

Fisheries Division

Annual Report 2021



The mission of the DNR Fisheries Division is to protect and enhance Michigan's aquatic life and habitats for the benefit of current and future generations.

Michigan.gov/Fishing

Goal 1 – Ensure Healthy Aquatic Ecosystems & Sustainable Fisheries

Thompson State Fish Hatchery, new cool-water production facility completed



With completion of the new coolwater rearing facility at Thompson State Fish Hatchery in Manistique, the DNR Fisheries Division took a significant step to help ensure sustainable fisheries for many years to come. The new facility is designed to help the statewide effort for rearing and stocking both walleye and muskellunge. This multi-year capital outlay project was completed in late April 2021 and was quickly put to good use.

The facility consists of an incubation building, a solar pond for prewarming rearing water, two 1-acre rearing ponds, four half-acre rearing ponds and an external

harvest kettle to centralize harvesting fish for stocking. To help with rearing and pond longevity, a thick, rubbery membrane lines each pond. Every pond is also covered by netting to deter birds from preying on the fish. The system is essentially designed for double-cropping, to produce spring fingerling walleye early in the year and then be used again for rearing fall fingerling muskellunge.

The first year of walleye incubation and rearing was purely experimental, with any spring rearing doubtful until the last possible moment due to ongoing construction. Once the occupancy permit was received, hatchery staff had only a very short time window of time to gain experience working with the new system, while simultaneously getting the incubation area ready to receive eggs. The experience and knowledge gained during this process should have a significant long-term benefit, allowing the DNR Fisheries staff to produce several million fry per year for transfer to other grow-out ponds, plus to be able to rear up to 250,000 spring fingerling walleye for stocking.

By mid-summer, all construction and system tests were complete, which fully opened the door for the first year of muskellunge rearing. The goal set for the facility was to rear up to 18,000 muskies for stocking. In late summer, approximately 30,000 fingerlings were transferred from Wolf Lake State Fish Hatchery to Thompson State Fish Hatchery and put into the four half-acre rearing ponds, timed perfectly to when their diet would transition to minnows. Fathead minnows were added as needed to feed the hungry and fast-growing muskies. Harvest occurred in November, with an impressive total of just over 20,000 muskies being stocked, averaging over 9 inches long.

Progress toward protecting the Great Lakes from invasive carp

In 2021, Michigan contributed \$8 million from general fund money to assist with the Brandon Road Interbasin Project to prevent invasive bighead, silver, and black carp from entering the Great Lakes. This cost-share, combined with both Illinois funds and federal funds, was provided to the U.S. Army Corps of Engineers Project to develop engineering plans for constructing a layered technology barrier at Brandon Road Lock near Joliet, Illinois. The system of structural measures will deter invasive carp from passing through the lock. Brandon Road is a critical pinch point for keeping invasive carp out of the Great Lakes, in that fish cannot pass over the dam and can only pass through the confined lock area. The additional technologies – including an electric barrier, underwater sound, an air-bubble curtain and a flushing lock – in a newly engineered channel are designed to prevent invasive carp movement while allowing barge traffic to pass through. In 2021, Congress authorized the construction of the project, a necessary step before funding could be appropriated. In January 2022, USACE announced that \$226 million from the Infrastructure Plan funding would be used toward finishing the designs and beginning construction of the project in 2024. A final step toward construction will require a signed agreement between Illinois and USACE committing to the development of the project.



While no live bighead, silver or black carp have been found in the Great Lakes, they are close enough to be considered an imminent threat. A series of three electric barriers 37 miles from Lake Michigan in the Chicago Area Waterway System are currently the last line of defense before the Great Lakes. There is no question that invasive carp would thrive in the Great Lakes region, particularly in places such as Saginaw Bay, Lake Erie and all of Michigan's inland lakes and waterways. A binational risk assessment by the United States, Canada and the Great Lakes Fishery Commission concluded that the Chicago Area Waterway System poses the greatest risk for invasive carp being introduced into

the Great Lakes. The report noted that as few as 10 males and 10 females in the Great Lakes could provide a reproducing population.

