Inland Seas Angler

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Study: Noxious sea lampreys took advantage of Covid-19 pandemic

ANN ARBOR, MI—Travel restrictions associated with the COVID-19 pandemic caused a major pause in critical work to control destructive, invasive sea lampreys in the Great Lakes, resulting in two years of reduced control in 2020 and 2021. Scientists have analyzed this unprecedented situation to determine whether the pause had a meaningful effect on sea lamprey abundances and fish wounding. Their study, published in March in the journal *Fisheries*, concluded that sea lamprey numbers—and fish wounding—skyrocketed during the pause, demonstrating that ongoing control of this invasive species is critical to protecting Great Lakes fish and the valuable fisheries they support. Great Lakes fisheries generate $5.1 billion in economic output each year and directly support 35,000 jobs in addition to hundreds of thousands of jobs related to tourism, navigation, and more.

Sea lampreys are parasitic fish native to the Atlantic Ocean. Their populations spread into the Great Lakes in the mid-1800s and early 1900s, where they caused considerable harm to native fish, such as lake trout, whitefish, ciscoes, and walleye. Sea lampreys feed by suctioning onto fish, using their tongues to rasp a hole through the skin, and consuming the blood and juices that flow out. Each sea lamprey is capable of killing up to 40 pounds of fish during its parasitic stage. When populations peaked at nearly 2.5 million animals in the mid-1900s, sea lampreys were killing a staggering 100 million pounds of fish each year.

Science-based efforts to control Great Lakes sea lampreys began in the 1950s, eventually causing populations to plummet to only about 10% of their historic highs. Sea lamprey control is coordinated by the Great Lakes Fishery Commission in partnership with the U.S. Fish and Wildlife Service and Fisheries and Oceans Canada, with science support from the U.S. Geological Survey (USGS). The sea lamprey control program is considered one of the most cost-effective and successful invasive species suppression programs in the world and an essential component of protecting economically valuable Great Lakes fisheries.

But the COVID-19 pandemic threatened that success for two years. With limitations on travel due to safety concerns in place during 2020-2021 for the primarily Michigan and Ontario-based control crews, control efforts were greatly reduced, particularly at the geographic extremes of Lake Ontario and Lake Superior. What followed was a unique situation that allowed scientists to answer key questions about Great Lakes sea lamprey control. Are invasive sea lampreys still a threat to Great Lakes fisheries? Is sea lamprey control still necessary to suppress their populations?

Noxious sea lampreys

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Get ready to go fishing

It's time to dust off your fishing gear and get ready to put that new fishing license to good use: trout and the Lower Peninsula inland walleye and northern pike seasons opened Saturday**,** **April 26**. Make plans with your fishing buddies or bring someone new this year to share in the fun! Anglers should note that in Upper Peninsula waters, the walleye and northern pike possession seasons open Thursday, **May 15.**

Michigan's muskie possession season on all Great Lakes, inland waters, the St. Marys River, Lake St. Clair, and the St. Clair and Detroit rivers opens Saturday, **June 7** (catch-and-immediate-release fishing for muskellunge is open all year).

And don't forget the catch-and-immediate-release season for largemouth and smallmouth bass is open all year on nearly all waters, unless otherwise closed to fishing. Check the current Michigan Fishing Regulations summary for specifics.

The possession season for bass opens statewide, **May 24**—except for on Lake St. Clair, the St. Clair River and the Detroit River, which open Saturday, **June 21**. ✧

Federal budget proposal puts Great Lakes research at risk, raising concerns as fishing season starts

MILWAUKEE – As Wisconsin anglers enjoyed the opening of inland fishing season, researchers warn that looming federal budget cuts could jeopardize the very science that helps protect the Great Lakes.

The proposed 2026 federal budget includes a 25% reduction—nearly $1.5 billion—to the National Oceanic and Atmospheric Administration (NOAA). That could gut funding for research programs monitoring water quality, weather conditions and fish populations across the region.

Lake Michigan, often viewed as a clean and stable freshwater source, is at the center of the concern.

For over two decades, Dr. Harvey Bootsma, professor and associate dean at the University of Wisconsin-Milwaukee's School of Freshwater Sciences, has overseen a network of buoys in Lake Michigan that track environmental conditions in real-time—from wind speed and temperature to oxygen levels and harmful algae blooms.

"This is what's called a water quality sonde," said Bootsma during a shoreline demonstration. "It measures everything from water temperature to dissolved oxygen to the amount of plankton in the water."

According to Bootsma, just one buoy off Atwater Beach is accessed more than 30,000 times a season by boaters, researchers, educators and anglers across the state.

"It supports human safety. It supports shipping. It supports sport fishing. It supports research," he said. "If we stopped getting funding from NOAA for these buoys, a lot of people would be disappointed—and potentially put at risk."

Bootsma's lab is part of the Great Lakes Observing System, which receives nearly 95% of its $4.2 million budget from NOAA. That funding is now under threat of being cut.

At the opposite end of the state, Deanna Erickson directs the Lake Superior National Estuarine Research Reserve in Superior, one of only two such reserves on the Great Lakes. Last year, she said her program received nearly $881,000 from NOAA, which covers about 70% of its operating costs.

"The work we do over many years helps protect the water quality that we drink, that supports tourism, that supports fishing and shipping," said Erickson. "It's a critical part of who we are in Wisconsin."

The potential cuts would not only impact universities like UW-Milwaukee and UW-Madison, but also the broader ecosystem and industries tied to clean water, particularly the fishing industry, as it entered one of its most important weekends of the year on Saturday.

"I mean, as soon as our buoy stops working and we pull it out of the water, we start getting calls immediately," said Bootsma. "That tells us how many people rely on the data from the buoys. If we stopped getting funding from NOAA for these buoys, a lot of people will be disappointed." ✧

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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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Help protect lake sturgeon when fishing this spring

DNR reminds anglers of lake sturgeon fishing regulations and rehabilitation efforts.

