



GRETCHEN WHITMER
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING



DANIEL EICHINGER
DIRECTOR

SUBMITTED: December 14, 2020

MEMORANDUM TO THE NATURAL RESOURCES COMMISSION

Subject: Fisheries Order 245.21
Fish Disease Control
FOR INFORMATION ONLY

Authority:

The Natural Resources and Environmental Protection Act, 1994 PA 451, authorizes the Director and the Commission to issue Orders to regulate the taking of fish in the waters of this state.

Discussion and Background:

Fisheries Order 245 establishes fish disease regulations for the protection of aquatic resources in Michigan. This was established in 2008 in response to the discovery of Viral Hemorrhagic Septicemia (VHSv) in Michigan waters of the Great Lakes. The order describes special regulations on the minnow trade, angler behaviors, and where baitfish may be used. The regulations enacted were aimed at curtailing the spread of VHSv and other fish pathogens by recreational anglers, wholesale fish dealers, state-licensed commercial fishermen, private aquaculturists, and retail bait outlets.

The regulations have been an effective management tool reducing the spread of fish diseases like VHSv. The commercial bait industry and the public have been accepting of fish health regulations and understand the importance of protecting Michigan's valuable fisheries. This has been modified several times over the years as new information has become available regarding VHSv pathways and transmission vectors and other fish pathogens. The current is set to expire after March 31, 2021 and after a thorough review the Department proposes the following amendments to add additional biosecurity measures:

- Require each harvester/wholesaler to complete disease testing for each lot of minnows collected between October and May, inclusive;
- Require disease testing for at least one lot of minnows collected from each of the following waters (baitfish testing zones) if baitfish will be harvested from these areas during the months June, July, August, and September: Saginaw Bay and connecting tributaries to the first fish passage barrier, Black River downstream of the first fish passage barrier (St. Clair Co.), Lake St. Clair and St. Clair River, Detroit River, Lake Erie, Budd Lake (Clare Co.), and Baseline Lake (Livingston and Washtenaw counties), and all other Great Lakes waters.
- Increase testing and labeling requirements for frozen bait.
 - Require species identification and location of harvest for all frozen bait being imported into Michigan.
 - Add labeling requirements to specify that frozen bait was tested for VHSv, if the species is susceptible to the VHSv.
 - If testing is required, a VHSv testing certification number on the frozen bait package labeling will be needed.
- Revise the bait collection disease sampling and labeling requirements for fish susceptible to VHSv. Will need to specify that the bait was tested for VHSv including the requirement to add the VHSv testing certification number to the following:

- All bait collected from the Great Lakes and tributary streams up to the first fish passage barrier;
- All bait collected outside of Michigan, including frozen bait, must be labeled as indicated:
 - Species must be documented on the package;
 - Origin of collection must be listed on the package;
- All bait collected from the following inland waters: Budd Lake (Clare County) and Baseline Lake (Livingston and Washtenaw Counties);
- Add anchovies, Atlantic herring, Atlantic menhaden, Eulachon, gizzard shad, and Pacific herring to the list of Viral hemorrhagic septicemia (VHSV) susceptible species in the Fish Health Inspection Guidance document;
- Link FO-245 to the Fish Health Inspection Guidance document; and
- Remove all Koi Herpes Virus (KHV) regulations.

The Department recommends a more proactive fish disease sampling process for bait collectors involving baitfish that are susceptible to VHSV. This includes requiring that each fish lot collected from October 1 – May 31 be tested according to the [Fish Health Inspection Guidance](#) document from the Great Lakes including tributaries to the first fish passage barrier, Budd Lake (Clare County) and Baseline Lake (Livingston and Washtenaw Counties). The Department also recommends adding a requirement for disease testing for at least one lot of minnows collected from each of the following waters (baitfish testing zones) if these waters are going to be harvested for baitfish during the months June, July, August, and September: Saginaw Bay and connecting tributaries to the first fish passage barrier, Black River downstream of the first fish passage barrier (St. Clair Co.), Lake St. Clair and St. Clair River, Detroit River, Lake Erie, Budd Lake (Clare Co.), and Baseline Lake (Livingston and Washtenaw counties), and all other Great Lakes waters. These changes will add greater biosecurity to the bait supply used throughout Michigan. Advances in fish disease testing methodologies result in shorter turnaround times using qPCR analysis which has lowered the costs associated with it compared to full cell culture testing and greatly decreased the laboratory results turnaround time. Recent investigations by the Department have determined that the current baitfish disease testing regulations allowed VHSV positive fish to get into the bait supply. Therefore, given that disease testing now has shorter turnaround times and the process is no longer as costly, each lot of baitfish needs to be tested as indicated.

