



STEWARDSHIP FINAL REPORT GUIDELINES



Final reporting requirements consist of:

1. A completed profile of the grant for posting to the public Great Lakes Fishery Trust (GLFT) website (see below)
2. A narrative response to GLFT final report questions (see following section)
3. A financial report accompanied by financial documentation verifying expenditures (form and instructions attached)
4. A brief project summary (see below)

PROJECT PROFILE

Your profile should be no more than three pages in length (preferably two). As it will be published to the GLFT website, please strive to communicate in language accessible to a general audience. The primary intended purposes of the profile are to (1) provide an overview of the work funded by GLFT and characterize results and achievements in an accessible manner, and (2) help interested parties access further resources or materials germane to the effort. The profile should follow this format:

Synopsis

- **Project Title:** 2019.1834 Outdoor Adventure Center Great Lakes Fisheries Learning Program
- **Grantee Organization:** Michigan Department of Natural Resources Parks and Recreation Division
- **Project Team** Natalie Cypher, Matt Lincoln
- **Contact Person** Natalie Cypher, DNR Outdoor Adventure Center Program Coordinator
cyphern@michigan.gov
- **Grant Amount:** \$31,950
- **Time Frame:** May 1, 2019- June 1, 2021
- **Focus Area:** Stewardship
- **Brief Project Summary** (In 100 words or less, provide a summary of the project, including its purpose and key results.)

The Michigan Department of Natural Resources (DNR) in partnership with the Southeast Michigan Stewardship Coalition (SEMIS) implemented an integrated education program in Detroit serving middle and high school students, focusing on fish and fisheries management in the Detroit River and Great Lakes region. The program consisted of the SEMIS Summer Institute, an outreach visit to schools by DNR staff, a field trip to the DNR Outdoor Adventure Center and an experiential field trip out-of-doors.

Project in Context

■ Background research identifying a need for the work

A planning report, funded by the Great Lakes Fishery Trust was performed in 2017 where DNR staff contacted education facilities to determine what Aquatic Stewardship and Fishing Education programs were offered in the region currently. As a result, it was discovered that elementary students have the most opportunities for field trips that include aquatic education, which is why this program focused on middle and high school students.

■ Stakeholder identification of a need for the work

Many of the students participating in the program were from nearby urban areas, and may have little to no knowledge of the DNR or of conservation issues effecting the Great Lakes. In addition to the proposed program, the Outdoor Adventure Center (OAC) provides an opportunity to capture this audience and introduce them to the Great Lakes using hands-on/minds-on exhibits. These exhibits help visitors become more knowledgeable about the resource, provide methods of discovering the resource, and inspire them to protect it

■ Specific focus of the work as it relates to Great Lakes ecology/resources

Overarching themes include:

- The state's natural and cultural resources are protected by the DNR.
- Healthy Great Lakes ecosystems are critical to Michigan's economy and quality of life.
- Invasive species pose one of the most serious threats to Michigan's waters and the economy.
- The DNR and partner agencies are committed to restoring the Great Lakes ecosystem.
- Fishing as an enjoyable recreation activity

■ Relationship to other, related products/services/programs

Related public programs reaching up to 1,000 individuals annually, enhanced through the program would include:

- OAC-hosted regular weekend fishing programs throughout the summer
- Family outreach programs about Great Lakes fish using live Lake Sturgeon, live Sea Lamprey, and other materials purchased or developed for the program such as life cycle posters and Lake Sturgeon life-size cutout

- Annual Free Fishing Weekend fishing derby in partnership with the Detroit Riverfront Conservancy

■ Intended audience/population to be served

The Michigan Fisheries Education Initiative planned to help up to 500 disadvantaged middle and high school students become more aware of Great Lakes ecosystems.

Goals of the Effort

Phase 1 Goal: Introduce the Great Lakes ecosystem and fisheries management to students. Students would be introduced to common species, habitat management, invasive species management, and why these issues are important. This program would be given as an outreach program at the participating school.

Phase 2 Goal: Build on Phase 1 by investigating a current issue or project to gain a deeper understanding of fisheries management, and how management goals are achieved. Teachers had two options to achieve this goal:

Option 1: Learn story of native Lake Sturgeon in the Great Lakes and Detroit River area, including their decline and current restoration efforts taking place.