Bighead and silver carp have expanded rapidly in the Mississippi, Missouri, Ohio and Illinois rivers, and continue to colonize other waterways in new locations. Invasive carp are long-lived fish that reproduce prolifically and can become very large, sometimes nearing 100 pounds. Bighead and silver carp are filter feeders, filtering plankton out of the water column. Due to their size and abundance, bighead and silver carp can consume a great volume of plankton, competing directly with native species, particularly at young life stages. In places where bighead and silver carp have invaded and are at high abundance, the local fish communities and recreational opportunities have suffered. Invasive bighead, silver and black carp could significantly alter the Great Lakes ecosystem, affecting the \$7 billion fishery and \$16 billion boating industry as well as other tourism-based industries, property owners, outdoor enthusiasts and others dependent on the Great Lakes and its tributaries.

The construction of the Brandon Road Project is vital for a long-term, layered technical solution that will protect the Great Lakes from invasive carp. [Click here for more information.](#)

DNR finalizes walleye management plan for inland waters

Walleye is a high-priority species for management in Michigan because of its ecological, social and cultural significance. Walleye play a significant ecological role as a top predator and provide fishing opportunities for anglers. There are many emerging threats to walleye populations in Michigan, and there will be increasing management challenges related to the protection and conservation of this native species.

In 2021, the DNR Fisheries Division finalized a plan entitled Management Plan for Walleye in Michigan's Inland Waters that will formalize management strategies for walleye populations in Michigan. The overarching goal of this plan is to protect, conserve and adaptively manage walleye populations to maximize ecological benefits and angler satisfaction derived from healthy walleye populations and fisheries. The new plan focuses on walleye populations in inland waters and provides an overview of:

- The status of the species in Michigan.
- The biology and ecology of inland walleye populations.
- Angler perceptions about walleye management and fishing opportunities.
- Previous management efforts.

The plan also identifies several management goals that broadly address ecological and social characteristics of walleye fisheries, because both elements are key to successful species management. The plan accounts for habitat

suitability and describes recommended actions to efficiently and effectively protect and conserve walleye populations throughout the state. Specific strategic actions to achieve the plan's goals and objectives are described and will be implemented in a manner that considers the potential limitations associated with operational costs, available funding, fisheries management priorities and the best available science.

The DNR Fisheries Division developed the newly approved plan with assistance from Michigan State University Fisheries and Wildlife Department faculty. Additionally, consultation with tribal governments and feedback from other state natural resource agencies, citizen advisory committees and anglers was critical to inform and revise early versions of the plan. DNR Fisheries Division appreciates the input and comments provided by the public to finalize the walleye management plan. To learn more about the walleye species and management efforts, visit Michigan.gov/Walleye.

Goal 2 – Promote Effective Communication, Outreach & Education



Staff embarking on structured decision-making for the Au Sable River

Michigan rivers are currently experiencing a host of stressors, including impacts from invasive species, fragmentation by dams and other barriers, degradation from activities in watersheds and changes in our climate. To address potential management actions that deal with these stressors, the DNR Fisheries Division has teamed up with Michigan State University, other DNR divisions and a multitude of stakeholders as part of a structured decision-making working group. The goal of this effort is to develop a process that can be used to assess and ultimately enhance the resilience and

sustainability of Michigan's rivers and fisheries, beginning with the Au Sable River. The team, including 22 external stakeholders and 12 DNR and MSU staff members, was formed in the spring of 2021 and has been working on developing a framework to first, identify the scope of the problem related to ecological resilience of the Au Sable River, second, identify a suite of objectives that should be achieved, including a set of management actions that could be taken, and third, predict the consequences of each action on each of the objectives, as well as account for key uncertainties in the system, through the use of predictive modeling and other quantitative and qualitative methods. Ultimately these results, applied with stakeholders and decision-makers in lock step, will allow the DNR to make difficult management decisions by being able to consider all of the tradeoffs among a complex set of objectives.