All baitfish (live or frozen) that are susceptible to VHSV shall be certified as disease free and be labelled with the testing certification number as described with the Fish Health Guidance Document. Other changes require that imported baitfish (live or frozen) be certified as disease free since frozen fish infected with VHSV have been found to transmit the disease. Imported baitfish (live or frozen) is recommended to be identified to their scientific name and common name according to the official American Fisheries Society publication and must be labeled with the location of capture. This information will be used to determine if the species is susceptible, if the capture location is known to be positive for VHSV, and whether VHSV testing will be required prior to importation into Michigan's bait markets. The recommended additions for the will result in the sale and distribution of fish certified as disease free for anglers as most baitfish are currently collected from waters where VHSV has been found.

A document called the Fish Health Guidance Document (dated March 2021) has been developed to inform people about the testing requirements enacted by this . The Fish Health Guidance Document will be tied to this and any updates will require an update to FO-245 in the future. This document will be where the VHSV susceptible species table will be referenced moving forward. The Department recommends adding anchovies (*Engraulidae* family), Atlantic herring (*Clupea harengus*), Atlantic menhaden (*Brevoortia tyrannu*), Eulachon (*Thaleichthys pacificus*), gizzard shad (*Dorosoma cepedianum*), and Pacific herring (*Clupea pallasii*) to the list of VHSV susceptible species in the Fish Health Guidance Document. The document is kept online at the following link [Fish Health Inspection Guidance](#).

Finally, the Department recommends removing Koi Herpes Virus (KHV) from the because the KHV virus has not been documented to infect native fish species that are found in Michigan. This virus is a herpesvirus which is only known at this time to infect Koi and Common Carp.

The Department has had open communications with the bait industry about these proposed changes to allow them to provide their comments and feedback. Following the request for feedback, the Department received comments from the commercial bait industry and their primary concern was the increased testing requirements in the spring and summer months. The Department's response to that concern has been reflected in the changes above concerning the spring and summer testing strategy intended to reduce the prevalence of VHSV and other pathogens in the bait supply. The existing only required testing in the fall, but under that regulation the Department did detect VHSV in the bait supply as part of a collaborative research project with Michigan State University. The changes recommended for this will result in a more robust testing protocol to reduce the chances of spreading fish diseases like VHSV in Michigan's waters.

Issue Pros and Cons

The changes recommended will result in greater biosecurity to Michigan's baitfish industry which will benefit every angler fishing in Michigan. The changes will result in disease testing for each fish lot collected from October 1 – May 31, all imported bait (live or frozen), plus require labelling which indicates testing status, testing certification numbers, genus, species, and common names, and location of capture. This information will allow for more targeted VHSV testing for susceptible species, and VHSV positive areas before being imported into Michigan's bait markets. The new labeling requirements will result in better tracking of testing and movement of bait should an issue arise. A con to this would be the increased cost associated with testing more fish lots.

Biological

These changes are based upon the best scientific disease testing information available and will result in greater biosecurity for live and frozen baitfish collected and imported into Michigan and used by anglers throughout the state.

Social

These regulations have been supported by anglers and the baitfish industry for over a decade. Adding the recommended changes will result in a more robust disease testing process which increases the protection of Michigan's natural resources.

Economic

The Department does not expect the proposed changes to have any significant budgetary or personnel implications.

Recommendation:

Relevant Divisions have contributed to the preparation of this . This is being submitted for information on January 14, 2021, at the Natural Resources Commission meeting. This item appeared on the Department's January 5, 2021 calendar and may be eligible for approval on February 11, 2021.