Option 2: Learn the story of invasive Sea Lamprey in the Great Lakes and Detroit River area, including why they are a threat to the Great Lakes and how they are being removed and managed.

Phase 2 would take place as a part of a field trip to the Outdoor Adventure Center and would include live encounters with Lake Sturgeon and/or Sea Lamprey as a part of their program.

Phase 3 Goal: Provide a hands-on fishing experience for students at a State Park on the Great Lakes. Guest agencies would be present with hands-on activities related to MFEI content such as Great Lakes fish, invasive species, or food webs. This introduction for students new to fishing would provide them with enough knowledge and experience to begin fishing with their friends and families in the future and encourage stewardship of the Great Lakes and their ecosystems.

Results

The following schools and grade levels participated in the MFEI:

- Marcus Garvey Academy: one class each of 6th, 7th, and 8th grade – approximately 25 students per class for a total of 75 students
- Ann Arbor Trail Magnet School: one class of 6th grade, approximately 30 students total
- James and Grace Lee Boggs School: one class each of 6th, 7th, and 8th grade, approximately 25 students per class for a total of 75 students
- River Rouge STEM Academy: one class of 6th, two classes of 7th, and one class of 8th grade students, approximately 30 students per class for a total of 120 students

- Gull Lake Virtual Partnership: one class of 6th – 8th grade of approximately 20 students and one class of 9th – 12th grade of approximately 10 students, for a total of 30 students
- Ypsilanti AC Tech High School: two classes with a mix of 9th and 10th grade students, approximately 30 students per class for a total of 60 students
- University Prep Science and Math High School: four classes with a mix of 9th – 12th grade students from one teacher and 2 classes with a mix of 9th and 12th grade students from a different teacher. Approximately 25 students per class for total of 125 students.

Phase 1 Results: The program was implemented as planned through all of Phase 1. OAC staff conducted an initial outreach visit to each participating school / class, and pre-tests were given beforehand. Post-tests were given to all students, however, due to the COVID-19 interruption a complete set of Phase 1 tests could only be collected from 3 schools. Analysis of these test results showed an average of 16.1% improvement in scores between the pre- and post-tests.

Phase 2 Results: Only students from Marcus Garvey Academy, Ann Arbor Trail Magnet, Boggs School, and one of the two teachers' classes from University Prep were able to attend Phase 2 of the program at the OAC, due to COVI-19. For the remainder of the 2020 school year, OAC staff developed virtual versions of the Phase 2 programs for teachers who were not able to attend with their students. Only one set of completed Phase 2 pre- and post-tests could be collected for analysis, but that analysis showed a remarkable improvement in scores between the pre- and post-test of 29.3%.

Phase 3 Results: Unfortunately, the original fishing days that were planned for all participating students in the program had to be cancelled for the spring of 2020 due to COVID-19. Due to restrictions, we were not able to reschedule any of these events until the spring of 2021. Despite every effort to reach as many participating students as possible from the 2019 / 2020 school year, only approximately 10 students were able to attend Phase 3 fishing days with their families. Two teachers attended as well. Participant surveys showed positive feedback about their experience throughout the program. Additionally, an in-kind donation from the Cabela's / Bass Pro Shops Outdoor Fund provided a free rod and reel to each participating student and teacher.

Teacher Surveys: Participating teachers were given a survey regarding their experience throughout the duration of the MFEI. All responses received were positive and teachers were likely to recommend the program to other teachers.

Products and Resources

DNR Outdoor Adventure Center website:

www.michigan.gov/oac > Educate > Michigan Fisheries Education Initiative

Direct address: https://www.michigan.gov/oac/0,5736,7-329-68732_95081---,00.html

- General description of the program and how teachers can register for it

Videos on YouTube:

Story of the Sturgeon virtual-adapted Phase 2 pre-recorded program:

Part 1: <https://youtu.be/mMdEuObCb60>

Part 2: <https://youtu.be/iziVN6bTL7o>

Story of the Sea Lamprey virtual-adapted Phase 2 pre-recorded program:

Part 1: <https://youtu.be/ZgOe811nz3E>

Part 2: <https://youtu.be/jMvIL3pcgiw>

Summary of the MFEI and how it was adapted to virtual learning: <https://youtu.be/0jnHIU7TJ34>