As spring arrives, anglers fishing in our rivers may unexpectedly find themselves with a lake sturgeon on the line. The Michigan Department of Natural Resources reminds anglers that special regulations exist for lake sturgeon, and fishing for lake sturgeon is prohibited except in a few locations in the state.

Can anglers fish for lake sturgeon?
In the Lower Peninsula, lake sturgeon may be encountered in places such as Manistee Lake, the Manistee River, Muskegon Lake, the Muskegon River, the Grand River, the Kalamazoo River, and Saginaw Bay and its tributaries, but it is unlawful to fish for lake sturgeon in these waters; any lake sturgeon incidentally caught while targeting other species must immediately be released. Additionally:

- Never hold a sturgeon in a vertical position by its head, gill covers or tail.
- Never touch the fish's eyes or gills.
- Handle the fish as little as possible.

Waters with sturgeon possession seasons include Lake St. Clair and the St. Clair River, Otsego Lake, the Menominee River and Black Lake. Waters with sturgeon fishing seasons (catch-and-release only) include the Detroit River, the St Marys River, Portage-Torch Lakes and the Ontonagon River.

In all other waters in the state of Michigan, it is unlawful to fish for lake sturgeon. (See Page 15 of the 2025 Michigan Fishing Regulations for detailed information related to lake sturgeon.)

Anglers can report incidental (unintentional) capture of lake sturgeon and report illegal harvesting or targeting of lake sturgeon at Michigan.gov/EyesInTheField or by calling the DNR's Report All Poaching hotline: 800-292-7800. ✧

Scofflaw anglers to face big fines in 2025 fishing season, Manitoba says

The Manitoba government is tightening the rules on recreational fishing with a sharp increase in penalties for anglers who break the law. Starting in 2025, anyone caught violating key fishing regulations will face significantly steeper fines, as part of the province's effort to protect aquatic ecosystems and promote responsible angling.

Among the most notable changes is the fine for fishing with barbed hooks, which will jump from $52 to $220—a 300% increase. Manitoba law requires all hooks to be barbless, either manufactured without barbs or modified so that the barbs are completely compressed against the hook shaft.

Fines for exceeding the legal catch limit have also nearly quadrupled, rising from $102 to $390. The province continues to enforce strict possession limits to prevent overfishing and to maintain sustainable fish populations in its lakes and rivers.

Bringing live bait into the province—a major concern due to the risk of introducing invasive species—will now cost violators $433, up from $200. The same fine applies to those found in possession of crayfish, which are also restricted under Manitoba's invasive species laws.

Finally, the fine for leaving a fishing line unattended will increase from $52 to $220, underscoring the need for anglers to be present and in control of their gear at all times to avoid harming fish or wildlife.

These updated penalties reflect Manitoba's commitment to conservation and responsible outdoor recreation, sending a clear message to anglers: know the rules, and follow them—or pay the price. ✧

What do small steelhead tell us about the future of fishing?

Last year's steelhead run had many anglers concerned about steelhead populations, and the Michigan River Steelhead Program is documenting how young stocked and wild fish might translate to brighter days ahead. A new article on the MSU Extension website describes how volunteer catch rates are being analyzed to learn more about steelhead population trends. While the missing year-class of stocked steelhead contributed to low catch rates of large steelhead last year, we also saw high catch rates for small steelhead. In fact, last year saw the highest catch rates we have recorded for wild and stocked skippers and "super skippers." Skippers are small 15-19" steelhead that run upstream after spending only one summer in the Great Lakes and "super skippers" are mid-sized 20-24" fish that may (or may not) have spent two summers in the Great Lakes.

Additional work is now underway to assign ages to volunteer-caught steelhead. Age assignment and collection of at least one more year of data will help us determine the strength or weakness of different year-classes.

The Michigan River Steelhead Program engages anglers in collecting data on clipped and unclipped steelhead using the Great Lakes Angler Diary. This progress report from the steelhead program includes a synopsis of steelhead stocking and marking from the Great Lakes Fish Stocking Database and Michigan DNR's Fish Stocking Database.

The information on the DNR's TROUT tool, including trout streams, regulations and easements, is now available on the Wisconsin Fishing Finder. The DNR urges any anglers currently using TROUT to transfer their bookmarks and saved locations to the Wisconsin Fishing Finder, as the TROUT tool will be turned off at the end of May.

Learn more about the Wisconsin Fishing Finder online. ✧

Early season walleyes on jigs

Courtesy ***The Fishing Wire***

If you're going fishing for walleyes tomorrow on one of the rivers in the Midwest, a jig will probably be the best choice of lures. If you won't be chasing walleyes until early summer, or even later, a jig will still be a very good choice. When walleyes are the quarry, and when it's early in the season, a jig is tough to beat.

Jigs come in all shapes, sizes, and colors. Selecting the jig that matches the conditions being fished is pretty important, but selecting the appropriate jig is also pretty simple. Following are some ideas for selecting an effective jig for catching walleyes early and later in the season.

At this time of the year, rivers and some lakes are often stained by run-off water. It's important to remember that in stained water, and especially when the water is cold, we should crawl our jigs along the bottom, especially if there aren't a lot of snags in the area being fished. A stand-up jighead is a good choice. This jig will be most effective as it crawls across the bottom because, when paused, the minnow that it's tipped with will remain in an upright position, making it more visible to the walleyes. A round head jig when paused on the bottom will lay on its side and be less visible.

When the fish are active or spread out, a jig tipped with plastic will be better. Try a jig tipped with a smaller Rage Swimmer or a Mr. Crappie Grub. These baits will allow an angler to fish a bit faster and maybe show your bait to more walleyes. You won't want to work this combo on the bottom like we did with the jig and minnow set-up. A swimming retrieve will usually be better. Cast the jig out, let it sink to within about a foot of the bottom, then begin the retrieve. Just reel the jig slowly with your rod tip in about the two o'clock position. Maybe let it sink closer to the bottom every now and then, but mostly swim it just above the bottom to avoid snags.