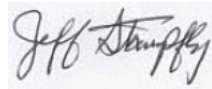
James Dexter, Chief
Fisheries Division



Gary Hagler, Chief
Law Enforcement Division



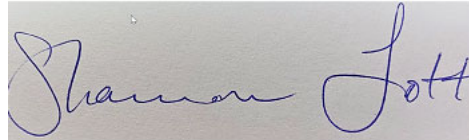
Jared Duquette, Chief
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FISHERIES ORDER

Fish Disease Control Order 245.21

By authority conferred on the Natural Resources Commission and the Department of Natural Resources by Part 411 1994 PA 451, MCL 324.41101 to 324.41105 and Part 487 of 1994 PA 451, MCL 324.48701 to 324.48740, ordered on February 11, 2021, the following section(s) of the Fisheries order shall read effective April 1, 2021, except as otherwise provided:

The goals of the Department's actions under this Fish Disease Control are to protect the aquatic resources of the State, minimize the spread of Pathogens and aquatic invasive species of concern to uninfected waters, and protect the Department's fish hatchery system. The Department will address the control of diseases of fish and aquatic invasive species through the development of regulations that are designed to contain or slow the spread of these threats. **This order acts in conjunction with PA 451, Part 413, Section 41325 to protect our waters from pathogens and aquatic invasive species.**

1) Definitions

As used in this order:

- ~~a) Aquatic vegetation: a plant or algae species that grows in water whether rooted in the mud or floating without anchorage.~~
- ~~b)a) Baitfish: live or dead species of any fish, or parts of fish excluding fish eggs, used to harvest or attract fish.~~
- ~~c) Bilge: the part of the underwater body of a vessel between the flat of the bottom and the vertical topsides or the lowest point of a vessel's inner hull.~~
- ~~d)b) Certification process: a process used by the Department to grant or deny applications from individuals who want to conduct certain activities that are regulated by this order.~~
- ~~e)c) Fish: includes live and dead fish of any species or parts other than baitfish and fish eggs as defined by this order.~~
- d) Fish eggs: eggs of a fish, also known as roe.
- ~~f)e) Fish Health Guidance Document: Michigan Department of Natural Resources (DNR) Fish Health Testing Guidelines for Moving Game and Bait Fish into the State of Michigan, Stocking of Fish into Public Waters of Michigan, and Baitfish Certification for the State of Michigan, March 2021. Ssee (https://www.michigan.gov/documents/dnr/DNR-fish-hlth-test-requirements_678479_7.pdf) for the referenced document.~~
- ~~g)f) Fish Stocking Permit: an official document issued by the Department giving an individual authorization to conduct fish stocking activities.~~
- ~~h) Live well: a well for keeping fish alive in a vessel by allowing water to circulate through it.~~
- ~~i)g) Approved List of Fish Species List: ~~these~~ fish species that are approved for stocking, importation, or use as baitfish in Michigan Public Waters (as listed in the Fish Health Guidance Document).~~
- ~~j)h) Pathogen: viruses, bacteria, fungi, and parasites that cause disease in living organisms.~~
- ~~k)i) Purchase: to acquire for a consideration.~~
- ~~l)j) Michigan pPublic wWaters: waters within the jurisdiction of the state having public access, waters with permanent inflow or outflow, or waters that have been stocked using public resources. or private waters that connect to public waters.~~
- ~~m)k) Sale or sell: an exchange or attempt or offer to exchange money, barter, or anything of value.~~

n) State-licensed baitfish retail, State-licensed baitfish wholesale operations, and State-licensed catchers: those that are required to be licensed by the state of Michigan for these activities.

~~e) Vessel: every description of watercraft used or capable of being used as a means of transportation on water.~~

2) Bait Fish Exclusion Zones

The Department has identified locations vital to the protection of hatchery operations in an effort to control or contain pathogen movement and reduce disease risks to these facilities. In these critical areas restrictions on the possession and subsequent use of baitfish must be implemented. Therefore, baitfish shall not be possessed or used on the following waters of the State:

a) **Benzie County**

Brundage creek and tributaries Kinney creek and Stanley creek, from its confluence with the Platte river (T26N, R13W, S7), to their headwaters, including Brundage spring pond.

b) **Chippewa County**

Pendills L

lake (T47N, R4W, S25, 26) including tributary Pendills creek downstream to its confluence with Lake Superior (T47N, R4W, S28).

Sullivan creek from its headwaters (T46N, R4W, S32) downstream to its confluence with the North branch of the Pine river (T45N, R4W, S23).

Viddian creek from its headwaters (T47N, R4W, S32) downstream to its confluence with Pendills creek (T47N, R4W, S28).

c) **Marquette County**

Cherry creek from the location of the Cherry creek road (T47N, R24W, S18) to the headwaters at County road 480 (T47N, R25W, S22).r

d) **Wexford County**

Slagle creek from M-37 upstream.