FINAL NARRATIVE REPORT

Background/Overview

1. Briefly summarize the project description as outlined in the original proposal.

The Michigan Fisheries Education Initiative, shortened as MFEI (formerly titled the Great Lakes Learning Program) is a curriculum designed for middle school and high school students within the Metro-Detroit / Great Lakes region. This is a year-long program with three components, or Phases. Phase 1 of the program consists of an outreach program at the participating school introducing the Great Lakes and the Detroit River food web, fisheries management and careers, and stewardship of the Great Lakes and Detroit River (see Attachment Phase 1 program). Before visiting the OAC for Phase 2 of the program, students will receive a recent, relevant article to read in preparation for Phase 2 (See Attachments Lake Sturgeon article and review questions and Sea Lamprey article and review questions), which will focus either on Sea Lamprey in the Great Lakes or Lake Sturgeon in the Great Lakes.

Phase 2 includes a field trip to the Outdoor Adventure Center and a second program for students which builds on the content from Phase 1. Choices for the second program include Option 1: Story of the Sturgeon – Lake Sturgeon biology, history and habitat restoration in the Detroit River (see Attachment Phase 2 Lake Sturgeon program); or Option 2: Story of the Sea Lamprey – Sea Lamprey biology, history and impact in the Great Lakes, and management in the Great Lakes and the Detroit River (see Attachment Phase 2 Sea Lamprey program). The Outdoor Adventure Center will obtain live Lake Sturgeon and Sea Lamprey and all needed equipment, to enhance the experience and memories for the students.

Phase 3 includes a field trip for each student (across three different dates) to a State Park along the Great Lakes with accessible fishing. Each student has the opportunity to try fishing, and also rotate through related hands-on learning stations with partner agencies such as the U.S. Fish and Wildlife Service (USFWS), the Great Lakes Fishery Commission (GLFC), U.S. Geological Survey (USGS), Michigan DNR Fisheries Division and Law Division, and Michigan Sea Grant. Activities at stations are related to and reinforce content students would have learned throughout Phases 1 and 2 of the program.

Program success will be determined by comparing scores of pre- and post-tests given to each participating student for Phases 1 and 2 of the program (see Attachments Phase 1 pre-post test and Phase 2 Lake Sturgeon and Phase 2 Sea Lamprey pre-post tests), a survey of the students' experience at Phase 3, and a survey of teachers' experience with the program.

2. Was the project completed as originally intended? If not, indicate how the final outcome(s) differed from what was anticipated. Does your experience suggest that original expectations were realistic? What factors hindered or helped progress?

The project was being completed as intended until the start of the COVID-19 pandemic in March 2020. All participating schools received the Phase 1 program at their school by February 2020, and all were scheduled to attend Phase 2 at the OAC, but only 4 out of 8 participating teachers were able to attend before the COVID-19 closures. Three separate Phase 3 fishing field trip days were planned to take place during May 2020 – one each at Lake St. Clair Metropark, Milliken State Park, and Elizabeth Park in Trenton. At least 3 partner agencies were committed to providing a relevant hands-on activity or to assist with the fishing, including DNR Fisheries and Law Divisions, USFWS, USGS, GLFC, Michigan Sea Grant, Michigan Department of Environment, Great Lakes, and Energy (EGLE), Huron-Clinton Metroparks, Clinton River Trout Unlimited, and Wayne County Parks.

After the closures due to COVID-19, all teachers who were unable to bring students to the OAC for Phase 2 received a pre-recorded video of their Phase 2 program – the same presentation that they would have received in the classroom. Pre- and post-tests were also given virtually if they had not already completed them. Each of the above-mentioned fishing field days was cancelled, but two separate fishing events were planned and took place during May of 2021, and all participating students were invited. Attendance for these was optional for students though, because they were scheduled for outside of school hours due to the difficulties in field trip transportation during the pandemic, and the coordination that would have been required for only the students who had already been in the program the previous year to attend during school hours, in a different school year.