Use a jig-head of one color with a body of another color. Sometimes the fish want a particular color, and if you show them two colors on the same jig, you increase the odds of showing them the color they want on that day. An orange jighead with a chartreuse piece of plastic is a walleye-catcher in many places.

Six or eight pound test line works very well with jigs. If a sixteenth or eighth ounce jig is being used, six pound line would be a good choice, while eight pound line would be good with heavier jigs. Sometimes eight pound line with eighth ounce jigs will be very productive if you want to slow the speed at which the bait falls. The larger diameter of the eight pound line creates a bit more water resistance, and that allows the bait to fall a tad slower. If the area being fished has more snags, line that's a little heavier will allow you to save a few jigs that might have been lost with lighter line.

Jigs, for the next few weeks, will probably be the best bet for walleyes. In fact, wherever and whenever you're trying to catch a walleye, a jig in some form will be a good choice. ✧

Province replacing Endangered Species Act

The province of Ontario intends to phase out the **Endangered Species Act (ESA)** of 2007 and replace it with new legislation called the Species Conservation Act (SCA).

Proposed on April 17, the changes are designed to loosen current approaches to the protection and conservation of species at risk, which the province deems complicated, too lengthy, and responsible for unnecessary delays and costs for housing, transit, and critical infrastructure. The proposal is now listed on the Environmental Registry of Ontario—the comment period ends May 17.

Once Bill 5, Protect Ontario by Unleashing our Economy Act, 2025 receives Royal Assent, it would make immediate amendments to the ESA and, after an interim period, repeal the ESA and enact a new Species Conservation Act, 2025.

According to the government, the SCA would "Create species protection legislation that will drive species protection and conservation while taking into account social and economic considerations, including sustainable economic growth in Ontario."

Additional changes produced by the proposed Bill 5 include:

- Eliminate the Species Conservation Action Agency and the Species at Risk Program Advisory Committee
- Disallow contributions to the Species at Risk Conservation Fund by removing the option for proponents registered for regulatory exemptions to pay a charge into this fund instead of "beneficial action"
- Transfer the money in the fund to the government provided it must be "spent on activities that are in alignment with species protection and conservation goals."
- Create new "Species Conservation program and account" to replace The Species Conservation Action Agency and the Species at Risk Program Advisory Committee
- Remove the requirement for the government to develop recovery develop recovery strategies and management plans, government response statements, and reviews of progress for species at risk
- Create a general prohibition against activities that would result in a species no longer living in the wild in Ontario
- Update their compliance and enforcement model ✧

Student Club, MI DNR lead successful steelhead stocking event to promote local fishing, conservation

On April 18, the Michigan State University (MSU) Fisheries and Wildlife Club, in collaboration with the Michigan DNR, successfully conducted a steelhead stocking event at the Red Cedar River on MSU's campus. This initiative aimed to bolster the local steelhead population, which cannot naturally reproduce in the river, while promoting local fishing and angling activities.

Students, faculty and community members enthusiastically participated in the event, contributing to conservation efforts and learning more about the importance of maintaining healthy fish populations. Steelhead stocking ensures the sustainability of the Red Cedar River's ecosystem and fosters a deeper appreciation for the natural world among the campus community.

"Students cross the Red Cedar in multiple locations each day and probably don't know much about what's in there, how it's managed or that you can even fish portions of it. I think that awareness is key," said Jay Wesley, the Lake Michigan basin coordinator with the Michigan DNR.

"My goal is to educate the students on campus about the fisheries Michigan has to offer through hands-on opportunities. This event provided that. The Red Cedar supports a lot of biodiversity. I want to help the MSU community recognize and appreciate that. I think today helped our club's mission to do just that," said Braydon Sprik, the MSU Fisheries and Wildlife Club fisheries chair.

The MSU Fisheries and Wildlife Club and the Michigan DNR commit to ongoing conservation efforts and promote environmental stewardship through educational and hands-on activities. This event's success highlights the positive impact that collaborative efforts have on local ecosystems while raising awareness about local natural resources and the opportunities they offer. ✧

Minn. DNR: Safety must be the priority around cold water

Anglers and paddlers have wasted little time getting out on open water across Minnesota. However, with water temperatures still dangerously low, the Minnesota DNR reminds anyone around lakes, rivers, and ponds that cold water is dangerous and unexpected falls quickly can turn tragic.

About 30% of fatal boating accidents each year happen during the cold-water period, and many involve victims who weren't wearing a life jacket. The most effective way to survive a fall into cold water is to wear a life jacket and make sure it's buckled or zipped.

"Boats, canoes, and kayaks have been common sights in these early days of the open-water season," said Lisa Dugan, DNR recreation safety outreach coordinator. "We certainly understand people's desire to hit the water as soon as possible, but we urge everyone to double down on safety this time of year to avoid getting into a situation with potentially disastrous consequences."

As boaters and paddlers take the season's first trips to the water, they should:

- Wear a foam-filled life jacket. (Inflatable life jackets may not fully inflate when the water is cold.)
- Ensure their watercraft is registered and equipped with proper safety equipment, and that all equipment is functioning properly.
- Distribute weight evenly and abide by manufacturers' weight limits to reduce the likelihood of falling overboard.
- Have a means of communication and ensure someone knows where they're going and when they plan to return.
- Watch the weather to avoid shifting winds or storms.

For more information about staying safe on and around cold water, visit the DNR's cold water safety page (**mndnr.gov/safety/boatwater/cold-water.html**). ✧

DNR Launches "The Wisconsin Fishing Finder"

A New Web Tool to Help Anglers

The Wisconsin DNR announced the launch of their new Wisconsin Fishing Finder, a comprehensive online fishing resource for anglers.

There are lots of great places to fish in Wisconsin, including over 15,000 inland lakes, 42,000 miles of perennial streams and rivers, 1,000 miles of Great Lakes shoreline and 260 miles of the Mississippi River. With so many places to choose from, finding the place you want to fish is a little like finding a needle in a haystack. The Wisconsin Fishing Finder is here to help anglers find the fishing spot they are looking for.