3) General statewide provisions:

a) It shall be unlawful to place any live fish, live baitfish, or fish eggs into Michigan pPublic wWaters without first obtaining a fish stocking permit from the department (https://www.michigan.gov/documents/dnr/Private_Fish_Stocking_Permit_Process_458281_7.pdf), except for fish reared within a facility registered under the Aquaculture Development Act (Public Act 199 of 1996) or otherwise allowed under this Fisheries . All fish stocked under a Fish Stocking Permit shall be certified disease-free as described within the Fish Health Guidance Document. Fish transported for stocking outside a facility registered under the Aquaculture Development Act require a Fish Stocking Permit from the Department. If an approved Fish Stocking Permit is issued by the Department, an applicant shall carry a copy of that Fish Stocking Permit when transporting or stocking those fish or eggs. This section does not include the practice of chumming with fish eggs by an angler in the act of recreational fishing.

~~b) A person, who catches fish in a lake, stream, Great Lake, or connecting waterway shall only release those fish in the lake, stream, or Great Lake where the fish were caught, or in a connecting waterway of the lake, stream, or Great Lake where the fish were caught so long as those fish can freely move between the original location of capture and the location of release.~~

e)b) Baitfish shall only be used on a hook and may not be disposed of or otherwise released into Michigan pPublic wWaters.

d)c) It shall be unlawful to import into this state-State for use as baitfish any uncertified fish species as described within the Fish Health Guidance Documentthat are on the List of Fish Species in Table 4. This includes live, dead, preserved, frozen, and cut baitfish.

d) It shall be unlawful to import into this State for use as baitfish any frozen baitfish that are not identified to their scientific (i.e., genus and species) and common name using the official American Fisheries Society publication (citation provided below). Additionally, all imported baitfish will need to be labeled with their location of capture. The scientific and common names along with the point of capture must be clearly shown on all packaging along with testing status of the fish including the testing certification number-#. The testing status must be

documented as one of the following: 1) VHSV-free as determined by testing; or 2) VHSV testing not required in accordance with DNR Fish Health Guidance Document and status approved by DNR.

- ~~e) It shall be unlawful to transport any vessel over land without first draining all water from the live well(s) and bilge upon leaving any body of water. The vessel, trailer or any conveyance used to transport the vessel or trailer must be free of aquatic vegetation.~~
- ~~f) Personal collection of baitfish: All baitfish or fish collected for personal use as bait or cut bait shall only be used for fishing purposes in the original waters of collection.~~
- e) All species of live fish maintained at a location by an owner of a State-licensed commercial fishing operation shall be considered uncertified if live fish have not been tested following the Fish Health Guidance Document that are listed on the List of Fish Species in Table 1 are on-site and have not received a clear Status of Fish Health Certification.
- g) It shall be unlawful to purchase and use baitfish, crayfish, or other live organism from any location not licensed under Part 487 of 1994 PA 451 including, but not limited to, pet shops and live fish markets.

4) Commercial Bait

- a) Importation from out of state
 - i) Status of Fish Health - All persons importing baitfish shall have those baitfish tested as described in the Fish Health Guidance Document, and shall submit all tests results to the Department. ~~for each Pathogen of concern by a certified laboratory approved by the State of Michigan and shall submit the results of all tests to the Department.~~ The Department will review the results for each application and respond with a certification letter of Certification that ~~contains containing~~ a transaction number and ~~either indicates whether the application is approved grants or denies the application and includes the Department's along with the supporting rationale for the decision.~~
- b) Harvest of baitfish from Michigan waters:
 - i) Status of Fish Health - From ~~October 1 – May 31 November 1 – December 31~~ of each year, all persons holding a minnow catcher's license, including an owner of an aquaculture facility regulated and permitted by the Michigan Department of Agriculture and Rural Development, who harvest and wish to offer for sale or sell baitfish ~~that are on the~~ listed in the Fish Health Guidance Document ~~List of Fish Species in Table 1 shall have those baitfish tested for each Pathogen of concern by a certified laboratory approved by the State of Michigan and shall have the fish tested in accordance with the Fish Health Guidance Document and submit the results to the Department. of all testings to the Department.~~ Baitfish shall be tested from the following waters: 1) all Great Lakes waters to include all tributary streams to the first fish passage barrier; 2) Budd Lake (Clare County); and 3) Baseline Lake (Livingston and Washtenaw Counties). The Department will review the results for each application and respond with a ~~letter of Certification certification letter that contains~~ a transaction number and ~~indicates whether the application is approved or denied along with the supporting rationale for the decision. either grants or denies the application and includes the Department's rationale for the decision.~~

