water Resources Development Act (WRDA). The Act provides significant resources for protecting the Great Lakes, including funding for preventing the infiltration of invasive carp

**NOAA looking to preserve history in East Lake Ontario**

The National Oceanic and Atmospheric Administration (NOAA) has proposed to designate a National Marine Sanctuary in eastern Lake Ontario that will preserve, interpret, and protect the region's submerged maritime heritage resources and artifacts

**MSU opens new lamprey research lab**

The Great Lakes Fisheries Commission and Michigan State University recently brought a new \$3.4 million research lab online, which will focus on sea lamprey control in the Great Lakes.

**Langworthy bill would eliminate tax credits for Great Lakes wind farms**

U.S. Rep. Nick Langworthy (R-NY) introduced a bill Wednesday that would stop potential Great Lakes wind farms from getting tax credits, a legislation that would effectively deter construction of new wind farms

**'Forever chemicals' in Great Lakes fish more risky than PFAS in drinking water, study says**

A new study found that consuming freshwater fish harvested from urban areas 12 times per year could more than triple the level of PFOS — one of the most well-known and researched PFAS compounds — in residents of the U.S

**Scientists: atmospheric carbon might turn lakes more acidic /**

The Great Lakes have endured a lot the past century, from supersized algae blobs to invasive mussels and bloodsucking sea lamprey that nearly wiped out fish populations.

**Brunswick Launches New Electric Boat Brand /**

Veer is an all-new boat brand designed to support electric propulsion and appeal to the next generation of boaters

End