The Wisconsin Fishing Finder works using any internet browser to give anglers access to various fishing information, including:

- Fishing regulations for lakes and trout streams
- Boat launch locations and accesses
- Shore fishing locations
- Public lands and easements
- Healthy guidelines for eating fish
- Lake habitat information
- Habitat improvement projects
- Invasive species
- Fish stocking information
- DNR service center locations and where you can buy a fishing license

"We've created this tool to help anglers find new places to fish or get insights into their current favorite fishing spots," said Justine Hasz, DNR Fisheries director. "This is an easy-to-use resource that we hope will become a staple for all anglers looking to discover more about Wisconsin's fishing opportunities."

The information on the DNR's TROUT tool, including trout streams, regulations and easements, is now available on the Wisconsin Fishing Finder.

Learn more about the Wisconsin Fishing Finder online. ✧

Fishery Commission Lauds Trump Commitment to Asian Carp Prevention

Trump-Whitmer-Hall Meeting Yields Renewed Optimism that Prevention Project will Proceed

ANN ARBOR – The Great Lakes Fishery Commission lauded Wednesday's Oval Office discussion among President Donald Trump, Michigan Governor Gretchen Whitmer, and Michigan House Speaker Matt Hall about the need to prevent the migration of Asian carp into the Great Lakes. The Commission has been part of a determined, bi-partisan effort to keep these harmful, invasive species out of the Great Lakes, and Wednesday's conversation gives renewed hope that key projects, like the one underway at the Brandon Road Lock and Dam, will be completed as planned.

"Asian carps would devastate the Great Lakes fishery if they were allowed to enter the system," said Commission Chairman Ethan Baker, who is also the Mayor of Troy, Michigan. "We must do everything we can to keep them out. The multi-billion-dollar fishery is at stake."

"Asian carp" collectively refers to three species of fish—bighead, silver, and black carp—that are native to Asia and that escaped accidentally into public waterways in the southern United States decades ago; they have been making their way towards the Great Lakes ever since, with a manmade canal system near the Chicago area being the riskiest pathway. The carps were originally raised for food and as a natural way to keep bodies of water free of algae and other aquatic vegetation. An electrical barrier exists near Romeoville, Illinois to impede the movement, and a major project, the retrofitting of the Brandon Road Lock and Dam in Joliet, is designed to be an innovative, impenetrable layer of defense.

"We have every reason to be deeply worried about Asian carp," Baker continued. "The carps have decimated the fisheries in every waterway they have invaded already—primarily the Mississippi, Illinois, and Ohio Rivers. They eat massive quantities of food, and they reproduce prolifically. Bi-national, peer-reviewed risk assessments conducted by the Canadian Department of Fisheries and Oceans have demonstrated conclusively that no Great Lake would be spared and that it only takes a few males and a few females for a population to be established."

Baker concluded: "The Brandon Road project, led by the US Army Corps of Engineers, represents the best in design and innovation, which is why the project has received broad, bipartisan support. Michigan and Illinois, together, have provided more than one hundred million dollars in non-federal, matching funds for this project, for which the entire basin is grateful." ✧

Noxious sea lampreys

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A team of fifteen scientists from six agencies found that the answer to both questions is a resounding "yes." The research team found that reductions in lampricide applications—a pesticide highly selective to lampreys—during 2020-2021 corresponded to a rapid increase in sea lamprey abundance. In Lake Ontario, sea lamprey population sizes increased over an order of magnitude (10x).

"Like a coiled spring, sea lamprey populations bounced back quickly when control was relaxed," said Dr. Ben Marcy-Quay, fish biologist with the U.S. Geological Survey, and lead author of the study.

"We also looked at multiple fish species in Lake Ontario, including lake trout, Chinook and coho salmon, and steelhead/rainbow trout, and found a substantially greater rate of sea lamprey wounds on fish following reduced treatment effort," continued Marcy-Quay. "Wounding on Chinook and coho salmon, specifically, increased over 10-fold. Our findings support observations by the anglers and fishery managers of fish riddled with sea lamprey wounds, some containing three or more wounds per fish."

"When life gives you lemons, make lemonade," quipped Dr. Nick Johnson, research ecologist with the U.S. Geological Survey, and co-author on the study. "When the COVID-19 pandemic significantly reduced sea lamprey control for two years, our research team made the most of the situation by using it as an unplanned experiment to learn valuable information—nearly impossible to obtain otherwise—about the current impact of control on sea lamprey populations."

"Ongoing, consistent sea lamprey control is critically important for preventing damage to Great Lakes fish by invasive sea lampreys," explained the Hon. Ethan Baker, chair of the Great Lakes Fishery Commission and Mayor of the City of Troy, Michigan. "This research shows that sea lamprey control must continue each year to keep populations of this harmful invasive species in check. If we take our foot off the gas, even for a short while, sea lamprey populations will increase rapidly and cause considerable damage to fish."

Baker concluded, "Fishing is a way of life in the Great Lakes region. The health and happiness of millions of people are tied to the lakes. Sea lamprey control is critical to safeguard the prosperity of the region."

This research was conducted in collaboration by the U.S. Geological Survey, Fisheries and Oceans Canada, New York State Department of Environmental Conservation, U.S. Fish and Wildlife Service, Ontario Ministry of Natural Resources, and Great Lakes Fishery Commission.

Read the full study, "Sea lamprey control reduction during the COVID-19 pandemic corresponds to rapid increase in sea lamprey abundance," published in the journal *Fisheries*: https://doi.org/10.1093/fshmag/vuaf020. ✧

Nearly 4,000-acre Fish & Wildlife Area opens in southern Indiana

The Indiana DNR has officially opened nearly 3,950 acres of permanently protected land in Sullivan County for visitors to enjoy. Known as Busseron Creek Fish & Wildlife Area (FWA), the land includes forests, woodlands, marshes, swamps, lakes, and grasslands. Busseron Creek FWA is the largest addition to Indiana DNR-managed property since 2005, when the initial 7,998 acres of Goose Pond FWA were officially acquired.

