



DREISSENID MUSSELS

[1. Accuracy and reliability of Dreissena spp. larvae detection by cross-polarized light microscopy, imaging flow cytometry, and polymerase chain reaction assays](#)

The expansion of Dreissena spp. mussels into the western United States has generated an increased need for reliable early detection methods, especially for larvae (veligers), which are a primary transport vector and an indicator of spawning adults. Cross-polarized light microscopy (CPLM) currently provides the most reliable means for detecting quagga and zebra mussel (Dreissena spp.) larvae in plankton samples. In this study a double-blind experiment was undertaken to assess the current reliability of 3 different methods for detecting Dreissena spp. larvae in plankton samples. Methods included CPLM, imaging flow cytometry (IFC), and DNA-based polymerase chain reaction (PCR) assays. We distributed 216 reference samples consisting of concentrated plankton spiked with known numbers of Dreissena spp. larvae to 19 laboratories for analysis. Results indicated that presence/absence detection CPLM was the most reliable (96.3% accuracy), IFC analysis was next most reliable (91.7% accuracy), and PCR was the least reliable (75.8% accuracy). The most prevalent type of error associated with all the methods was false negatives, suggesting that all methods are more likely to fail to detect the presence of larvae rather than to falsely indicate their presence. [Note: abstract only, article for purchase]

[2. Zebra mussels found in Wyandotte County Lake, Kansas \(11/6/12\)](#)

KANSAS CITY, Kan. -- State wildlife officials have found invasive zebra mussels in Wyandotte County Lake. The Kansas Department of Wildlife, Parks and Tourism says a recent survey found both larval and adult zebra mussels at the 407-acre lake. The agency says there are now 17 Kansas reservoirs and lakes infested with the aquatic nuisances.....

[3. Project H2O: Belinda Jensen dives for Zebra mussels in Lake Minnetonka \(11/1/12\)](#)

TONKA BAY, Minn. -- Zebra mussels were first discovered in Lake Minnetonka in 2010. Since that time the infestation in one of the metro's boutique lakes has spread

rapidly. As of Nov. 1, 2012, Lake Minnetonka remains the only lake in the [Minnehaha Creek Watershed District's](#) (MCWD) 129 lakes, creeks and wetlands to be infested by [zebra mussels](#).

4. Dallas-area war on zebra mussels expanding (11/2/12)

By MICHAEL E. YOUNG (dallasnews.com). With troublesome zebra mussels already established in two North Texas lakes and apparently on their way to a third, Texas Department of Parks and Wildlife mollusk expert Robert McMahon will expand the search for the critters to more lakes and a river system. “We’ll continue sampling at a number of lakes Dr. McMahon has been monitoring, and we’ll add some others including a few on the Brazos River system,” said Brian Van Zee, the state’s regional director of inland fisheries for northeastern Texas. “Dr. McMahon’s work will be in addition to what we’re doing.”

McMahon’s work had been funded by the federal government, but when that money ran out, the state stepped in, Van Zee said. Zebra mussels have few natural predators, and their populations grow at astounding rates. Since their discovery in the U.S. in 1988, they’ve established themselves in more than two dozen states, settling tenaciously on almost any solid surface. “They can cause a significant increase in [water system] maintenance costs — they can plug up water intake structures,” Van Zee said. “It’s a problem that is going to impact us economically and environmentally. McMahon, professor emeritus of biology at the University of Texas at Arlington and an expert on freshwater mollusks, just completed his semiannual sampling this week on a trip that took him from Lake Arrowhead near Wichita Falls to Lake Texoma to Caddo Lake on the border with Louisiana. But aside from quick field examinations on the bed of his Dodge pickup, the real investigative work begins next week with DNA testing in a lab in Colorado and a much closer look at samples in his own lab at UTA.

The initial peeks turned up no sign of veligers — mussel larvae — in the water samples or more mature mussels on scrub pads where mussels like to settle, McMahon said. But that isn’t a surprise. “We didn’t see any in Lake Ray Roberts even though we know they’re in there,” he said. “I didn’t see any larvae in the sample, but that was very preliminary. But we know they’ve settled there, and they aren’t hard to find now if you go along the shore and lift up the rocks.”