Staff incorporate changes to registration process for Black Lake sturgeon season

As with many departments, the DNR Fisheries Division needed to make adjustments during the COVID-19 pandemic. The Black Lake sturgeon season, when hundreds of anglers gather to register to harvest sturgeon, takes place annually in February. To limit large gatherings during 2021 registration, the DNR Fisheries Division developed an online registration process, so DNR personnel and anglers did not need to meet face-to-face to register.



We developed an online registration process for 2021 and then further refined a permanent solution for online registration process that includes an online registration that not only collects the anglers name, address and cell phone number, but also verifies that their fishing license number is valid and active.

In addition to online registration, notification of a sturgeon harvest on Black Lake also improved with anglers required to provide their cell phone number so they can receive text messages when a sturgeon was harvested. Notification is crucial because a harvest limit is designated. All anglers registered for the event are sent a text message at the opening of the season as well as one for each fish caught and the close of the season and overharvest has been avoided using texts compared to contacting each angler on the ice.

Advancements in registration and notification via text messages continue to be implemented by DNR staff to benefit angler experience and improve procedures and processes of DNR Fisheries Division staff.

Seasonal fishing forecast videos return to provide Michigan anglers fishing predictions and locations

In an effort to provide regional fishing predictions and suggest fishing locations, the DNR Fisheries Division relaunched its seasonal fishing forecast video reports in April 2021. DNR fisheries staff representing the basins across the state developed forecasts, with video reports shared on the department's social media accounts and in the weekly fishing report.

Prior to the relaunch of the seasonal fishing forecasts, the last forecast was shared in April 2017. The DNR intends to continue these videos to provide predictions and fishing location suggestions for Michigan anglers to enjoy.

Goal 3 – Improve & Build Strategic Resource Partnerships

Fisheries Habitat Grant Program provides over \$2.1 million in funding to conservation partners for aquatic habitat

In 2021, the Fisheries Habitat Grant Program awarded over \$2.1 million in funds to 13 partner conservation organizations implementing 17 grants. The projects, supported by an additional \$616,000 in matching contributions, will rehabilitate, protect, and assess valuable fish habitats that provide the foundation for Michigan's world-class fisheries. Eleven of the funded projects are priority habitat conservation projects as identified by the DNR Fisheries Division.

The Fisheries Habitat Grant program provides funding for a variety of activities including fish habitat conservation, dam removal and repair, resource assessment studies and access to recreation opportunities like fishing.

Funding from fishing license sales, State of Michigan general funds and a settlement with Consumers Energy is distributed through three grant areas: aquatic habitat conservation, dam management, and aquatic habitat and recreation in the Au Sable, Manistee and Muskegon rivers watersheds.



The funded projects will protect and rehabilitate fish habitats across the state, while in many cases improving public safety by removing dams. Of the funded projects, seven are dam removal engineering or feasibility projects, four are dam removal projects, four are inventories of habitats or aquatic species, one is a culvert replacement, and one is a shoreline erosion control project reducing risk of railroad accidents along the Pere Marquette River.

When completed, these projects will ultimately reconnect fish passage on over 250 miles of streams, including cold-water habitats that provide greater resilience to warming on some of the state's premier trout and salmon rivers such as the Au Sable, Boardman, Pere Marquette and Muskegon. Researchers and managers will gain valuable new information about inland lake aquatic vegetation and mussel populations to inform permitting decisions affecting these habitats and resources. New information on northern Michigan trout stream temperatures will also be gathered, enabling more effective habitat conservation and other management for these fish.

For the first time, the grant issued conditional commitments to projects through this newly developed mechanism. In the past, the grant was only able to provide "last dollars" to projects, because if the project fell through, the funding could be difficult or potentially impossible to reallocate. This requirement to have all matching funds in hand limited the number and scale of applications, and it meant that recipients were not able to leverage DNR funds when seeking federal, private, or other sources of funding. The new conditional commitments allow recipients to leverage DNR commitments from future fiscal years to apply for additional external funding without risking DNR funds should the project not acquire necessary funding.