"Today's a day for the record books," said Suzanne Jaworowski, Indiana Secretary of Energy and Natural Resources. "With the addition of nearly 4,000 acres of permanently protected Indiana landscape, Hoosiers and wildlife alike gain an expansive natural place ready for exploration. I'm thankful for the many partners who came together to achieve this record achievement in conservation."

This permanently conserved land was once part of the former leased Minnehaha FWA. It was protected through a collaboration with the Conservation Law Center, leader of the Southern Indiana Sentinel Landscape; The Conservation Fund; National Fish and Wildlife Foundation through Walmart's Acres for America Program; The Nature Conservancy (TNC); and the U.S. Navy, the Naval Surface Warfare Center (NSWC), Crane Division, and Naval Support Activity (NSA) Crane.

DNR paid $10.8 million for the property, a total that includes funding support from hunters, trappers, and recreational shooters via the Wildlife Restoration Program. Authorized by Congress in 1937, the program deploys the manufacturer taxes on ammunition, firearms, and archery equipment to restore, conserve, and manage wild birds and mammals and their habitats.

The U.S. Navy paid an additional $910,000 to support a conservation easement on a portion of the land through the Department of Defense's Readiness and Environmental Protection Integration program, and a $600,000 grant from National Fish and Wildlife Foundation through Walmart's Acres for America program also supported the acquisition.

"The Conservation Law Center is excited to lead an incredible project like this through the Southern Indiana Sentinel Landscape partnership, which brings together private, state, and federal funding to unite around a common vision of strengthening national security, enhancing conservation, and supporting thriving rural landscapes," said Michael Spalding, coordinator of the Southern Indiana Sentinel Landscape.

This land will provide key habitat for wildlife including turkey, deer, waterfowl, rabbit, quail, and numerous species of migratory songbirds. DNR has established hunting units, parking areas, and access trails and will continue adding infrastructure to improve visitor accessibility on site. The property will be a prime spot for wildlife viewing, hunting, trapping, fishing, and foraging, and is expected to be utilized by hunters during the upcoming spring turkey season.

For more than 30 years, DNR leased this property, operating it as Minnehaha FWA. In 2016, the property owner declined to renew its lease with the state, and Minnehaha FWA closed.

In 2022, a small parcel of this property was listed for sale, signaling the potential for securing the entire holding. In partnership, The Conservation Fund and Southern Indiana Sentinel Landscape negotiated with American Land Holdings of Indiana, a subsidiary of Peabody Energy, to purchase the full 3,950 acres to maintain the ecological integrity of the land. The Conservation Fund's pre-purchase of the property for future public ownership allowed DNR to officially purchase the property in December 2024.

"The Conservation Fund was able to act quickly to purchase this at-risk land, valued at over $12 million, allowing critical time to secure public and private funding for permanent protection," said Emy Brawley, vice president at The Conservation Fund. "The Busseron Creek Fish & Wildlife Area means so much to so many people, and The Conservation Fund is honored to have played a leading role alongside such great partners to ensure this land benefits communities and the environment forever."

The property is located near the Lake Glendora Test Facility, an area of NSA Crane operated by NSWC, Crane Division. The facility's mission is to support proof of concept testing for risk reduction purposes prior to full scale or open water testing.

Visit **on.IN.gov/busseroncreekfwa** to learn more and access video of the property.

More information about Busseron Creek FWA and the land's history is **available here**. ✧

Restoring Habitat for Great Lakes Fisheries on New York's Salmon River

The Salmon River in Oswego County, New York, is home to significant numbers of trout and salmon, making it a popular location for recreational fishing. It's also the location of a state operated fish hatchery that supplies fish for more than 100 public waterways, including Lake Ontario. But erosion, sedimentation, and changes in water flow have degraded the habitat in the Salmon River, threatening the health of fish that live, grow, and reproduce there. We are supporting efforts to prevent erosion and restore habitat on the river to support Great Lakes native fish species.

The Lake Ontario Committee represents fishery management agencies of Lake Ontario. The Committee identified restoration projects on the Salmon River as a priority for Atlantic salmon and rainbow trout. Atlantic salmon are native to Lake Ontario, though due to habitat destruction were historically lost from Lake Ontario. Fishery managers are restoring Atlantic salmon populations in Lake Ontario, focusing on stocking and habitat restoration, particularly in key locations like the Salmon River. These restoration efforts are funded through the Great Lakes Restoration Initiative and NOAA's partnership with the Great Lakes Fishery Commission.

Anglers fish in the Salmon River, shown here after several structures associated with an abandoned railroad trestle bridge were removed. Credit: New York State Department of Environmental Conservation.

Restoration at the Salmon River Trestle Pool

The Trestle Pool is one of the many popular fishing spots along the Salmon River. The area has several structures associated with an abandoned railroad trestle bridge that remained in and around the river. The central pier of the trestle stood in the middle of the river, creating a shaded pool where fish would congregate.

But while the pool was attracting fish to the area, the trestle structures were degrading the habitat on which those fish relied. By disrupting the natural flow of the river, the structures were causing an increase in the amount of sediment. This risked smothering habitat that native species such as Atlantic salmon use for spawning. They also were causing water to back up during high flow events, eroding stream banks along the river and further degrading fish habitat.

NOAA provided nearly $390,000 in Great Lakes Restoration Initiative funding to help remove the central pier and south abutment structures of the trestle bridge in 2023. This work is helping to restore the river to more natural conditions and improve habitat used by native Great Lakes fish. With the south abutment removed, water from the river can now flow into the floodplain during high water events, reducing the risk of downstream erosion. Removal of the center pier also eliminated a hazard that was impacting navigation on the river, including drift boats often used by the sport fishing community.

Additional work at the trestle pool project site, including replanting areas disturbed by construction, is expected to be completed in 2025. The project will wrap up with the installation of 600 feet of large wood structures—called "toe-wood"—along the base of the stream bank. Toe-wood helps stabilize stream banks while also providing shade and habitat for aquatic species, including important rearing habitat for juvenile Atlantic salmon.

