MT: FWP to Expand Fisheries Division to Battle Aquatic Invasive Species (2/10/16)

As part of the statewide effort to address the risks of invasive mussels, Montana Fish, Wildlife & Parks plans to create a new bureau to manage the prevention, detection and control of aquatic invasive species within state borders. The Aquatic Invasive Species Bureau will be housed in FWP’s Fisheries Division, with plans to be operational beginning in March. The agency began a nationwide recruitment for a bureau supervisor this week. “Aquatic invasive species pose an enormous risk to Montana’s waters, economy, and way of life,” said Eileen Ryce, FWP Fisheries Division Administrator. “The increasing scope and complexity of managing these threats requires a more comprehensive approach.” Responsibilities of the Aquatic Invasive Species Bureau will encompass all aspects of AIS prevention, including early detection, rapid response, control, outreach and vector management… [Note: See job announcement for AIS Bureau Chief down below]

Montana open water fishing contests get green light for this season (2/3/17)

After careful consideration of safety and environmental precautions, and upcoming rulemaking proposals, all 58 open-water fishing contests set for this season in Montana will be allowed to occur, the Joint Mussel Response Implementation Team announced today. Montana Mussel Response Incident Command watercraft protocols recommend rules for mandatory inspections of all boats and equipment entering the state before launching on any Montana waterbody. Additionally, all boats leaving invasive mussel-detected waters would be inspected – and decontaminated when necessary – upon leaving those waters. There will also be additional restrictions and inspections to prevent the spread of invasive mussels…

MT: Flathead Basin Commission Urges Heightened Prevention Efforts (2/6/17)
Worried about the looming threat of invasive mussels infesting the headwaters of the Columbia River and the largest natural freshwater lake in the West, the Flathead Basin Commission is urging the state of Montana to increase protective measures west of the Continental Divide. At a Feb. 2 meeting in Polson, commission members directed questions, concerns and a few critiques at Randy Arnold, the co-leader of the state’s incident command team charged with responding to last fall’s detection of aquatic invasive mussels in Tiber Reservoir. Suspect detections have also turned up in Canyon Ferry Reservoir, the Missouri River below Toston Dam, and the Milk River.

**MT: No invasive aquatic mussels detected in Flathead Lake (2/6/17)**

Kalispell - Flathead Lake DNA detection tests for mussels are in and specialists with the Flathead Lake Biological Station tell MTN News that the results reveal no signs of the invasive aquatic mussels.

**Other Montana Stories:**

**MT: Opinion, Boat fee to pay to prevent invasive species wise effort (1/30/17)**

**Montana Releases Strategy to Detect, Contain and Control Invasive Mussels (2/2/17)**

**Fishing tournaments OK'd with invasive species rules (2/3/17)**

**Related Montana Links**

- Follow [Montana Mussel Response on Facebook](#)
- Email inquiries to musselresponse@mt.gov
- Mussel response hotline: (406) 444-2440
- MT website: musselresponse.mt.gov

**Early detection monitoring for larval dreissenid mussels: how much plankton sampling is enough? (1/6/17)**

The development of quagga and zebra mussel (dreissenids) monitoring programs in the Pacific Northwest provides a unique opportunity to evaluate a regional invasive species detection effort early in its development. Recent studies suggest that the ecological and economic costs of a dreissenid infestation in the Pacific Northwest of the USA would be significant. Consequently, efforts are underway to monitor for the presence of dreissenids. However, assessments of whether these efforts provide for early detection are lacking. We use information collected from 2012 to 2014 to characterize the development of larval dreissenid monitoring programs in the states of Idaho, Montana, Oregon, and Washington in the context of introduction and establishment risk. We also estimate the effort needed for high-probability detection of rare planktonic taxa in four
Columbia and Snake River reservoirs and assess whether the current level of effort provides for early detection. We found that the effort expended to monitor for dreissenid mussels increased substantially from 2012 to 2014, that efforts were distributed across risk categories ranging from high to very low, and that substantial gaps in our knowledge of both introduction and establishment risk exist. The estimated volume of filtered water required to fully census planktonic taxa or to provide high-probability detection of rare taxa was high for the four reservoirs examined. **We conclude that the current level of effort expended does not provide for high-probability detection of larval dreissenids or other planktonic taxa when they are rare in these reservoirs.**

**Lake Ontario: Shells spell distress (1/25/17)**

Much of the sand at Ontario Beach is currently covered in grey and white shells. They're everywhere; it's like walking on a carpet of walnuts. The shells are from dead zebra mussels, an invasive species that first appeared in Lake Ontario in the late 1980's. (Some are also, more than likely, shells from the similar quagga mussel.) They aren't just a Rochester problem; similar piles of shells have washed up on the lake's beaches in other parts of the state.

