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GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF NATURAL RESOURCES
LANSING

KEITH CREAGH
DIRECTOR

SUBMITTED: September 15, 2014

MEMORANDUM TO THE DIRECTOR

Information: Natural Resources Commission

Subject: Prohibited and Restricted Aquatic Invasive Species
Invasive Species Order Amendment No. 1 of 2014
FOR INFORMATION ONLY

Authority:

The Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, MCL 324.41302 and Executive Orders 2009-45, 2009-54, 2011-1, and 2011-2, and in consultation with the Department of Agriculture and Rural Development, authorizes the Department of Natural Resources to add or delete from the list of prohibited species or restricted species as defined by MCL 324.41301.

Discussion and Background:

An invasive species is defined as a species that is not native and whose introduction causes, or is likely to cause, economic or environmental harm or harm to human health. Michigan's aquatic ecosystems are experiencing significant consequences from aquatic invasive species (AIS) that are already present, and the state's waters are continually threatened by new invasions. The introduction of AIS into Michigan's Great Lakes and inland waters is a source of biological pollution that negatively impact natural resources, human health, recreational opportunities, and various other human values throughout the region. AIS compete with native species for food and habitat, and can directly or indirectly harm or displace native species, degrade habitat, and alter food webs and energy flow. AIS have significant economic effects on waterfront property values, tourism, utilities, and other industries to an estimated sum exceeding $100 million annually in Michigan.

Part 413 of the Natural Resources Environmental Protection Act, 1994 PA 451, regulates (1) the possession of live specimens of prohibited or restricted species, and (2) the introduction of organisms that are prohibited, restricted, genetically engineered, or non-native. Public Act 52 of 2009 authorizes the Natural Resources Commission (NRC) to amend the list for all organisms other than plants and insects as needed. The Michigan Commission of Agriculture and Rural Development have similar authorities for plants and insects. This Act directs the NRC to consult with the Commission of Agriculture and Rural Development before adding or deleting to the lists of prohibited or restricted species.

Pursuant to Executive Orders 45 and 54 of 2009 and Executive Orders 1 and 2 of 2011 the authority for administering this section of law has been transferred from the NRC to the Department.

Section 41302 requires that the Department shall list a species as prohibited if all of the following conditions are met; the organism is not native to the state, the organism is not

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naturalized, or if naturalized, not widely distributed. Additionally, one of the following must apply; A) the organism has the potential to harm human health or to severely harm agricultural, natural, or silvicultural resources or B) effective management controls for the organism are not available. The same requirements exist for listing a species as restricted except that the organism is naturalized and widely distributed in this state.

In 2013, Governor Rick Snyder convened a meeting with Governors from each of the Great Lakes States (NY, PA, OH, IN, IL, IN, WI, MI and MN) and the Premiers from Ontario and Québec. One outcome from this meeting was a commitment from each state and province to take action to block the spread of sixteen "least wanted" AIS through prohibitions or restrictions. Nine of the sixteen "least wanted" AIS are currently prohibited in Michigan under Section 41301. The Department recommends to add the remaining seven "least wanted" AIS as prohibited. One of the remaining "least wanted" AIS is a plant which must be added under the authority of the Commission of Agriculture and Rural Development. The Department proposes to add these eight species to Michigan's prohibited species list.

Stone moroko

Stone moroko, *Pseudorasbora parva*, is a fish belonging to the minnow family, native to Asia, but introduced as a hitchhiker and now considered an invasive species in Europe. The stone moroko is a known carrier of a parasite (*Sphaerothecum destruens*) which can negatively impact other fishes. The stone moroko will feed on eggs of locally valuable native fish species as well as large plankton and have accelerated eutrophication in lakes where established. The stone moroko currently lives in habitats that match those in Michigan.

Zander

Zander, *Sander lucioperca,* are members of the Percidae family and are a close relative to the walleye. They are distributed throughout continental Europe and are a known climate match to Michigan's waters. If introduced to Michigan, there is concern that zander and walleye could hybridize and that zander would compete with walleye.

Wels catfish

Wels Catfish, *Silurus glanis*, are native to Europe and Asia and have not been introduced to the United States. This species can grow very large and they occupy climates similar to those in Michigan. Due to its morphologic characteristics including its large size, and its habits as a voracious predator the wels catfish is considered a serious danger to native fish populations in Michigan if introduced.

Killer shrimp

Killer Shrimp, *Dikerogammarus villosus,* are native to the Ponto-Caspian Region of Eastern Europe, a source for many of the Great Lakes AIS. The U.S. Environmental Protection Agency and the National Oceanic and Atmospheric Administration have listed the 'killer shrimp' as a potential Great Lakes aquatic invasive species. A voracious and aggressive predator, the killer shrimp preys on a range of invertebrates, particularly native shrimps and young fish, with the potential to cause extinction. The killer shrimp could be introduced through ballast water, and would severely threaten the trophic levels of the Great Lakes.

Yabby

The common yabby, *Cherax destructor*, is a crayfish native to Australia and is found in a wide variety of habitats, such as desert springs, alpine streams, subtropical creeks, rivers, ephemeral lakes, swamps, farm ponds, and irrigation channels. The yabby burrows deep into the sediment

which can allow its survival during drought and make it less vulnerable to eradication. The yabby has been moved (for aquaculture and the aquarium trade, possibly also by recreational fishers) to drainages within Australia but outside its native range, where it has become invasive and in some cases has negatively impacted other crayfish species.