Phase 3 and Beyond

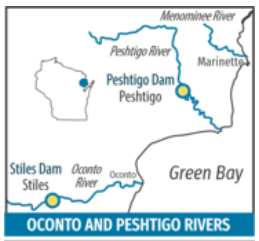
NOAA provided another $300,000 in funding to support restoration downstream of the trestle pool. This phase of the project will install in-stream structures, including toe-wood, to help stabilize the stream bank. These structures will help improve rearing and spawning habitat for Atlantic salmon, reduce erosion, and restore natural habitat and flow to the river. Construction is expected to begin in 2025.

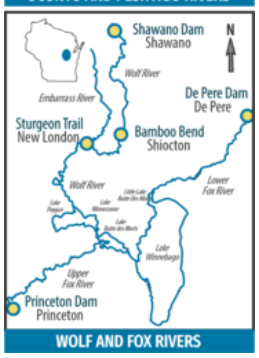
These projects will help support Atlantic salmon and other native species in the Salmon River. They will complement several other restoration projects already completed by the New York State DEC. Dan Bishop, NYSDEC Regional Supervisor of Natural Resources for Region 7, notes that "in addition to the habitat benefits provided to the native species, the projects are expected to benefit other fish species, including the Pacific salmon and steelhead rainbow trout, that support important fisheries."

Each project will include monitoring to ensure the project is functioning as designed. Track monitoring information for the Trestle Pool project and Phase 3 project.

"Nearly 350,000 people fish New York's Great Lakes and their tributaries each year, comprising 7,800 fishing days," said Marc Gaden, Executive Secretary of the Great Lakes Fishery Commission. "The importance of restoring and protecting habitat to support this thriving fishery cannot be overstated. The Commission has long supported the restoration of Atlantic salmon in Lake Ontario and the great work being done in the Salmon River through this partnership is a significant step forward in that effort." ✧

Sturgeon Spawning Is Underway





As of May 2, sturgeon are gathering in higher numbers on the Peshtigo and Lower Fox Rivers. Here's a look at where sturgeon are throughout the Winnebago System:

Princeton Dam, Upper Fox River: Sturgeon are no longer spawning at this location.

Sturgeon Trail, New London, Wolf River: Sturgeon are no longer spawning at this location.

Bamboo Bend, Shiocton, Wolf River: Sturgeon are no longer spawning at this location.

Hwy 156: No activity to report.

Shawano Dam, Wolf River: Some sturgeon can still be seen spawning. However, now's the time to see them as biologists predict that spawning activity will stop soon.

De Pere Dam, Lower Fox River: Sturgeon have showed up below the De Pere Dam. There was about 50 fish around with a few spawning pods observed this afternoon.

Peshtigo Dam, Peshtigo River: Sturgeon are still staging below the Peshtigo River dam. Flows have increased considerably in the last 24 hours but viewing conditions from the Peshtigo River viewing platform are expected to improve by the weekend when sun is forecasted. Sturgeon are still not actively spawning.

Sturgeon patterns can change rapidly. Though they may be at one location in the morning, they may not be that evening. As a result, if you'd like to see them at a certain location, make sure you get out and see them soon.

Updates will be made on our sturgeon spawning webpage as changes occur. ✧

ODNR Reminder for Boaters: Life Jackets and Engine Cut-Off Switches Save Lives

Simple safety steps make every day on the water safer

COLUMBUS, Ohio – As Ohioans prepare to head to the water this spring and summer, the Ohio Department of Natural Resources (ODNR) urges boaters to prioritize safety this National Water Safety Month by being aware of two key pieces of boating safety gear: life jackets and engine cut-off switches.

"Every time you head out to paddle or enjoy a day on a boat, safety needs to come first," said ODNR Director Mary Mertz. "Wearing a life jacket and using an engine cut-off switch are two simple steps that can prevent tragedies and save lives. We want everyone to enjoy Ohio's waterways—and that means making smart choices before your adventure begins."

Life Jackets: Always in Style
Wherever your water adventures take you, wearing a life jacket is essential. Regardless of age or experience level, life jackets save lives.

Before you launch, check that your life jacket is U.S. Coast Guard approved, fits properly, and is in good condition. Seasons may change, but one look never goes out of style—a life jacket!

Engine Cut-Off Switches: Plan for the Unexpected
An engine cut-off switch on a powerboat is a key safety feature that can stop a boat's engine in the event of an emergency

No one plans on falling overboard, but accidents can happen fast. In addition to wearing a life jacket, always use an engine cut-off switch (ECOS). Most powerboats and PWC (personal watercraft) come equipped by the manufacturer with an emergency engine cut-off switch (ECOS). If properly worn, this safety device can shut off the engine if the operator falls off the vessel or is thrown from the proper operating position. This simple, proven lifesaving device stops the boat's engine if the operator is thrown from the controls, preventing runaway boats and serious propeller injuries.

Most propeller-related injuries and fatalities are preventable by using an ECOS. Plan for the unexpected: use an engine cut-off switch every ride, every time.

Before You Go: The Safe Boater's Checklist
✓ Life jacket: secured and fitted properly
✓ Engine cut-off switch: attached and ready
✓ Fun day on the water: just ahead

Throughout National Water Safety Month, and the entire boating season, ODNR encourages everyone to remember: a fun day on the water includes all the right gear, especially your life jacket and engine cut-off switch.

For more information about boating safety, including helpful resources and seasonal tips, visit ohiodnr.gov/boating. ✧

The Truth about Crayfish – What anglers need to know

Crayfish, commonly called crawfish, provide critical forage for bass and other gamefish. Understanding crayfish biology can help you catch more fish.

Of the more than 640 species of crayfish (crawfish, crawdads, mudbugs) known worldwide, about 400 live in fresh waters in the United States. Most occur east of the Rockies, and the greatest diversity is in the Southeastern states. Many crayfish live in streams, rivers, lakes and reservoirs. Others live in springs, swamps and other temporary waters, and caves. The focus here is those in permanent waters where anglers fish, and crayfish are ubiquitous in these waters.