State-licensed baitfish catchers shall coordinate and collect a single 150 fish sample during ~~June, July, August, and September April or May~~ from each of the ~~5-8~~ testing zones, ~~if fish are to be harvested from these zones, including Lake Huron~~ 1) Saginaw Bay and connecting tributaries to the first fish passage barrier, 2) Black River downstream of the first fish passage barrier (St. Clair County), 3) Lake St. Clair and St. Clair River, 4) Detroit River, 5) Lake Erie, 6) Budd Lake (Clare County), 7) Baseline Lake (Livingston and Washtenaw Counties), and 8) all other Great Lakes waters ~~and Lake Erie, including the connecting waters of the St. Clair River, Lake St. Clair, and Detroit River~~ (Figure 1). Samples from each of the ~~5-8~~ testing zones shall be tested for each Pathogen of concern by a certified laboratory approved by the State of Michigan. Sampling plans for each respective zone shall be communicated to Department before samples are collected.

~~If all baitfish harvested in the state test negative for each Pathogen of concern during the November 1 – December 31 testing period and from the 5 spring testing zones, then all baitfish on the list of Fish Species in Table 1 may be harvested from Michigan waters and sold without further testing or certification from January 1 – October 31 of the following year. For fish to be legally sold in November and December without Status of Fish Health certification, they must have been harvested prior to November.~~

If any baitfish test positive for any ~~p~~Pathogen of concern during ~~either the November – December October June - May September~~ testing period ~~or~~ from the ~~5-8~~ spring testing zones, then the Department shall take immediate emergency action to temporarily amend this and require additional

testing certification of baitfish harvested ~~January 1 – October 31~~ June – September 30. The Department will notify all licensed bait harvesters of the ~~fall~~ testing results and any subsequent emergency regulatory actions. If emergency action is taken, additional testing requirements shall take immediate effect and shall remain in place until the Department determines that the ~~p~~Pathogen threat has sufficiently diminished to lift the emergency order and reinstate the seasonal ~~monthly~~ testing requirement outlined in this .