Outcomes only differed from the original proposal due to changes and restrictions as a result of COVID-19. Every effort was made to help each participating class achieve the expected outcomes, virtually for Phase 2 and by receiving an invitation to either of the rescheduled Phase 3 fishing days, but measuring outcomes (giving or receiving pre- and post-tests) was difficult during that time due to variables surrounding the pandemic.

Original outcomes most likely would have been achieved, had it not been for the pandemic, therefore original expectations were indeed realistic.

Outcomes

3. What activities were pursued in relationship to intended outcomes, and to what extent did you achieve the following intended outcomes listed in your proposal? (Merge intended outcomes from proposal.)

Phase 1 program intended outcomes (from original proposal): *Students will learn the importance of fisheries management in the Great Lakes, common Great Lakes fish species, challenges facing the Great Lakes ecosystems, actions taken by the DNR and other agencies to overcome these challenges, and how they as Great Lakes citizens can contribute.*

Each of the above intended outcomes was pursued by including information and activities related to each outcome in the Phase 1 program that was delivered to each participating class at their school. Pre and post-tests were given to each participating student to measure the effectiveness of the instruction and activities, and the extent to which each outcome is achieved (see Attached Phase 1 Pre/Post test and Phase 2 Pre/Post tests). Each participating class did

receive the Phase 1 program at their school – this particular aspect was not impacted by COVID-19. However, due to circumstances surrounding COVID-19, only 3 complete sets of Phase 1 pre/post tests were obtained. Results from these tests do show a statistically significant increase in understanding of content related to the above-listed outcomes (see Attachment Michigan Fisheries Education Initiative Program Evaluation). It is important to note that several factors may contribute to the extent to which these outcomes are achieved, even though each class received the same presentation. For example, classroom behavior issues can impact effectiveness of the program – interruptions to the program can be time-consuming, leaving less time for questions at the end, or causing the instructor to skim over or skip certain content of the program, or not even allowing the program to be completed. There were two specific instances where the Phase 1 program was not completed due to behavior issues. Additionally, some classes may have had more general background knowledge or experience related to Great Lakes and environmental issues. For example, there was one participating school (denoted as School A in the Evaluation), which emphasizes the importance of place-based education across their curriculum. While the specific content may have been new to students, learning about environmental issues surrounding their community likely was not new. From an anecdotal perspective, aside from a couple of specific incidents, Phase 1 implementation at the schools was an enjoyable experience for the instructors, and students were engaged in the content. This was reflected in their participation throughout the presentation and questions asked after the presentation.

Phase 2 program intended outcomes (from original proposal):

Option 1 – Lake Sturgeon focus: *Students will understand the characteristics and importance of Lake Sturgeon, the factors that have historically negatively impacted Lake sturgeon, the importance of Lake sturgeon and the overall health of the Great Lakes ecosystem, and how the Great Lakes health and the health of its species are important to our communities and the fishing industry.*

Option 2 – Sea Lamprey focus: *Students will understand how invasive species are introduced and how they negatively impact our Great Lakes ecosystem and economy, the biology and life cycle of Sea Lamprey and its negative impacts to the Great Lake ecosystem and economy, habitat requirements for Sea Lamprey spawning, and management efforts to control Sea Lamprey in the Great Lakes.*

Each of the intended outcomes stated above was pursued by including related content into the Phase 2 presentation, and all participating schools were scheduled for their Phase 2 program and field trip to the OAC. However, due to COVID-19, only 4 out of the 8 participating teachers were able to bring their classes for the Phase 2 program. Of those 4 schools, three of them received the Sturgeon program and one received the Sea Lamprey program. A completed set of pre/post-tests was only received from one of those schools, and they participated in the Option 1 Sturgeon program. Therefore, no post-tests could be evaluated in relation to the Sea Lamprey Phase 2 program. Unfortunately the sudden closing of schools due to COVID-19 caused a severe disruption in schooling and access to school resources, and obtaining any tests after that point proved very difficult. However, each school did receive a Phase 2 program at the OAC was a pleasure to work with and the intended program was delivered smoothly and

as-intended. Each program was completed. Student engagement and teacher feedback was positive.