**CA: Water board remains focused on mussels (2/7/17)**

Okanagan Basin Water Board's new chairperson is ready to lead the fight over invasive mussels. Tracy Gray, who was elected chairperson Tuesday, says there's a need to continue pressing the federal and provincial governments for consistent funding support to prevent invasive adult zebra and quagga mussels from reaching B.C. lakes. "It will cost $40 million a year to manage invasive mussels in the Okanagan Valley, and that's not eradicating them, just to deal with them. It's imperative we do whatever we can now to mitigate against that happening," she said…

**Effects of the biopesticide Zequanox® on reproduction and early development of the fathead minnow (2/9/17)**

The biopesticide, Zequanox®, is registered for dreissenid mussel control in open water systems in the United States. Previous toxicity trials with nontarget organisms, including several young-of-the-year fish species and invertebrates, demonstrated selectivity of Zequanox for dreissenid mussels, but data are lacking on the treatment-related effects on reproduction and early life stage development of fish. The present study evaluated the effects of Zequanox on spawning and early life stages of the fathead minnow, *Pimephales promelas*, after exposure to the maximum approved concentration [100 mg active ingredient (AI)/L] and exposure duration (8h) for open water application. The results showed no significant treatment-related effect of Zequanox on survival, condition, or cumulative egg production (21 d) in adult fathead minnow. Eggs (≤24 h old) exposed to Zequanox developed to the eyed-stage at a similar rate to that of untreated eggs. Additionally, Zequanox did not have a significant effect on survival and growth (90 d) of
newly hatched larvae (≤24-h old). Zequanox may be an option for control of dreissenid mussels in localized open water habitats where concerns exist regarding reproduction and recruitment of cyprinids and related species.

**BOAT INSPECTION/DECON/TECH NEWS**

**CO: Northern Water asked to kick in $100,000 for mussel inspection at Carter Lake, Horsetooth**

Northern Water, along with Larimer County and Colorado Parks and Wildlife, will be asked Thursday to kick in $100,000 to pay for boat inspections on Carter Lake and Horsetooth Reservoir to keep the water and infrastructure clear of from invasive zebra and quagga mussels. The three agencies are looking to split the cost of the program at the two reservoirs after the state agency lost its severance tax funding that had paid the bill for the past eight years…

**Related Story:** Fear of invasive mussel spreads to two Cortez-area reservoirs (1/24/17)

**OK: City of Duncan aims to protect lakes (2/9/16)**

Duncan is home to many lakes including Lake Humphreys, Lake Clear Creek, Lake Duncan and Lake Fuqua. These lakes in total consist of 4,000 acres with recreational options such as camping, fishing, boating, skiing, swimming, mountain biking, jet skiing and camping. Recently, Texas Parks and Wildlife has started to encourage Texas residents to clean, drain and dry their boats after several lakes in Texas have become victims of the invasive species, zebra mussels. Now Duncan is looking to take the steps to prevent a zebra mussels infestation before Duncan Lakes share the same fate…

**SD: Officials Considering Tweaks to AIS Regulations (2/2/17)**

In an effort to curtail the spread of aquatic invasive species (AIS), officials are starting to look at potential revisions to regulations to help combat them more efficiently and effectively. South Dakota Department of Game, Fish and Parks (GF&P) wildlife division director Tony Leif addressed the delegation at Yankton Day in Pierre Tuesday regarding the need for revision — chiefly, surrounding the issues with zebra mussels in Lewis & Clark Lake…”Someone who lives right there and only uses that body of water is going to get an exemption from the decontamination rule as long as they stay within that (contamination) area," he said. "There’s going to be a sticker they put on their boat to show they’re on the local boater registry, and if that boat shows up at another lake around the state, there’s going to be a need for them to provide proof that they did decontaminate before they went to that lake." None of the proposed changes to AIS regulations have been made at this time and will be further discussed at GF&P commission meetings later in the year…
Calif: Outdoor Report: Boat restriction between Pyramid, Castaic and Piru don't make sense
(1/29/17)

….But now, a boater cannot go from Pyramid to Castaic on successive days or even successive weekends, if the "clean, drained, and dry" rules that prevent the spread of the mussels are followed. So, state and local agencies are preventing the spread of quagga mussels by stopping boats in Pyramid from going to Castaic without the cleaning? Is your head about to explode? Both lakes are infected! Castaic is downstream from Pyramid! Millions of gallons of water a month run unfiltered, untouched from Pyramid to Castaic. All fish that are found in Pyramid are also found in Castaic because they are in the water. Quaggas are too. But the geniuses in government can create a rule that has no foundation in common sense. The quaggas from uncleaned boats from Pyramid don't matter if there are already quaggas in Castaic….

ID: Prospect of inspection cuts stirs alarm (1/28/17)

SANDPOINT — The needle skidded badly off the record at the Idaho Lakes Commission on Friday. The commission learned that the state’s inspection program, which aims to contain the spread of aquatic invasive species and keep new invaders from gaining a toehold in Idaho waters, might have to be scaled back because last year’s expenditures exceeded funding that was allocated for the program…

Aquatic invasive species program benefits northeast Wyoming (2/3/17)

…..This spring, WGFD will be offering a free training to the public for individuals or businesses that would like to become a certified AIS Inspector. Those who complete the course will receive education on AIS in Wyoming and the resources needed to complete boat inspections. For more information about the AIS Inspector course, contact the AIS Specialist in Sheridan at 307-672-7418 or mike.locatelli@wyo.gov.