c) General Regulations for Commercial Bait

- i) All Michigan baitfish wholesalers are required to be licensed by the state of Michigan and must complete the following ~~c~~Certification ~~p~~Process for their facility or business:
- (1) Status of a Facility - If keeping and holding baitfish at a facility for prolonged distribution and sale, baitfish wholesalers shall have that facility reviewed by the Department to ensure that there is minimal risk to Michigan ~~p~~Public ~~w~~Waters and that appropriate biological security measures are effective for the facility. The Department will review the results for each application and respond with a ~~letter of~~ ~~c~~Certification ~~letter~~ for ~~f~~Facility ~~Status-status~~ that either grants or denies the application and includes the Department's rationale for the decision, as well as the actions necessary for achieving ~~c~~Certification. Once certified and licensed, facility operators who wish to continue being licensed must inform the Department in writing by September 30th each year whether changes were made to the facility during the current license year. If the facility is unchanged, a new certification will be issued with the new license year. If changes were made to the facility, a new ~~c~~Certification ~~p~~Process must be initiated at that time. This part does not apply to an owner of an aquaculture facility regulated and permitted by the Michigan Department of Agriculture and Rural Development or an owner of a State-licensed baitfish retail operation.
 - (2) Statement of Direct Sale – If a wholesaler ships baitfish directly from the point of harvest or immediately after purchase from another licensed wholesale to licensed bait retailers in Michigan, that wholesaler shall notify the Department at the time of license application of their intent ~~of~~ direct sale only. The Department will respond with a letter of authorization for direct wholesale shipments to licensed retailers.
- ~~ii) The steps for Certification of Status of a Facility, Statement of Direct Sale, and Status of Fish Health must be completed on a form as directed by the Department and as outlined in the Guide for Certification of Status of a Facility, Statement of Direct Sale, and Status of Fish Health. The guide is available online at.~~
- ~~iii)ii) A person shall not offer for sale or sell any baitfish that are listed in the Fish Health Guidance Document on the List of Fish Species in Table 4 that were imported from out-of-state or were harvested in Michigan between October 1 – December 31 without receiving a letter of cCertification letter for fFish hHealth Status-status and Status of a Facility or Statement of Direct Sale from the Department permitting such activity.~~
- ~~iv)iii) If an approved cCertification for fFish hHealth Status-status is issued by the Department, a copy shall be carried by the baitfish wholesaler or retailer when transporting, offering for sale, or selling baitfish that are listed in the Fish Health Guidance Document on the List of Fish Species in Table 4 and harvested in Michigan November 1 – December 31 waters. That letter of cCertification letter shall be shown upon request to any law enforcement officer or Fisheries Division representative.~~
- ~~v)iv) An owner of a State-licensed baitfish wholesale operation shall provide to each wholesale and retail purchaser at the point of sale a copy of a receipt for their purchase that will include the date of purchase, the quantity of each species sold, the official common name of the species sold (as listed in the Fish Health Guidance Document Table 4) or the official American Fisheries Society publication (citation provided below), and the applicable certification number for fFish hHealth sStatus for species harvested in Michigan's public waters that are listed in the Fish Health Guidance Document are on the List of Fish Species in Table 4 and harvested in Michigan between November 1 – December 31, and the quantity of each species sold. All wholesale frozen bait transactions must provide to each wholesale and retail purchaser at the point of sale a copy of a receipt for their purchase including the location of capture, the scientific and common names using the official American Fisheries Society publication (citation provided below), and the testing status of the fish including the DNR testing certification number and certification letter.~~
- ~~vi)v) A State-licensed baitfish wholesaler must have a copy of the Certification for Fish Health Certification Status letter at their facility, as well as a receipt of purchase to accompany any baitfish they possess that was either imported into Michigan or harvested in Michigan November 1 – December 31. The letter and receipt shall be made available upon request of any law enforcement officer or a Fisheries Division representative.~~

- vii)vi) A wholesale baitfish dealer shall retain copies of receipts for purchases and all accompanying testing paperwork for at least one year after the date of purchase.

5) Literature Cited:

- a) Page, L. M., H. Espinosa-Pérez, L. T. Findley, C. R. Gilbert, R. N. Lea, N. E. Mandrak, R. L. Mayden, and J. S. Nelson. 2013. Common and scientific names of fishes from the United States, Canada, and Mexico, 7th edition. American Fisheries Society, Special Publication 34, Bethesda, Maryland.

~~6) **Koi Herpes Virus (KHV)** – Due to the recent emergence of KHV in the wild in Michigan, the harvest of minnows for personal use and by state-licensed commercial minnow catchers is prohibited from the following waters:~~

- ~~a) Kent Lake, Livingston and Oakland Counties, all tributaries flowing into Kent Lake, and the Huron River from Kent Lake upstream to the Hubbell Millpond dam in Milford.~~
- ~~b) Silver Lake, Oceana County, and all tributaries flowing into Silver Lake.~~

Table 1. List of Fish Species for Importation, Stocking, or for Baitfish in Public Waters in Michigan and Required Pathogen Testing