Partnerships to improve prey fish assessments in Lake Michigan

On Lake Michigan and other Great Lakes, annual prey fish (e.g., alewife, smelt, chubs) surveys are aimed at providing relative measures of prey population abundance. These surveys offer crucial information needed to support intensive trout and salmon management. However, at over 14 million acres and exceeding 900 feet in depth, the physical size of Lake Michigan presents a significant obstacle to fisheries research and management. Multiagency collaborations have



been crucial to maximize spatial coverage and accuracy of annual surveys, including prey fish surveys, on Lake Michigan. Among the most valuable and longstanding partnership, started over 20 years ago, has been the Lake Michigan hydroacoustic survey, led by researchers with the Michigan DNR, U.S. Geological Survey and U.S. Fish and Wildlife Service. These agencies, operating three large research vessels in parallel with one another, perform over 250 miles of survey transects across the entire lake basin each August. As a direct result of this strategic multiagency partnership, the Lake Michigan hydroacoustic survey offers one of the most spatially comprehensive evaluations, by area and depth, of prey fish abundance in the Great Lakes.

Researchers sought to further improve the hydroacoustic survey in 2021 by partnering with the Saildrone Company, headquartered in California. Saildrone provides autonomous surface vehicles capable of continuous sonar, water quality and weather data collection over long deployment periods. Because Saildrone operates wind-powered sailing vessels, they are nearly silent to underlying fish. Continuous data collection and nearly silent vessel operation allowed researchers on Lake Michigan to not only collect many additional miles of hydroacoustic prey fish data but also to address several longstanding questions. Among the most important of these questions, to what extent do fish avoid noisy, diesel-powered research vessels, such as the DNR's survey vessel Steelhead, and what effect does this have on annual abundance estimates of prey fishes? To answer these questions, each of the vessels participating in the annual hydroacoustic survey spent several nights operating in close proximity to Saildrone vessels, collecting data that will allow comparisons of abundance estimates made from "noisy" versus "quiet" survey platforms.

Working with U.S. Geological Survey and U.S. Fish and Wildlife Service partners, DNR research staffers have continued to actively participate on a Silent Vessels Team. These research partners hold regularly scheduled meetings aimed at quantifying bias in acoustic fish abundance estimates. Ultimately, the research they conduct will be able to identify ways in which prey fish abundance estimates may be improved in the future. Most importantly, the outcomes of this ever-growing and evolving partnership will continue to improve understanding of Great Lakes prey fish populations in support of world-class fishery management.

Ongoing partnership with Alaska Department of Fish and Game



From the early days of Michigan's Arctic Grayling Initiative, the DNR Fisheries Division has formed many strategic relationships with various partner groups. In 2021, one partner organization – the Alaska Department of Fish and Game – went beyond what anyone could have reasonably expected.

Due to the COVID-19 pandemic, ADF&G cancelled the 2020 grayling egg take. With concerns of budgetary uncertainty, the State of Alaska then announced the indefinite suspension of its own Arctic grayling rearing program later in 2020, with no egg collection or rearing until further notice. This was potentially a huge blow to Michigan's Arctic grayling

reintroduction plans. At that point, only one of Michigan's three year-classes of future grayling brood had been established. The pandemic had already eliminated the 2020-year-class and missing another year might have not just delayed but possibly even ended the initiative. To ensure vigorous genetic structure, there needs to be more than one year-class of adult fish to avoid inbreeding, something that does not result from crossing same-age fish.

Even though ADF&G suspended its own spawning and rearing program, the department was still planning to complete some standardized studies on the source of its wild broodstock in the Chena River in spring 2021. This work would be happening just as the fish were ready to spawn. Due to this perfect timing and the strategic relationship established with the DNR Fisheries Division, ADF&G offered to spawn and complete initial incubation of eggs to supply Michigan's needs, using DNR Fisheries standard spawning methods for establishing future brood lots, without DNR assistance. The offer provided a much-needed lifeline for keeping Michigan's Arctic Grayling Initiative moving forward.