McMahon first found signs of zebra mussels in Lake Ray Roberts a year ago, and this summer found juvenile mollusks settling in the lake, “so there is a population of adults in there somewhere that are reproducing.” The danger now is that those zebra mussels will spread down the Elm Fork of the Trinity River and be carried by the river’s flow all the way to Lake Livingston, near Houston. Most of the Dallas-Fort Worth area gets its water from sources off the Elm Fork. The state reported that they’re not just in Lake Ray Roberts, but also in the spillway on the Elm Fork,” McMahon said. “So larvae next year could be in Lake Lewisville, and that’s a much more used lake than Lake Ray Roberts.” State crews surveyed Lake Lewisville in late October and then followed the river north,

looking for any indications that the mussels had moved farther downstream, Van Zee said. “We cannot document that they’ve made it to Lewisville yet,” he said.

But since water from Lake Ray Roberts is periodically released downstream toward Lake Lewisville, the spread of mussels is almost inevitable. And Lake Lewisville is a particularly popular recreational lake, with boats coming and going, so the chance of mussels spreading increases. “Boaters are the main concern — that’s probably how they got into Lake Ray Roberts,” McMahon said, with Lake Texoma the likely source. “We need the public to be educated about cleaning, draining and drying their boats before they move from one lake to another.”

[5. Officials intercept mussels at WA border \(11/3/12\)](#)

The driver for a Marysville, Wash., trucking firm is facing a possible felony charge after he was caught hauling a boat contaminated with zebra mussels for the second time since 2010. The mussels were discovered by a Washington State Patrol commercial officer on Oct. 26 when the truck entered Washington via Interstate 90.....

[6. BC Provincial grant supports lake monitoring \(11/2/12\)](#)

VICTORIA – The BC Lake Stewardship Society (BCLSS) has been awarded a one-time \$75,000 provincial grant to support its lake monitoring program, which contributes to the effective environmental stewardship of B.C.’s water resources and ensures the collection of high-quality lake-monitoring data.....The lake-monitoring program also can assist with early detection of invasive species, such as the American bullfrog and zebra mussel that threaten B.C.’s aquatic ecosystems.....

MARINE

[1. Final Fraser River Sockeye Report Issues 75 Recommendations; Wants Freeze On Net-Pen Salmon Farms \(11/2/12\)](#)

Bruce Cohen this week presented to the public the final report of his Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River, titled “The Uncertain Future of Fraser River Sockeye.” Cohen discussed the causes for the decades-long decline in productivity of Fraser River sockeye salmon and makes 75 recommendations to improve the future sustainability of the fishery, including a freeze on net-pen salmon farm production in the Discovery Islands. The full report is available at www.cohencommission.ca

[2. Efficacy of high-pressure seawater spray against colonial tunicate fouling in mussel aquaculture: inter-annual variation](#)

Invasive species such as ascidians have negative effects on aquaculture operations worldwide. Prince Edward Island, Canada, in particular has seen high fouling levels of non-native tunicates including the colonials *Botryllus schlosseri* and *Botrylloides violaceus*. Previous research indicated that high-pressure seawater spraying of mussel socks fouled with colonials is an effective mitigation strategy. Those results, however, were based on a year (2009) with unseasonably low water temperatures at the beginning of the colonial tunicate growing season in June and July; therefore, we repeated part of that study in the following year (2010) to determine whether typical (warm) early season water temperature affected tunicate fouling levels and how both treatment efficacy and fouling effect on mussel productivity differed between the two years. In 2010, *Botryllus schlosseri* fouling (in terms of biomass) was four-fold higher than in the colder year (2009), reaching an average biomass of 600-800 g per full-length mussel sock (up to 2.4 m long), but it still did not affect mussel productivity. *B. violaceus* was also present on mussel socks, but only in very low amounts (<50 g per mussel sock), so that results for this species were inconclusive. Highpressure water spraying was at least as effective in 2010 as in 2009 at removing *B. schlosseri* tunicate fouling from mussel socks, though in 2010, treatment also negatively affected mussel productivity by reducing mussel biomass by 30% in the frequently (5×) treated group. Considering these results along with the potential risk of increased tunicate spread (through fragmentation) and the cost of treatment, frequent application of high-pressure water spray is unnecessary.