Species	Scientific Name	Species Code	Importation	Baitfish	Stocking	Pathogen Testing Required				
						VHSV	IHNV, IPNV, and ICS	HSP	LMBV	CCV
Atlantic Salmon	<i>Salmo salar</i>	ATS	X	-	X	X	X	-	-	-
Black Bullhead	<i>Ameiurus melas</i>	BLB	X	-	X	X	-	-	-	X
Black Crappie	<i>Pomoxis nigromaculatus</i>	BCR	X	-	X	X	-	-	X	-
Bluegill	<i>Lepomis macrochirus</i>	BLG	X	-	X	X	-	-	X	-
Brook Trout	<i>Salvelinus fontinalis</i>	BKT	X	-	X	X	X	-	-	-
Brown Bullhead	<i>Ameiurus nebulosus</i>	BRB	X	-	X	X	-	-	-	X
Brown Trout	<i>Salmo trutta</i>	BNT	X	-	X	X	X	-	-	-
Channel Catfish	<i>Ictalurus punctatus</i>	CCF	X	-	X	X	-	-	-	X
Flathead Catfish	<i>Pylodictis olivaris</i>	FCF	X	-	X	X	-	-	-	X
Green Sunfish	<i>Lepomis cyanellus</i>	GSF	X	-	X	X	-	-	X	-
Hybrid Sunfish	<i>Lepomis spp.</i>	HSF	X	-	X	X	-	-	X	-
Lake Herring	<i>Coregonus artedii</i>	LHR	X	-	X	X	X	X	-	-
Lake Trout	<i>Salvelinus namaycush</i>	LKT	X	-	X	X	X	-	-	-
Lake Whitefish	<i>Coregonus clupeaformis</i>	LWF	X	-	X	X	X	-	-	-
Largemouth Bass	<i>Micropterus salmoides</i>	LMB	X	-	X	X	-	-	X	-
Muskellunge	<i>Esox masquinongy</i>	MUS	X	-	X	X	X	X	-	-
Northern Pike	<i>Esox lucius</i>	NOP	X	-	X	X	X	X	-	-
Pacific Herring	<i>Clupea pallasii</i>	PHR	X	X		X				
Pumpkinseed	<i>Lepomis gibbosus</i>	PSF	X	-	X	X	-	X	X	-
Rainbow Smelt	<i>Osmerus mordax</i>	SMT	X	X		X				
Rainbow Trout (Steelhead)	<i>Oncorhynchus mykiss</i>	RBT	X	-	X	X	X	-	-	-
Redear Sunfish	<i>Lepomis microlophus</i>	RSE	X	-	X	X	-	-	X	-
Rock Bass	<i>Ambloplites rupestris</i>	RKB	X	-	X	X	-	X	X	-
Smallmouth Bass	<i>Micropterus dolomieu</i>	SMB	X	-	X	X	-	-	X	-
Walleye	<i>Sander vitreus</i>	WAE	X	-	X	X	-	X	-	-
Warmouth	<i>Lepomis gulosus</i>	WAR	X	-	X	X	-	-	-	-
White Bass	<i>Morone chrysops</i>	WHB	X	-	X	X	-	-	X	-
White Crappie	<i>Pomoxis annularis</i>	WCR	X	-	X	X	-	-	X	-

Yellow Bullhead	<i>Ameiurus natalis</i>	YLB	X	-	X	X	-	-	-	X
Yellow Perch	<i>Perca flavescens</i>	YEP	X	-	X	X	-	X	-	-
Michigan's Common Baitfish Species										
Bluntnose Minnow	<i>Pimephales notatus</i>	BNM	X	X	X	X	-	-	-	-
Common Shiner	<i>Luxilus cornutus</i>	CSH	X	X	X	X	-	-	-	-
Common White Sucker	<i>Catostomus commersonii</i>	CWS	X	X	-	X	-	X	-	-
Creek Chub	<i>Semotilus atromaculatus</i>	CRC	X	X	-	X	-	-	-	-
Emerald Shiner	<i>Notropis atherinoides</i>	EMS	X	X	X	X	-	-	-	-
Fathead Minnow	<i>Pimephales promelas</i>	FHM	X	X	X	X	-	X	-	-
Golden Shiner	<i>Notemigonus crysoleucas</i>	GOS	X	X	X	X	-	-	-	-
Northern Redbelly Dace	<i>Phoxinus eos</i>	NRD	X	X	X	X	-	-	-	-
Sand Shiner	<i>Notropis stramineus</i>	SAS	X	X	-	X	-	-	-	-
Spotfin Shiner	<i>Cyprinella spiloptera</i>	SFS	X	X	-	X	-	-	-	-
Spottail Shiner	<i>Notropis hudsonius</i>	STS	X	X	-	X	-	-	-	-

(VHSV—Viral Hemorrhagic Septicemia, IHNV—Infectious Hematopoietic Necrosis, IPHV—Infectious Pancreatic Necrosis, Mc—Whirling Disease, HSP—Heterosporis sp, LMBv—Largemouth Bass Virus, CCV—Channel Catfish Virus)

This order shall be assigned number FO-245.21, and is entitled "Fish Disease Control." If a discrepancy occurs between this Fish Disease Control , FO-245.21, and other orders and laws currently in existence, the more restrictive regulation shall take precedence.

This supersedes the entitled "Fish Disease Control," which became effective April 14, 2016, and was assigned number FO-245.16.