Crayfish are eaten by all predator fish, and they rightfully can be considered bass candy. They live on the bottom in deep and shallow water. And they are often abundant, with standing crops of 200 to 500 or more pounds per acre in productive lakes or streams with good habitat, several times the biomass of the fish that consume them in the same water.

As would be expected from such a diverse group, crayfish come in many sizes, shapes, and colors. Adults typically range from two to three inches body length, from head to tail, excluding the chelae (pincers). Body shapes are slender to robust. Some have smallish chelae. Others are armed with very robust chelae. As a group, crayfish are colorful, some even vibrant. Some species are predominantly blue or blue and purple, others a bright green, and many with distinct red or blue markings. But most are rather drab to remain hidden in their environment.

Many anglers think red and orange are crawfish colors. Maybe because they're thinking of the red swamp crawfish, which are dark red and black, they ate at the last crawfish boil. Or maybe they are trying to match the color of a partially digested craw that a bass just regurgitated in the livewell. That could be misleading because the process of digestion affects the pigments in the crayfish skin the same way as boiling turns a lobster red.

Accomplished bass pros Dion and Guido Hibdon were noted for capturing crayfish from tournament waters and hand-tying jigs to perfectly match their colors. A very ambitious effort. Although colorful as a group and with much variation between and within species, the majority of crayfish in lakes and rivers are olivaceous (think green pumpkin) or tan to light brown (think pumpkin pepper). With most lakes harboring multiple species, these two colors are a good default crayfish mimic unless you luck into a bass willing to part with a freshly ingested crayfish or want to get wet turning over rocks.

What about seasonal color changes? Red and orange hard baits, like the BOOYAH Hard Knocker or Bomber Deep Flat A are proven bass catchers in the spring. Numerous websites attribute bass' preference for red to crayfish color at this time of year. These are all fishing websites. A deep search of the scientific crayfish literature revealed that some crayfish can change color to better blend with their background, that males may be more brightly colored during mating season (which is usually in the fall), and recently molted crayfish are often lighter color. What I did not find was any reports of red-phase crayfish in the spring. The take away message: Keep fishing red and orange colors if they work in your waters, but don't count on the notion that you are mimicking a spring crayfish.

CRAYFISH LIFE CYCLE

Most crayfish mate in late summer or fall. The male deposits sperm in the female's sperm receptacle where they are stored. Eggs are fertilized when released, which varies among species but commonly occurs in the spring in temperate-zone species. The female carries the fertilized eggs glued to small appendages on the underside of her abdomen. A female carrying eggs (developing embryos) is termed "berried" or "in berry" because the cluster of eggs looks like blackberries. Depending on species and age, a female may carry a couple dozen to more than 700 eggs. The berried female remains in hiding until the eggs hatch, which could take from two to ten months depending on crayfish species and water temperature.

The young resemble tiny crayfish when they hatch. They grow quickly. Their hard, protective exoskeleton (shell) does not grow or stretch. As crayfish grow, they shed the existing exoskeleton (molt); underneath the old exoskeleton is a new, soft exoskeleton that allows for growth and then hardens over a period of several weeks. Lacking their hard exoskeleton that both protects them and makes their chelae useful feeding tools and defense weapons, these highly vulnerable "soft shell" crayfish are especially secretive. Molting may occur six to 14 times during a young crayfish's first year as they quickly grow to small adult size. Molting occurs less frequently for adults, decreasing to one to three molts per years for older adults.

Depending on species and climate, crayfish become sexually mature at age 1 or 2. Although some Australian crayfish live as long as 30 years, most crayfish in the U.S. live two to six years.

CRAYFISH BEHAVIOR

Survival is job one. Although seemingly well armed with large claws and able to rapidly scoot backwards a foot or more when startled, crayfish are highly vulnerable to large predators like largemouth and smallmouth bass. Their survival depends on remaining hidden among and under rocks and logs or camouflaged on the bottom. Like fish,

The Truth about Crayfish - *continued*

crayfish, have habitat preferences. One study in Lake Tahoe found crayfish densities in rocky areas double those in areas of vegetation and ten times greater than on bare sand flats. Different species will have different habitat preferences, but some form of cover will usually be selected. To better ensure survival, they tend to be more active at night than during the day.

Crayfish are opportunistic feeders, eating both dead and living plant and animal matter. The young crayfish tend to be more carnivorous, feeding on aquatic insect larvae. Crayfish do consume zebra and quagga mussels, unfortunately not at a rate sufficient to suppress these unwanted, non-native mussels.

Crayfish walk forward and escape backwards by tail flips—rapidly flexing their tail section and pulling their telson (tail fan) under their body to propel themselves up to a couple of feet per flip. Something to ponder when you are fishing a soft plastic craw mimic like a YUM Craw Papi on the bottom or selecting and retrieving a craw-imitating crankbait. When you catch a bass with a crayfish in its stomach, invariably you see the chelae sticking out from the bass' throat. Dr. Brian Roth, crayfish expert at Michigan State University and an avid angler, has observed that fish often ingest crayfish tail first as they are tail flipping, and they may nip at the crayfish to induce movement to get a tail-first bite.

Multiple mark-recapture and tracking studies suggest crayfish generally don't move far on a daily basis. Little is known about crayfish seasonal movement, but one study found crayfish in Lake Tahoe moved to deeper water in the winter. Although crayfish usually move only short distances daily, they can walk up to a couple hundred yards a day when active. An interesting—unusual may be a better term—phenomenon that I observed in two different Minnesota lakes in mid-summer is a mass movement. Afforded a good view by the clear water, I watched many thousands of crayfish walking across a mostly barren, shallow sand flat. It appeared like a crayfish-patterned carpet was being slowly pulled across the bottom. Especially unusual is that these movements occurred at mid-afternoon, in bright daylight. Not a bass was seen enjoying the unlimited buffet. I have not been able to find an explanation for the events.