Complications with COVID-19 pandemic travel restrictions still created a barrier for the DNR Fisheries Division to get the eggs back to Michigan. But Michigan State University doctoral student Nicole Watson also needed eggs to continue her research and was able to travel and bring the eggs back from Alaska in a cooler as her carry-on luggage. Because of the strong strategic partnerships built with both ADF&G and MSU, the second year-class of brood eggs arrived at Oden State Fish Hatchery on May 25, 2021. Without the dedication and assistance of either partner, the attempt to reestablish Arctic grayling in Michigan would have been in serious jeopardy.

Goal 4 – Develop Strategically Focused Assessment & Decision Support Tools

DNR develops guidelines, policy and procedure for visual dam inspections



The DNR Dam Management Committee was formed in 2019 and charged with providing a common dam management platform to ensure consistency in evaluating dam infrastructure, specifically focusing on dams that are not regulated under Part 315 Dam Safety and Part 307 Inland Lake Levels of the Natural Resources and Environmental Protection Act. As of 2021, the Michigan DNR manages more than 200 dams, with about half of those regulated primarily under Part 315 Dam Safety and the other half not regulated by statute.

While dams regulated under Part 315 Dam Safety and Part 307 Inland Lake Levels are inspected on a three-, four-, or five-year schedule by qualified

engineers, unregulated dams do not have a required inspection schedule. In January 2021, the Committee and EGLE Dam Safety staff finalized the DNR Dam Management Guidelines Policy and Procedure, which requires staff to complete annual visual inspections of all DNR-managed dams using a standardized inspection checklist. The annual visual inspections are in addition to routine inspections by licensed, professional engineers at regulated dams. To accomplish the visual inspections, DNR Forest Resources Division Resource Assessment Section staff developed a mobile GIS Survey 123 application that incorporates the visual inspection checklist and a singular location for recording all maintenance activities and items requiring additional maintenance or engineering follow-up.

As a result of these efforts, visual inspections were completed on nearly all DNR-managed dams in 2021, a substantial accomplishment. This information is currently being used to help identify where additional resources may be needed for dam safety engineering or large maintenance projects.

Perhaps one of the most immediately useful outcomes of this effort is the ability to update our records on unregulated dams, some of which last received an engineering inspection in the early 2000s. Information shared by staff has allowed us to work with EGLE Dam Safety staff to update their dam database, including identification of dams that no longer exist or are under DNR management. By having accurate information, we will increase efficiency and allow for better prioritization of future dam management activities.

This effort is a great example of the DNR taking a leadership role in ensuring responsible management of Michigan's dam infrastructure.

Restoring natural resources

The Michigan DNR has been delegated authority to represent the State of Michigan on several natural resource damage assessment trustee councils along with the Michigan Department of Environment, Great Lakes, and Energy and the Michigan Department of Attorney General. Fisheries Division staff members participate on these councils and have an active role in assessing and valuing damages, establishing restoration priorities, overseeing restoration



projects and monitoring. In 2021, Fisheries Division staff worked on the Tittabawassee River, Saginaw River and Bay, Kalamazoo River, and Kalamazoo River – Enbridge Pipeline Rupture trustee councils.

The Tittabawassee River trustees reached a settlement with the Dow Chemical Co. on July 27, 2020, for injuries following the release of hazardous substances in past decades from Dow’s manufacturing facility in Midland. The settlement provides an estimated \$77 million for projects and funding that will restore injured fish, wildlife and habitats. Fisheries Division staff members are assisting with implementation of the settlement,

including projects that restore wetland and riparian habitat and prioritization of community-nominated projects.

The Kalamazoo River Natural Resource Damage trustees settled with NCR Corporation for \$25 million over the next 10 years to partially address natural resource damage stemming from past discharges of polychlorinated biphenyls into the Kalamazoo River. Staff assisted with assessing damages, developing the restoration plan and prioritizing restoration projects. The first project was completed in 2021 with the land acquisition of 140 acres in Allegan County, which will protect river and shoreline habitats and create a new nature preserve. Other projects that are in various stages of development include stream culvert replacements, stream bank stabilization, dam removals, wetland restorations and a wildlife corridor plan.

