Executive Summary

Improving Fish Health in the NCR by Integrating Extension with the Development of Alternative Disease Prevention Methods-Part II
Arming producers with practical means of improving farmed fish health in the North Central Region (NCR) was identified as a priority need during the 2020 NCR Aquaculture Roundtable Sessions. The ongoing USDA-NIFA NCRAC funded "Improving fish health in the NCR by integrating extension with the development of alternative disease prevention methods" grant yielded a pivotal survey of producers on fish health, which identified many needs and profound support for aquaculture veterinary outreach. Producers from eight NCR states have expressed strong support for Dr. Myron Kebus to continue to provide aquaculture veterinary outreach assistance in the NCR. Since January 2023, he has visited 22 farms, given 36 presentations at aquaculture/veterinary conferences, provided 220 consults to fish farmers and veterinarians, and conducted three major veterinary training workshops. He has linked producers with fish farm veterinarians to reduce costly fish disease losses and obtain fish health certificates for shipping fish, which expands their sales. The grant team leveraged initial NCRAC resources, resulting in the long-term creation of an outreach veterinarian position funded by Michigan State University (MSU). Now armed with that support, what Dr. Kebus needs is only support for travel and supplies to continue greatly benefitting the aquaculture industry throughout the region.

Progress Report

Project Title: Improving Fish Health in the NCR by Integrating Extension with the Development of Alternative Disease Prevention Methods-Part II [Progress Report]

Total Funds Committed: $14,500 (Year 1), $14,500 (Year 2), $17,500 (Year 3)
Initial Project Schedule: January 1, 2025-December 31,2027
Current Project Year: September 1, 2024-August 31, 2025
Participants: Myron Kebus, Michigan State University

Relevance: Fish farmers presented Dr. Kebus with a range of issues from increased fish mortalities to difficulty in finding an aquaculture veterinarian to conduct regulatory testing for interstate movement of fish. Veterinarians need training to be well equipped to provide aquaculture veterinary services.

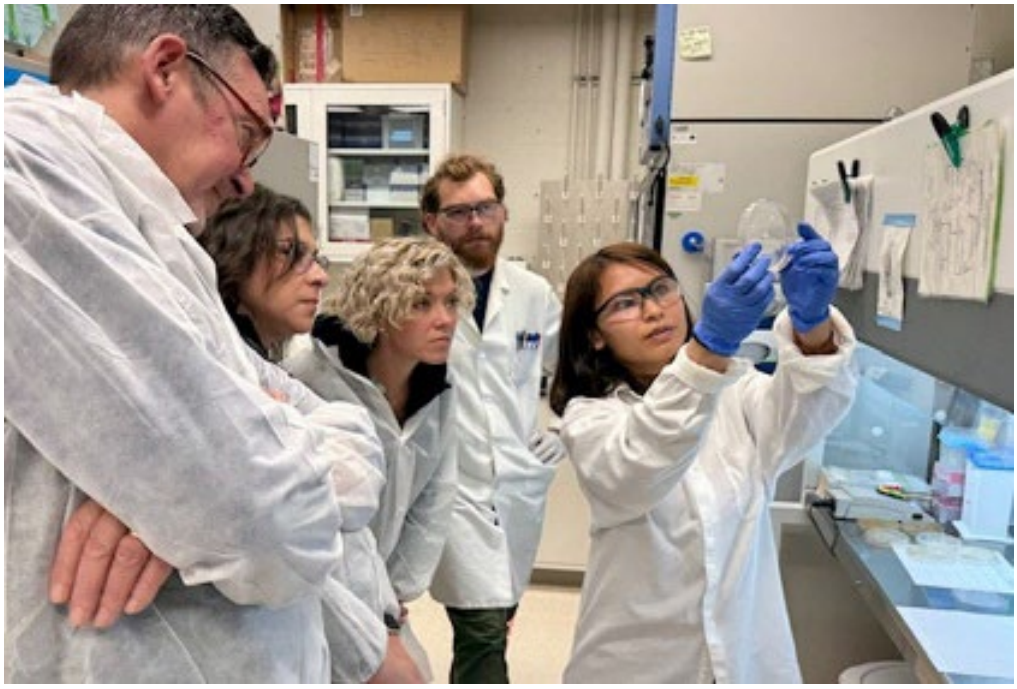
Response: Dr. Kebus helped fish farmers reduce fish mortalities by identifying diseases and providing appropriate treatment and management solutions. He also provided training for veterinarians on aquaculture veterinary medicine.