WEEDS

1. [The Battle for Lake Austin: Hydrilla vs Asian Grass Carp \(11/8/12\)](#)

[The battle for Lake Austin continues](#): 6,000 sterile Asian grass carp were released into the lake this week in an effort to combat the invasive water plant [hydrilla](#). That brings the total number of Asian grass carp stocked in Lake Austin to 11,000 this summer and 40,000 overall.....

2. [Invasive species threaten Mission Valley , MT \(10/17/12\)](#)

MISSION VALLEY — According to the United States Department of Agriculture’s National Agriculture Library, invasive species are defined as, “non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health.” Invasive species can be flora, fauna, or microorganisms. They range in size from a single-celled microorganism to a massive golden willow tree. Their populations vary from one to millions upon millions of individual organisms, but they all have one thing in common: they do not belong here, and they are causing many, many problems. Despite the best efforts of land managers and conservationists, non-native species in the Mission Valley continue to grow. Far from a new problem, National Bison Range wildlife biologist Amy Lisk said the range has documented records of St. John's wort, a non-native species of weed, dating back to the range’s creation in 1908.....

3. USDA Seeks Suggestions for Projects Funded by Section 10201 of the 2008 Farm Bill

WASHINGTON, November 9, 2012—The U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) is inviting stakeholders to submit suggestions for fiscal year (FY) 2013 projects to implement Section 10201 of the 2008 Farm Bill. Submitted project suggestions should be organized around six Section 10201 goal areas: enhancing plant pest/disease analysis and survey; targeting domestic inspection activities at vulnerable points in the safeguarding continuum; enhancing and strengthening pest identification and technology; safeguarding nursery production; enhancing mitigation capabilities; and conducting outreach and education about these issues.....

OTHER

1. ODFW Proposes to Amendment on Tiger Muskie/Zebra/Quagga and Asian Carp Rules

*****See attachment at end of document*****

For hearing information (12/6/12) go to (page 16):

http://arcweb.sos.state.or.us/doc/rules/bulletin/November2012_Bulletin.pdf

2. Canada (BC) Declares War on Rats (11/8/12)

VANCOUVER—"I have a freezer full of dead rats," says Laurie Wein, project manager at [Gwaii Haanas National Park Reserve](#) in western Canada. It's a necessary evil, for the restoration specialist leading Parks Canada's war on rats in the biodiverse archipelago of Haida Gwaii (or the Queen Charlotte Islands). "Invasive species here on Haida Gwaii are the number-one threat to ecosystem functioning."

3. Can Copper-Based Substrates Be Used to Protect Hatcheries from Invasion by the New Zealand Mudsnaill?

Copper sheet (abbreviated SC), copper mesh (MC), copper-based ablative antifouling paint (AP), and copper-based nonablative antifouling paint (NP) were tested to determine each material's ability to serve as contact deterrents to the invasive New Zealand mudsnail *Potamopyrgus antipodarum*.....[Note: abstract only, article for purchase]

MEETINGS/WEBINARS

1. IPC Web Solutions- Web Based Tools for Invasive Species Management-Pacific Northwest

When: Tuesday, November 13, 2012 1:00 PM - 2:00 PM PST

Go to: <https://www4.gotomeeting.com/register/874464199>

2. [International Didymo Conference](#)

March 12-13, 2013 in Providence, Rhode Island. Abstracts for all papers and posters must be received by **November 1 2012**.

3. [National Invasive Species Awareness Week March 3 – 8, 2013](#)

Please mark your calendars for events in Washington, DC and around the country. State, federal and local and tribal officials meet with NGO's, industry and stakeholder groups addressing invasive species to examine laws, policies and creative approaches to prevent and reduce invasive species threats to our health, economy, environment and natural resources including special places.