The Saginaw River, Saginaw Bay and Kalamazoo River Enbridge Pipeline Rupture restoration projects are mostly complete. The Saginaw River and Bay settlement to address polychlorinated biphenyls discharges from various sources provided approximately \$5 million for current restoration projects and committed funds for 1,670 acres of land acquisition for public ownership, coastal wetland restoration projects and environmental restoration programs. The Kalamazoo Enbridge Pipeline Rupture restoration projects included a major dam removal on the Kalamazoo River, restoration of woody habitat, funding of turtle research, lake enhancement and establishment of several new public access sites.

Although it is unfortunate that any damage occurs to our natural resources, dedicated staff, trustees, involved community members and partners, and current laws have ensured that the public is made whole now and for future generations by restoring your natural resources.

Eradication of invasive red swamp crayfish

The first documented population of invasive red swamp crayfish in Michigan occurred in July 2017. This invasive species is known throughout the world as one that has the potential to outcompete native species, degrade water quality, and impact infrastructure and shorelines due to their burrowing behavior. To address the threat, the DNR Fisheries Division has been partnering with Michigan State University, United States Geological Survey, Auburn University, cooperative invasive species management areas and additional partners to implement a multi-objective adaptive response strategy. With support from the Great Lakes Restoration Initiative, the collaborative efforts have included pathway-based risk assessments to identify likely sources of introductions (i.e., live food markets, classroom release, etc.), early detection of new infestations, genetic evaluations of sources and relatedness to determine early invasion dynamics, extensive manual removals via trapping, development of engineering-based control alternatives, and chemical treatments.



Major accomplishments of the multijurisdictional red swamp crayfish response team include improved understanding of introduction pathways (i.e., plausible sources of infestations), delineation of seven infestations, increased trapping efficiencies, removal of 150,000 invasive crayfish, evidence of population suppression, implementation of telemetry research to track crayfish movements and evaluation of several innovative control methods. Five years of intensive trapping, totaling 75,000 units of effort (mostly crayfish trap lifts) and removal of 150,000 invasive red swamp crayfish, has led to reductions in relative population abundance of the invasive crayfish and increased captures of native crayfish in several locations. However, trapping alone is not expected to result in eradication in small private ponds in southeastern Michigan. Chemical treatments are more

effective and efficient than manual removals and have been used successfully in the U.S. and Europe for eradicating or limiting the spread of invasive crayfish.

In 2021, results of the first experimental trial of a pyrethrin-based chemical treatment in the state indicated improved effectiveness that may lead to eradication of established populations. The number of red swamp crayfish captured in traps were reduced by approximately 90% immediately after treatment. Additionally, through the week of treatment a total of 1,360 red swamp crayfish were removed. In comparison, 1,725 invasive crayfish were removed via 2,469 units of trapping efforts in the two and a half months prior, indicating the chemical treatment was a more cost-efficient and effective method for invasive crayfish removal. Bioassays (i.e., caged crayfish) in the treated pond indicated 100% mortality for open-water crayfish for two days post-treatment and 0% mortality after six days, indicating the chemical was effective at treating open-water crayfish and had a relatively short toxicity period. Monitoring data of pyrethrin concentrations in the pond indicated a similar timeline, with water samples having nondetectable levels of pyrethrin after six days. The chemical treatment was not 100% effective at achieving eradication, as live crayfish were captured following treatment. Shoreline burrow excavations suggested that crayfish in burrows at the time of the pond treatment likely experienced a higher survival rate than the population of open-water crayfish. Data from several burrows that were directly chemically treated suggest that this method may be effective at killing crayfish within the burrows. The results from the chemical treatment conducted in 2021 were promising and provided insights into strategic modifications to refine implementation in the future to increase the likelihood of achieving eradication of invasive red swamp crayfish.

Goal 5 – Foster Efficient Division Operations

Completion of the scanning of all historic lake survey and management cards

For more than a century, the Michigan Department of Natural Resources has surveyed lakes to understand how fish are distributed across the state, the status of fish populations and their habitats, and how lakes should be managed. Since 1995, lake survey data have been entered into an electronic database and are readily accessible. However, all historical



lake survey information and management actions were recorded on paper cards and archived in filing cabinets at the Institute for Fisheries Research.