In response to the sudden closing of facilities, OAC staff prepared pre-recorded virtual versions of the same presentations that would have been given in-person at the OAC – one for the Sea Lamprey program and one for the Lake Sturgeon program. These virtual programs were shared with teachers who were unable to bring students to the OAC for Phase 2, through multiple avenues, including YouTube links and shared files, and continued communication with teachers was attempted. Also, virtual versions of the pre/post tests were created through the software Kahoot!, in an effort to provide an equal opportunity for all participating students and teachers to benefit from the program, as well as to continue evaluation efforts. However, the level of communication received from teachers and engagement with teachers varied significantly during this time. It could only be determined that 3 out of the 4 teachers attempted to continue the program virtually with students, however, and the virtual version of school which closed out the 2020 school year was quite variable and inconsistent among school districts due to differences in technology availability and policies surrounding virtual school. The levels of engagement from students during virtual school was certainly not the same as students who received the program at the OAC prior to the closing. Very few pre/post test responses were received virtually through Kahoot!, therefore they unfortunately could not be included in the Evaluation. Furthermore, very few hard copy pre/post tests that were administered prior to the pandemic were recovered, due to the breakdown in consistent communication between teachers, and the fact that even teachers were unable to access school property during the remainder of the 2020 school year after the closing. As a result, except for one case, if pre/post tests were not received by OAC staff before the pandemic, they were never received at all – not for lack of trying or communication.

It should be noted that the one set of complete Phase 2 pre/post tests, which were for the Sturgeon Phase 2 program, showed a statistically significant increase in content understanding – with approximately a 50% increase in test scores (See Attachment MFEI Program Evaluation).

Phase 3 intended Outcomes: Participating students will have an enjoyable fishing experience along the Great Lakes with their peers, interact with DNR fisheries biologists and relevant staff from other agencies, content learned in Phases 1 and 2 would be reinforced through hands-on activities, and students would be inspired to appreciate and support fishing and other Great Lakes stewardship activities and continue fishing with their families in the future.

Each of the above outcomes was pursued – three separate fishing events were scheduled for spring 2020 – one at Milliken State Park in Detroit, one at Lake St. Clair Metropark in Harrison Township, and one at Elizabeth Park in Trenton. Each event had several partner agencies scheduled to attend with a hands-on activity related to the content from either Phase 1 or 2. Partner agencies included the U.S. Fish and Wildlife Service, the U.S. Geological Survey, Michigan Sea Grant, the Michigan Department of Environment, Great Lakes, and Energy, DNR Fisheries Division, DNR Law Division, Trout Unlimited, Wayne County Parks, and the Huron-Clinton Metroparks. It was extremely unfortunate that each of these events had to be cancelled due to COVID-19.

4. What audience(s) were you particularly hopeful of reaching? To what extent did you reach them? Did you receive any feedback?

The program was intended for middle school and high school students, mostly from disadvantaged neighborhoods and school districts. We did reach primarily this audience – four participating schools were within the city of Detroit, with two of those being a part of the Detroit Public Schools Community district (Marcus Garvey Academy and Ann Arbor Trail Middle School), and two being public charter schools within the city (James and Grace Lee Boggs School and University Prep Science and Math High School). Other participating schools included River Rouge STEM Academy, a part of the River Rouge School District, for which mischool.data.org reports a rate of 83.5% of students as economically disadvantaged; and Ypsilanti AC Tech High School, within the Ypsilanti Community Schools District, with 63% of students economically disadvantaged. We also had one home-school / virtual school partnership program participate – Gull Lake Virtual Partnership within the Gull Lake Community School district in Kalamazoo County. Initially we were unsure whether we wanted a school district outside of metro-Detroit participating in the program, but because we had not explicitly stated that only metro-Detroit schools could participate, they were admitted into the program. For the future, the OAC and any organization providing funding should agree in advance, from which districts, counties, or geographic regions participating schools should be. Overall, we did reach the target audience, and we reached program capacity quickly, showing that teachers were eager to participate in the program. We also had two schools placed on a waitlist, which we were unable to admit to the program due to the capacity limit of approximately 500 students.