Fisheries 245.21 shall take effect on April 1, 2021. This shall remain in effect through March 31, 2026, or until this is amended or rescinded, whichever comes first. Although this may be reviewed and amended on an annual basis, a review of this shall occur no later than August 1, 2025.

Issued on this 11th day of February, 2021.

Approved as to matters over which the Natural Resources Commission has authority.

Carol Moncrieff Rose, Chair
Natural Resources Commission

Approved as to matters over which the Director has authority.

Daniel Eichinger
Director

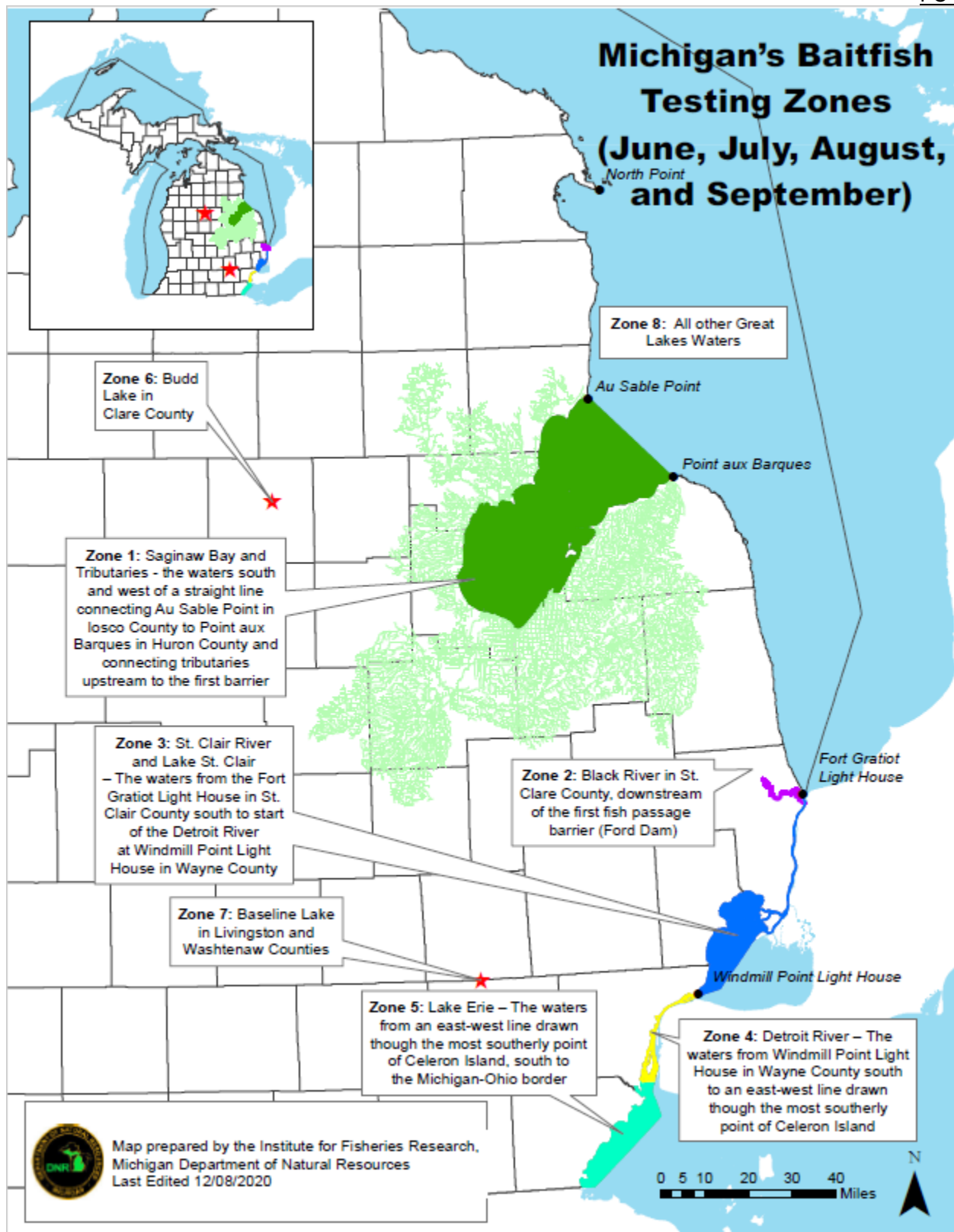


Figure 1: Michigan's Spring Baitfish Testing Zones