4. **Western Aquatic Plant Management Society Annual Meeting -- Save the Date!**

The next Western Aquatic Plant Management Society Annual Meeting will be held March 25 to 27, 2013 at the Coeur d'Alene Resort in Coeur d'Alene, ID. For further information go to: <http://wapms.org>.

5. [The Invasive Species Centre is hosting the 18th International Conference on Aquatic Invasive Species, April 21-25, 2013 at the Sheraton-on-the-Falls Hotel in Niagara Falls, Ontario, Canada.](#)

The **Preliminary Program** for the 18th International Conference on Aquatic Invasive Species is now available on the ICAIS conference website www.icaais.org . The program is still subject to change, so please check the website for updates. Note that the cut-off date for hotel reservations is March 21, 2013 so be sure to reserve early to ensure your accommodation http://www.icaais.org/html/info_accomm.html

Secretary of State
NOTICE OF PROPOSED RULEMAKING HEARING*
 A Statement of Need and Fiscal Impact accompanies this form

<u>Department of Fish and Wildlife</u>	635
Agency and Division	Administrative Rules Chapter Number
<u>Therese Kucera</u>	(503) 947-6033
Rules Coordinator	Telephone
<u>Department of Fish and Wildlife, 3406 Cherry Ave. NE, Salem, OR 97303</u>	
Address	

RULE CAPTION

Amend Wildlife Integrity Rules for species classification of Tiger Muskie, Asian Carp and Quagga/Zebra Mussels
 Not more than 15 words that reasonably identifies the subject matter of the agency's intended action.

Hearing Date	Time	Location	Hearings Officer
12-6-12	1:00 p.m.	Holiday Inn Portland Airport, Portland, OR	Oregon Fish and Wildlife

RULEMAKING ACTION

Secure approval of rule numbers with the Administrative Rules Unit prior to filing.

ADOPT:

AMEND:
 Chapter 635, Division 56

REPEAL:

RENUMBER: Secure approval of new rule numbers with the Administrative Rules Unit prior to filing.

AMEND AND RENUMBER: Secure approval of new rule numbers with the Administrative Rules Unit prior to filing.

Statutory Authority:

ORS 496.012, 496.138, 496.146, 497.298, 497.308, 497.312, 497.318, 498.022, 498.029, 498.052, 498.222 & 498.242

Other Authority:

Statutes Implemented:

ORS 496.012, 496.138, 496.146, 497.298, 497.308, 497.312, 497.318, 498.022, 498.029, 498.052, 498.222 & 498.242

RULE SUMMARY

Amend Wildlife Integrity Rules to reclassify Tiger Muskie from prohibited to controlled species, Asian Carp as a prohibited species and classify live/dead quagga/zebra mussels as a prohibited species.

The Agency requests public comment on whether other options should be considered for achieving the rule's substantive goals while reducing negative economic impact of the rule on business.

<u>10-05-2012 Close of Business</u>	<u>Therese Kucera</u>	<u>Teri.Kucera@state.or.us</u>	<u>10-15-12 5:22p.m.</u>
Last Day (m/d/yyyy) and Time for public comment	Printed Name	Email Address	Date Filed

*The Oregon Bulletin is published on the 1st of each month and updates the rule text found in the Oregon Administrative Rules Compilation. Notice forms must be submitted to the Administrative Rules Unit, Oregon State Archives, 800 Summer Street NE, Salem, Oregon 97310 by 5:00 pm on the 15th day of the preceding month unless this deadline falls on a Saturday, Sunday or legal holiday when Notice forms are accepted until 5:00pm on the preceding workday. ARC 923-2003

Secretary of State
STATEMENT OF NEED AND FISCAL IMPACT
A Notice of Proposed Rulemaking Hearing accompanies this form.

Department of Fish and Wildlife

635

Agency and Division

Administrative Rules Chapter Number

Amend Wildlife Integrity Rules for species classification of Tiger Muskie, Asian Carp and Quagga/Zebra Mussels

Rule Caption (Not more than 15 words that reasonably identifies the subject matter of the agency's intended action.)