5. What relationships or opportunities were developed or strengthened through the work?

We established positive relationships with each of the participating schools, especially with University Prep Science and Math (UPSM) high school, which is within walking distance of the Outdoor Adventure Center and the Detroit River. We conducted virtual programming for each of their two participating teachers during the winter / spring 2021, and have discussed future special programming possibilities due to their close proximity to the OAC. Additionally, teachers from UPSM, Garvey Academy, and Boggs School and their students will be participating in a water quality-focused program in partnership with Central Michigan University and the Huron-Clinton Metroparks, as a result of their participation in the MFEI program. We have strengthened our ongoing partnerships with the Michigan DNR local fisheries staff, local USFWS fisheries and Detroit River International Wildlife Refuge staff, Michigan Sea Grant, and the Great Lakes Fishery Commission (GLFC). We have established new relationships with the St. Clair – Detroit River Sturgeon for Tomorrow, Clinton River Trout Unlimited, and Wayne County Parks. Additionally, we've established a solid partnership with SEMIS, and have participated in meetings and workshops with them as a result. We are currently working with the GLFC to establish a permanent Sea Lamprey exhibit on the main floor of the Outdoor Adventure Center. We also established a new relationship with the managers of Bass Pro Shops in Auburn Hills. After receiving an initial in-kind donation of fishing rods and reels through their gear trade-in program, we received a second donation which the OAC will be setting aside for the MFEI program next year.

6. Was an evaluation included as part of this project? If so, what were the key findings? (Please attach a copy of the evaluation report).

Yes, an evaluation was conducted by Meliora Solutions, LLC., primarily to quantify the impact of the MFEI program according to the results of pre- and post-test scores of the students who participated in the program (see Attached MFEI Program Evaluation). The analysis of Phase 1 pre- and post-test scores reflects an approximately 30% increase in subject area knowledge after Phase 1 instruction. While the total number of tests analyzed for Phase 2 is very small (due to COVID-19 factors and restrictions), results from pre-and post-test scores do show a significant improvement – an approximately 58% increase in subject knowledge after Phase 2 instruction at the OAC. Surveys were sent to participating teachers regarding their level of satisfaction with the MFEI program, and 6 out of 7 were returned. Each indicated satisfaction or high satisfaction with the program, and that they would recommend it to other teachers (see Attached Teacher Survey Responses). Lastly, surveys were given to students who participated in the Phase 3 fishing day regarding their thoughts after participating in Phases 1, 2, and 3. All responses were positive – students felt they had learned more about the Great Lakes and had an increased interest in fishing and outdoor recreation in the future (see Attached Phase 3 Student Surveys).

7. Whether they were intended or unintended, what do you consider the most important benefits or outcomes of this stewardship project?

The most important benefit of the MFEI program was that it achieved the overall main goal, which was to expose middle school and high school students to the importance of Great Lakes stewardship, our Great Lakes ecosystem, and relate those concepts to specific issues facing our local Detroit River – bringing stewardship concepts close to home and relevant for students in the program. While the entire program could not be completed as initially planned due to COVID-19, the intended number of students were still reached through at least a part of the program, some of which through all phases of the program.

The relationship that we established with the teachers, staff, and students from University Prep Science and Math high school seems to have been particularly strong and beneficial – one that continued through each phase of the MFEI program but has also paved the way for special program partnerships in the future, whether it is with the MFEI program or additional place-based programs.

Obtaining the aquariums, supplies, and live Lake Sturgeon and Sea Lamprey was a part of this project but will continue to be an important component of the OAC's education and outreach for a wide range of school programs and public outreach for the foreseeable future, in addition to the MFEI program. In fact, obtaining these live animals gave the OAC a starting point for establishing our new "critter room," which has been very popular with the visiting public since our recent re-opening after the COVID closure.

Lastly, as this was a pilot program intended to provide standards-aligned programming for schools through a local and place-based lens, it was important to receive the feedback from teachers assuring that they found the program to be a valuable and relevant component of their curriculum.

Related Efforts

8. Was this project a standalone effort or was there a broader effort beyond the part funded by the GLFT? Have other funders been involved either during the time of your GLFT grant or subsequently?

The MFEI program was a standalone effort which was funded by GLFT as a pilot program for the OAC. The Cabela's / Bass Pro Shops Outdoor Fund contributed in-kind donations for the Phase 3 fishing program and a grant to support next year's MFEI program.