Results: Five objectives are being pursued in this project:

1. To provide direct assistance to producers through fish health consults on farms.
   Dr. Kebus provided direct assistance to 14 fish farmers from five NCR states (OH, MI, IN, WI, KS). He conducted four in-person farm visits to address fish farmer fish health issues. He was successful in providing direct assistance and helped to reduce fish mortalities.

Fish Vet visit to Ozark, MO

2. To assist veterinarians pursuing fish farm veterinary training by providing consults to veterinarians on farms that request their services.
   Dr. Kebus conducted 12 virtual focus group sessions with over 40 veterinarians to capture collective input on what veterinarians need to know and what resources are needed to provide aquaculture veterinary services to NCR fish farms. He provided direct assistance to 14 veternarians pursuing aquaculture services.



El May Vet Training

3. To conduct producer training workshops on farms to meet specific farm needs for individual farm staff.
   Dr. Kebus provided two customized training workshops on farms (MI, WI) to address the specific needs that the farms requested to be addressed.

Assisting Farmer in Wisconsin

4. To conduct fish farmer and veterinary workshops at conferences and meetings.
   Dr. Kebus conducted a fish farmer workshop at a NCR state aquaculture conference (OH) in January 2025. He presented a half day workshop for veterinarians at the Michigan Veterinary Conference in November 2024.

5. To present findings of issues and concerns of NCR fish farmers at national fish farm and veterinary conferences.
   Dr. Kebus gave oral presentations at four fish farms and veterinary conferences. One was funded by this project; the others were funded by other funding sources. He has been awarded other grants that support some of his activities that benefit NCR fish farmers and veterinarians.

Outreach Overview

Dr. Kebus has delivered oral presentations, poster presentations, website information, and produced scientific publications on his work in the NCR. He has directly communicated by in-person, phone, virtual meetings, emails, and texts the results of his efforts to fish farmers, veterinarians and other NCR stakeholders.

Targeted Audience

The primary target audience is fish farmers in the NCR. These include experienced and new fish farmers. The level of direct assistance depends on the level of experience that the fish farmer has and the specific issues for which they request assistance. The secondary audience is veterinarians who request direct assistance in enhancing their services to NCR fish farmers.

Additional target audiences include veterinary and aquaculture students, fish health regulators, fish diagnostic laboratories and other aquaculture stakeholders.

Outcomes/Impacts
Dr. Kebus has further established his role as the lead contact for fish farmers, veterinarians, and other aquaculture stakeholders in the NCR regarding fish health issues. He has provided direct assistance in determining the causes of fish mortalities on fish farms, provided treatment and fish health management plans, and contributed to the reduction of economic losses associated with fish mortalities.
The impacts include reduced fish mortalities, increased profits, improved fish health, and greater access to well-trained aquaculture veterinarians in the NCR.

Dr, Kebus created with MSU staff a website that has NCR relevant information for fish farmers and veterinarians at https://cvm.msu.edu/research/faculty-research/infectious-disease/aquaculture-outreach.

Successfully conducted with Drs. Thomas Loch and Megan Shavalier the Necropsy and Diagnostic Techniques Workshop, at Michigan State University, East Lansing, MI on May 21 and 22, 2025. This workshop increased the pool of well-trained aquaculture veterinarians in the NCR. The workshop benefitted veterinarians by raising their competence and confidence to provide aquaculture veterinary services to fish farmers.