In the Matter of:

Amendment of rules relating to the Department of Fish and Wildlife Chapter 635, Division 56, Wildlife Integrity Rules species classification of Tiger Muskie, Asian Carp, and Zebra/Quagga Mussels

Statutory Authority:

ORS 496.012, 496.138, 496.146, 497.298, 497.308, 497.312, 497.318, 498.022, 498.029, 498.052, 498.222 & 498.242

Other Authority:

Statutes Implemented:

ORS 496.012, 496.138, 496.146, 497.298, 497.308, 497.312, 497.318, 498.022, 498.029, 498.052, 498.222 & 498.242

Need for the Rule(s):

Amend Wildlife Integrity Rules to reclassify Tiger Muskie from prohibited to controlled species, Asian Carp as a prohibited species and classify live/dead quagga/zebra mussels as a prohibited species.

Documents Relied Upon, and where they are available:

Tiger Muskie

Baily, Timothy, August 2012. Fish Introduction Proposal, Phillip Reservoir Tiger Muskie. ODFW
http://wdfw.wa.gov/ais/esox_lucius/

Asian Carp

http://www.umesc.usgs.gov/reports_publications/psrs/psr_2000_05.html

http://www.umesc.usgs.gov/invasive_species/asian_carp.html#study

http://www.umesc.usgs.gov/invasive_species/asian_carp/synopsis_asian_carp.html

<http://www.asiancarp.us/faq.htm>

Aiken, J. K., S. Lohr, P. Heimowitz, and M. Hill. 2008. Columbia River Basin Asian Carps Risk Evaluation.

http://www.asiancarp.org/Documents/AsianCarp_PNWRiskEvaluation_022208.pdf

Draheim, R.C... 2009, Pest Risk Assessment for Asian Carps in Oregon

Fiscal and Economic Impact:

See attached

Statement of Cost of Compliance:

1. Impact on state agencies, units of local government and the public (ORS 183.335(2)(b)(E)):

See attached

2. Cost of compliance effect on small business (ORS 183.336):

a. Estimate the number of small business and types of businesses and industries with small businesses subject to the rule:

Fish markets may be affected by the rule due to import or sale of live fish in Oregon. At this time it is difficult to determine the number of businesses which may be impacted.

b. Projected reporting, recordkeeping and other administrative activities required for compliance, including costs of professional services:

No additional reporting, recordkeeping, administrative activities or professional services are required for compliance.

c. Equipment, supplies, labor and increased administration required for compliance:

The introduction of tiger muskie in Phillips Reservoir would involve some modest additional costs in monitoring activities, likely including one additional staff member.

No equipment, supplies, or increased administration are required for compliance.

See attached FIS.

How were small businesses involved in the development of this rule?

2350 acres

**Fiscal and Economic Impact Statement for the December 6, 2012 Hearing
in the Matter of Amending Wildlife Integrity Rules Relating to Species Classification of
Tiger Muskie, Asian Carp, and Zebra/Quagga Mussels**

Fiscal and economic impact: The proposed rules would amend Wildlife Integrity Rules (Division 46) to classify Tiger Muskie as a controlled species, Asian Carp as a prohibited species, and to classify live/dead Quagga/Zebra Mussels as a prohibited species.

Statement of Cost of Compliance:

1. Impact on state agencies, units of local government and the public:

The proposed rules will affect state agencies, units of local government and the public, respectively, as discussed below:

- A. The Oregon Department of Fish and Wildlife is the only state agency that will be affected by the adoption of these rules. Rule changes relating to Asian carp and Zebra/Quagga mussels would not be expected to have any significant fiscal impact. The introduction of tiger muskie in Phillips Reservoir would involve some modest additional costs in monitoring activities, likely including one additional staff member (full-time Experimental Biological Aid (EBA)).
- B. No units of local government are expected to be affected by these rules. No significant changes from the current levels of any local agencies' operations or expenditures are expected as a result of the adoption of these rules.
- C. The public may be affected by the adoption of these rules. The public would not be expected to experience any additional costs associated with the Asian carp and Zebra/Quagga mussel rule changes. Regarding the tiger muskie classification as a controlled species and introduction into Phillips Reservoir, the public may benefit from increased fishing opportunities but the magnitude and timing of those benefits cannot be determined at this time.