Golden mussel

The golden mussel, *Limnoperna fortunei,* is native to China and southeast Asia. The golden mussel invaded South America through ballast water, and concern exists that it could be introduced to North America through the ballast water vector. Golden mussels are similar to zebra and quagga mussels with destructive qualities that threaten native biodiversity, suffocate and starve out native bivalves and foul water systems.

Additional Considerations

Another species currently threatening Michigan waters is the red swamp crayfish. Red swamp crayfish, *Procambarus clarkia,* are native to the Gulf Coast and the Mississippi River drainage up to southern Illinois. Red swamp crayfish have spread to other U.S. waters probably through the release of live study specimens by teachers and students, by aquarists as pets, and by consumers who purchase them from live food markets. They are widely available in the U.S. through the seafood industry and aquarium trade. Eradicating red swamp crayfish is very difficult because they dig deep burrows into the sediment banks of lakes and rivers. Red swamp crayfish can quickly dominate lakes, ponds, rivers and wetlands. They feed heavily on plants, snails, fish, and amphibians, aggressively competing with native crayfish and other species for food and habitat. In 2013, DNR Conservation Officers were informed of individuals purchasing red swamp crayfish from local food markets to use as bait in the Grand and Muskegon Rivers. The DNR acted quickly by conducting surveys in the two reported locations and prohibiting their use as bait through Fisheries Order 249. However, these crayfish may still be legally imported live for food consumption, aquarium and education purposes. The Department recommends the red swamp crayfish be added to Michigan's prohibited species list.

Last, rusty crayfish are currently listed under Part 413 as a prohibited species but are no longer considered isolated, they are now widespread. Surveys conducted by DNR Fisheries Division reveal that the rusty crayfish is established within all four of Michigan's Great Lakes Basins. Section 41302 of NREPA defines Prohibited and Restricted species and the only difference between the two groupings is the distribution of the species. Prohibited species are not present or very isolated if present and restricted species are naturalized and generally widely distributed (e.g. zebra mussel). Crayfish trapping is popular and the Department has received significant input from the public requesting that rusty crayfish be possessed for consumption. Allowing the possession of rusty crayfish may decrease the desire to import the highly invasive red swamp crayfish for consumptive purposes. Furthermore, the public can play an important role in the fight to stop the spread of AIS in Michigan. The Department recommends modifying the listing for rusty crayfish from a prohibited species to restricted species and to allow for their limited possession for purpose of promptly destroying the organism (e.g. consumption, fertilizer, or trash).

In accordance with Section 41302, representatives from the Department of Agriculture and Rural Development and the Department of Natural Resources met on July 18, 2014, to consult upon listing the nine species described above as prohibited and modifying rusty crayfish from prohibited to the status of restricted. The Departments agreed to move forward with their respective Commission processes to properly list these species.

Recommendation:

This order was submitted for information on October 9, 2014, at the Natural Resources Commission Meeting. This item appears on the Department's September and October calendars and may be eligible for approval on November 6, 2014.

James Dexter, Chief
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Forest Resources Division

Ronald A. Olson, Chief
Parks and Recreation Division

William E. Moritz, Ph.D.
Natural Resources Deputy

I have analyzed and discussed these recommendations with staff and concur as to matters over which the Director has authority.

Keith Creagh, Director

Date

INVASIVE SPECIES ORDER

Amendment No. 1 of 2014

By authority conferred on the Department of Natural Resources by section 41302 of the Natural Resources Environmental Protection Act, 1994 PA 451, as amended, MCL 324.41302 and Executive Orders 2009-45, 2009-54, 2011-1, and 2011-2, and in consultation with the Department of Agriculture, it is ordered that effective November 7, 2014, the following section(s) of the Invasive Species Order shall be amended as follows:

40.4 Additional prohibited species.

Sec. 40.4 (1) Possession of the following live species, including a hybrid or genetic variant of the species, an egg or offspring of the species or of a hybrid or genetically engineered variant, is prohibited:

(a) New Zealand mud snail (potamopyrgus antipodarum).

(b) Wild boar, wild hog, wild swine, feral pig, feral hog, feral swine, Old world swine, razorback, eurasian wild boar, Russian wild boar (Sus scrofa Linnaeus). This subsection does not and is not intended to affect sus domestica involved in domestic hog production.

(c) The department shall consult with staff from the Michigan department of agriculture and rural development on the development of a phased compliance protocol for the implementation of ~~this section~~. **subsection b.**

(d) Stone moroko (Pseudorasbora parva)

(e) Zander (Sander lucioperca)

(f) Wels Catfish (Silurus glanis)

(g) Killer Shrimp (Dikerogammarus villosus)

(h) Yabby (Cherax destructor)

(i) Golden mussel (Limnoperna fortunei)

(j) Red swamp crayfish (Procambarus clarkia)

40.5 Restricted Species List

Sec. 40.5 (1) Restricted species are listed in part 413, transgenic and nonnative organisms, of the natural resources and environmental protection act, 1994 PA 451, as amended, MCL 324.41301 to 324.41323.

Sec. 40.6 (1) Possession of the following live species, including a hybrid or genetic variant of the species, an egg or offspring of the species or of a hybrid or genetically engineered variant, is restricted:

(a) Rusty crayfish (Orconectes rusticus)

Issued on this 6th day of November, 2014.

Approved as to matters over which the Director has authority.

Keith Creagh
Director