Crayfish do not become dormant in the winter; but, like most cold-blooded animals, their activity diminishes. Some researchers have suggested feeding stops, and they stay hidden. How much their activity decreases and they stay hidden will vary from southern to northern waters, but it is reasonable to conclude that fewer crayfish are consumed by bass in the winter. But that doesn't mean bass' appetite for crayfish has diminished, and a slow-moving crayfish mimic may be just what it takes to trigger a strike from a lethargic cold-water bass.

6 GREAT CRAYFISH IMITATING LURES

- **Rebel Wee-Crawfish**– a longtime favorite craw-imitating hard bait that is especially popular for stream fishing
- **Rebel LIVEflex Creek Craw**– new to Rebel, with natural shaping, buoyancy, toughness and fluid motion
- **Great Lakes Finesse Juvy Craw**– tube style, with crayfish shaping; ideal for moving along the bottom
- **Bandit 200 – Bone Craw Series**– natural markings, sized right to match many craws and well suited for grinding rocky bottoms
- **War Eagle Heavy Finesse Jig/YUM Salt Craw**– subtle. natural and excellent for working every bottom contour
- **YUM Spine Craw**– narrow profile and quick claw movement equip this craw for a range of applications ✧

High Numbers for 2024 Lake Michigan Harvest

Lake Michigan anglers enjoyed a stellar harvest of Chinook and coho salmon as well as steelhead in 2024.

A record number of coho were harvested last year, with over 210,000 caught. In addition, anglers caught over 160,000 Kings, the most since 2012. Recent years' classes of alewives increased the survival of these stocked fish. View Lake Michigan fish harvest information for previous years. The fishing season. is already off to a great start with anglers catching steelhead in tributaries and anglers targeting the early coho bite. Learn more about Lake Michigan fishing on the DNR website ✧

Changes made to stream trout stocking

The Indiana DNR has made changes to previously announced rainbow trout stocking plans because of a shortage of that species at the hatchery. Nineteen streams across 13 counties were stocked with trout before April 26, the opening day for trout, but some locations didn't receive the planned amount of rainbows. Some were supplemented with brown trout. The streams affected will receive no more rainbows; however, nine of them will be stocked with brown trout this month. The brown trout to be stocked range from 8-12" long.

The bag limit for trout in inland waters other than Lake Michigan and its tributaries is five per day with a minimum size of 7". No more than one of an angler's catch can be a brown trout. There is no size limit for trout on inland lakes except for any harvested brown trout caught below the Brookville Lake tailwater or from Oliver, Olin or Martin lakes. Those trout must be 18 inches or larger to be kept.

To fish for trout, anglers age 18 and older need an Indiana fishing license and a trout/salmon stamp. To purchase yours for this year, visit GoOutdoorsIN.com. ✧

Other Breaking News Items:
(Click on title or URL to read full article

Meet the people trying to keep a prehistoric fish alive
In Ontario, lake sturgeon is a culturally significant and nutritionally important species for many communities. It's also Ontario's oldest fish, but that legacy could blink out without help and dedicated conservation

Great Lakes angling brings in buckets of fish, money
According to a recent study, recreational fishing trips in the Great Lakes generate $884 million per year. It found that almost 9 million people over age 18 were licensed to fish in one of the Great Lakes at the time of the study's data request during the 2020 season

'Best place to be': Port Washington receives 60,000 salmon for summer fishing season
Ozaukee County's main marina in Port Washington, Wisconsin, received a shipment of 60,000 salmon from the Wisconsin Department of Natural Resources in preparation for the summer's charter fishing ventures

DNR Publishes Successful Sturgeon Spearer List for 2025 Season
After a memorable sturgeon spearing season, the 2025 Successful Spearers List is now available. A total of 943 lake sturgeon were speared across the Winnebago System in 2025. Congratulations to all who were able to get out safely and find success on the ice!

Minnesota DNR works to tag steelhead trout on Knife River to understand population decline
Steelhead, a type of rainbow trout that head to the Knife River in Minnesota's North Shore to spawn, have experienced dramatic population decline over the past decade. The Minnesota DNR is weighing, measuring, and tagging the fish to learn where they're coming from, where they're going, and why their numbers have dropped

Illinois governor still awaiting Trump guarantee on $1.15B for invasive carp
Governor Pritzker of Illinois said he's still awaiting written guarantees that the federal government will fund the $1.15 billion project to block invasive carp from reaching the Great Lakes. The U.S. Army Corps of Engineers needs Illinois to transfer property in order to begin construction on the long-awaited fortifications at a chokepoint dam on the Des Plaines

Lake Erie sees rise in water levels in April. How high are the levels?
After the seasonal decline during the winter months, the water levels in Lake Erie are on the rise again and the U.S. Army Corps of Engineers predicts the levels will rise for the next six months. Current levels are around the long-term average for

At long last, Lake Erie-Niagara River ice boom to be removed
In accordance with the International Joint Commission Order of Approval governing its operation, preparations are now underway for the New York Power Authority to begin removal of the Lake Erie-Niagara River Ice Boom as ice conditions

Sport fish stocking boosts conservation efforts and local economy
The Lake Ontario Trout and Salmon Association partnered with the New York Department of Environmental Conservation to stock more than 150,000 fish into Lake Ontario.

Kenosha nonprofit restores Lake Michigan's ecosystem by stocking 40,000 salmon
The Kenosha Sportfishing and Conservation Association received 40,000 Chinook salmon fingerlings from the Wisconsin DNR at the Kenosha Salmon Rearing Pond. The nonprofit group is working to restore Lake Michigan's ecosystem by.

Great Lakes are starting to rise but forecasted to stay low into summer
The Great Lakes water levels have started their seasonal rise as the snow has melted and spring rains begin. While the water levels have increased in the past month, all Great Lakes are still several inches below their levels at the same time

A changing ecosystem is depleting the whitefish population in the Great Lakes
Commercial fishing on the Great Lakes was built on lake whitefish, but for the past two decades, that species has been on the decline. It's now on the brink of collapse in parts of two of the Great Lakes with scientists searching for ways to save

End