In 2020, a project was developed with researchers at the University of Michigan to scan these historical records and convert them into a digital database. By the end of 2021, a dedicated team of students, researchers and Fisheries Division staff had scanned more than 75,000 cards representing 6,296 lakes throughout the state. In March 2021, a [Zooniverse website](#) was launched which relies on volunteers to transcribe information from scanned image into a digital format. By the end of 2021, over 1,900 volunteers from around the world had participated in this project and over 200,000 classifications were completed.

Converting paper records into electronic databases will make it easier for biologists to summarize the history of survey effort, biological and environmental observations, and management actions on individual lakes. In addition, data will help us understand how lakes and fish communities in Michigan have changed over time and will inform our predictions of how they may change in the future.

This project is a collaboration between the Michigan Department of Natural Resources and the following institutions at the University of Michigan: School for the Environment and Sustainability, School of Information, University of Michigan Library, and Department of Ecology and Evolutionary Biology, Museum of Zoology. This work is part of the Collections, Heterogeneous data, And Next Generation Ecological Studies project at the University of Michigan, which is funded by a grant from the Michigan Institute for Data Science.



Master Angler program technology improvements

The annual Master Angler program awards anglers for sharing information with the DNR on the trophy-size fish they catch. Many anglers throughout the state enjoy the program, which has been in place for decades. Fisheries Division staff uses information collected as part of this program to address angler inquiries, promote Michigan's fisheries resources and, often in summary within division reports, describe the growth potential of a fish species in a body of water.

The Master Angler program was reviewed in 2019 for program efficiencies. As part of that review, the division recommended transitioning away from a labor- and time-intensive process related to reviewing paper entries from anglers. This transition also coincided with the retirement of the division staffer who was primarily dedicated to implementing the program. Initiated in 2020 and refined in 2021 with staff that was new to the program, Master Angler is now being fully online through the DNR's Harvest Reporting System. The new, streamlined process allows anglers to enter their fish and

relevant information online, then staff reviews those entries and successful anglers are issued their letters using a new automated process that relies on the data collected from each angler. Staff developed additional programming to efficiently generate the program's annual report using the Harvest Reporting System database. Furthermore, the online system has provided an ability for multiple division staff members throughout the state to conduct reviews simultaneously, which has decreased review time. Reduced review time is essential because it ensures that successful anglers receive their Master Angler patch in a timely manner.

The new online process was not immune to the typical technology issues expected with launching a new program, but overall has increased the program efficiencies at several steps in the workflow. In 2021, there were approximately

3,700 entries reviewed using this new process. Program staff is excited about the efficiencies and will continue to identify and implement modifications to further refine and bolster Master Angler moving forward.

Budgeting for the future

Budget management does not fall into most people's list of exciting topics to discuss. However, Fisheries Division managers are not just responsible for managing natural resources. They are also responsible for managing financial resources. There is an implicit contract between DNR Fisheries Division and Michigan's anglers wherein the anglers provide their license dollars to the state with the expectation that this money will be used strategically across all budget categories.

In fiscal year 2021, Fisheries Division's Management Team undertook an effort to scrutinize how funds are distributed across the discretionary spending areas of travel, vehicle and travel services, overtime, state workers and miscellaneous operation expenses. Appropriate distribution of funds across these areas is pivotal to efficient division operations. The effort was focused on right-sizing allocations as opposed to downsizing them. While this effort was not fully completed in FY21, it has already resulted in a shuffling and redistribution of travel funds. Vehicle and travel services has shifted from being distributed at the unit level to a pooled, division-wide allocation to fund vehicles leased from the Department of Technology Management and Budget. The overtime and state worker categories are in the middle of the review and redistribution process, with miscellaneous operation expenses, arguably the most onerous to analyze and redistribute, being the final category up for discussion.

Just like with personal finances, getting a good handle on how funds are being used in the business setting is essential to budget management. This effort to right-size discretionary budget allocations will minimize the perennial underspending of one area being used to address perennial overspending in other areas in the coming years.