9. Has there been any spinoff work or follow-up work related to this project?

Yes - adding the live Lake Sturgeon and Sea Lamprey to our classroom at the OAC has provided innumerable opportunities for public education and outreach. Each species was featured during outreach videos created during the OAC's COVID closure, and the Lake Sturgeon will be taken "on the road" for select outreach programming in the future, such as for local Water Festivals. The Lake Sturgeon and Sea Lamprey lessons created for the MFEI program will be incorporated into regular school program offerings through the OAC, and the live Sea Lamprey have already been incorporated into the OAC's Great Lakes Invaders aquatic invasive species education program for grades 3-5. The GLFC will be providing all funding for the permanent Sea Lamprey exhibit for the OAC, which was a result of the partnership the MFEI program established between the OAC and the GLFC.

Communication/Dissemination

10. List publications, presentations, websites, and other forms of formal dissemination of the project deliverables, tools, or results, including those that are *planned* or *in process*.

- Program flyer created to market to schools (see Attached MFEI flyer)
- Mass email sent through Michigan Department of Natural Resources email subscription: [Hands-on learning about the Great Lakes for metro Detroit students \(govdelivery.com\)](https://www.michigan.gov/govdelivery)
- Outdoor Adventure Center website:
www.michigan.gov/OAC >Menu>Educate>Michigan Fisheries Education Initiative
[DNR Outdoor Adventure Center - Michigan Fisheries Education Initiative](https://www.michigan.gov/dnr)
- Presentations:
 - Introduction to the OAC and the Michigan Fisheries Education Initiative. SEMIS Teacher Summer Institute, June 2019. DNR Outdoor Adventure Center, MI.
 - Outdoor Adventure Center programming, featuring the Michigan Fisheries Education Initiative. Michigan Science Teachers Association Annual Conference, March 2020. Lansing, MI.

11. Please characterize your efforts to distribute and encourage use of products, processes, programs, etc. developed through this grant.

During the summer and early fall of 2019, OAC staff sent the marketing flyer and links to our online MFEI program application to teachers and administrators in the Detroit Public School Community District, and to all middle schools and high schools that had previously visited the OAC. We also advertised the program on the OAC's Facebook page, and DNR Marketing division distributed a mass email through the DNR's email subscriptions. OAC staff presented to a group of teachers at the SEMIS Summer Institute prior to the start of the MFEI program, from which two teachers did register for the program (see Attachment SEMIS Teacher Summit presentation). OAC staff also presented about the MFEI to teachers at the Michigan Science Teachers Association annual conference in March 2020, after which several teachers gave contact information to receive future communications and information about the program (see Attachment MSTA Conference presentation).

In terms of the lessons themselves that were created for the MFEI, they will continue to be used for future versions of the MFEI and will also be incorporated into the OAC's regular program offerings for schools visiting the OAC. The relevance of the programs and materials created for MFEI certainly extend beyond the MFEI specifically; as the subjects and materials created fall under the OAC's overarching goal of educating guest students about Michigan's natural resources and the Great Lakes.

Reflections

12. Please describe any unanticipated benefits, challenges, surprises, and/or important lessons learned over the course of the project.

The most obvious unanticipated challenge to overcome for implementation and evaluation of the MFEI was the changes that had to be made in response to the COVI-19 pandemic, which have already been described above. In the original MFEI proposal, OAC staff planned and expected to hire a Student Assistant to assist in all aspects of MFEI implementation. However, it proved more difficult than expected, to hire someone who met the minimum qualifications, possessed adequate background knowledge, and was eligible for hire through Michigan Civil Service at the appropriate time (for example, there were several interested DNR non-career employees who unfortunately were not eligible to hire at the needed time due to limitations on when they could start a new position for the State of Michigan, and other similar situations). Therefore, the program was planned and put in place completely by OAC staff, which would likely be the staffing plan for the program moving forward.

13. What recommendations (if any) would you make to other project directors working on similar efforts or to the GLFT?

None

Attachments

14. Please attach any reports or materials developed through the grant.

Lake Sturgeon article and Review questions

MFEI flier_final

Phase 1 prentation

Phase 2 MFEI lamprey presentation
Phase 2 pre_post test_Sea Lamprey
Phase 2 Sturgeon station activities (2)
Sea Lamprey news article and Review Questions
Sea Lamprey stations
Sturgeon presentation_schools