Tiger Muskie

The ODFW Northeast Region in collaboration with the Recreational Fisheries Program and Warmwater Program propose to introduce tiger muskellunge (tiger muskie) into Phillips Reservoir to address fishery and conservation concerns resulting from the illegal introduction of yellow perch. The tiger muskie introduction will involve the ongoing release of hatchery-reared juveniles into the reservoir for a period of at least 5 years to determine the efficacy of the introduction.

The Utah Dept of Wildlife Resources (UDWR) has indicated that they can provide ODFW with disease-free tiger muskie fingerlings for the foreseeable future at no cost. Thus, the only cost of the introduction and ongoing stocking program would be limited to the cost of annually transporting the fish from the UDWR hatchery to Phillips Reservoir. Estimated annual cost of transportation is \$1,000 which will be incurred by existing programs.

Monitoring activities will involve implementation of fish sampling spring and fall, creel surveys implemented at least biannually, fish marking, data summary and analysis, and report writing. Annual costs of monitoring activities including annual creel survey, current staff apportioned to the work elements and additional staff needed, services and supplies and equipment is \$80,000 or \$400,000 over five years. It is important to note that this monitoring effort would not be specific to the tiger muskie introduction. Many aspects of the monitoring program are on-going and will

continue without tiger muskie introduction. Nevertheless, additional staffing will be needed in order to effectively implement and monitor the suite of on-going and proposed management actions at Phillips Reservoir, including tiger muskie introduction. A full time EBA will be needed to avoid shifting of work priorities of current staff.

It is difficult to determine what the economic benefits of this tiger muskie introduction will be. During the 1970's and 80's, the Phillips Reservoir fishery provided a significant value to the local economy. The estimated economic value of the fishery in 1981 was approximately \$770,000. In 2012 dollars this would equate to a value of approximately \$2 million. More recently in 2010, the fishery value was estimated to be about \$154,000 (2012 dollars). It is unknown to what degree the fishery at Phillips Reservoir can be restored relative to past angler participation, but the benefits could potentially outweigh the costs.

Asian Carp

Asian carp have been destructive in the Mississippi River system and are an ongoing threat to the Great Lakes ecosystem. The voracious carp can eliminate vast areas of aquatic plants, potentially impacting the recruitment and abundance of native fish as well as waterfowl production areas. If introduced, the carp would represent a serious threat to fishing and waterfowl hunting in Oregon. It is estimated that anglers spent \$783 million in fishing-related expenditures in 2008 in Oregon (Dean Runyan 2009). To avoid that potential risk, the proposed rules would prohibit Asian carp in Oregon. This rule change is not anticipated to result in any economic or fiscal impacts to state agencies, local governments, or the public.

Zebra/Quagga Mussels

The current rules for Zebra/Quagga mussels, *Dreissenidae*, only applies to live species which makes it difficult for law enforcement to have the ability to stop trailered watercraft for suspicion of carrying Zebra/Quagga mussels. By amending the current rule to include "live or dead", this would give law enforcement the ability to stop trailered watercraft suspected of transporting invasive Zebra/Quagga mussels without having to prove that mussels were alive and therefore in violation of the current "prohibited species" rule.

Since May 1, 2012, 3439 watercraft have been inspected for Aquatic Invasive Species (AIS) and, of those inspected, 17 were decontaminated due to the presence of Quagga or Zebra mussels (data from Watercraft Inspection Form reports).

The rules are believed to be fully compatible with legislative direction on the goals of wildlife management in Oregon.

Businesses affected by these rules are believed to be "small business."

We do not believe that a less intrusive or less costly alternative adaptation to only small business is consistent with the purpose of the rule.