The Guide to Preventing Aquatic Invasive Species (AIS) Transport by Wildland Fire Operations is a product of, and maintained by, the Invasive Species Subcommittee (ISSC), a component of the Equipment Technology Committee of the National Wildfire Coordinating Group (NWCG). The ISSC provides national leadership in the prevention of invasive species transport by wildland fire mobile equipment and related vehicles, and its primary objectives are to:

• Develop and disseminate practical standards, guidelines, best practices, and recommendations to prevent the spread of invasive species.
• Integrate new and evolving information from the natural resource management community into the invasive species control effort.
• Evaluate and recommend wildland fire and support vehicle utilization and/or decontamination techniques, equipment, or products to minimize invasive species transport.

Questions and comments may be emailed to: BLM_FA_NWCG_Products@blm.gov; This publication is available electronically from the NWCG Web site at: https://www.nwcg.gov/publications/444.

Calif: Quagga sticker price doubles (2/9/17)

LAKEPORT - As part of a County-wide fee update, stickers issued to boaters indicating a Quagga-free vessel have doubled from $10 to $20. The Lake County Board of Supervisors passed the new fee increase on Tuesday, and new stickers will enter circulation of local tackle shops as early as Feb. 13. These new stickers will allow local boaters one year of lake access, but will only cover a month’s time for visitors. Boaters must display an up-to-date sticker to enter Clear Lake….

MARINE

Predator or not? Invasive snails hide even when they don’t know (1/24/17)

Recognizing the signs of a predator can mean the difference between living to see another day and becoming another critter’s midday snack. All prey animals, whether a swift-footed deer or a slow-moving snail, use cues from their environment to sense the presence of a threat. It’s what keeps them alive — or at least gives them a shot at getting away. But the specific cues that trigger prey defenses vary depending on the species of prey and their history in the ecosystem, a new University of Washington study finds. The research, published online Jan. 12 in the journal American Naturalist, analyzed the behavior of seven species of marine snails found in Washington waters — three native and four invasive — and discovered that native and invasive snails use different cues to assess risk…

BALLAST WATER/BIOFOULING

Type Approvals Spark Interest in Ballast Water Treatment (2/6/17)

…Other manufacturers – even those which have not yet received type approval – have also reported rising sales inquiries from shipowners now that the first Coast Guard approvals are complete. It is not just the availability of approved systems – the Coast Guard is also pressing owners to work on compliance from an early date…
BWMS: What does it mean for onboard operations? (1/30/16)

…The Ballast Water Convention, although seriously needed, is a prime example of a Convention being pushed on industry without a well thought out plan on implementation. One could argue that without the plan, the technology never would have developed. However, a thorough analysis by the IMO would have shown that the technology may not be ready for the intended use. The industry as a whole needs to be more involved in the Codes and Conventions proposed by the IMO; involvement not to inhibit progress, but to make it manageable and allow the industry proper time to develop the technology and practices needed.

Sediments: the forgotten aspect of ballast treatment (1/31/17)

…Large numbers of species are transported in the sediment in ballast water tanks, he said, “so no matter how good your treatment system is, if organisms originate in the sediment in your tank they can contaminate the treated water.” He recommended that ballast tanks should be cleaned before installing a ballast water management system “to ensure proper compliance, monitoring and enforcement controls.” …

Bacterial diversity in ships’ ballast water, ballast-water exchange, and implications for ship-mediated dispersal of microorganisms (1/30/17)

Using next-generation DNA sequencing of the 16S rRNA gene, we analyzed the composition and diversity of bacterial assemblages in ballast water from tanks of 17 commercial ships arriving to Hampton Roads, Virginia (USA) following voyages in the North Atlantic Ocean. Amplicon sequencing analysis showed the heterogeneous assemblages were: 1) dominated by Alpha- and Gammaproteobacteria, Bacteroidetes, and unclassified Bacteria; 2) temporally distinct (June vs. August/September); 3) highly fidelitous among replicate samples. Whether tanks were exchanged at sea or not, their bacterial assemblages differed from those of local, coastal water. Compositional data suggested at-sea exchange did not fully flush coastal Bacteria from all tanks; there were several instances of a genetic geographic signal. Quantitative PCR yielded no Escherichia coli and few instances of Vibrio species. Salinity, but not ballast-water age or temperature, contributed significantly to bacterial diversity. Whether anthropogenic mixing of marine Bacteria re-structures their biogeography remains to be tested. [Full Article = $$$’s]

CMOS based image cytometry for detection of phytoplankton in ballast water (2/1/17)

We introduce an image cytometer (I-CYT) for the analysis of phytoplankton in fresh and marine water environments. A linear quantification of cell numbers was observed covering several orders of magnitude using cultures of *Tetraselmis* and *Nannochloropsis* measured by autofluorescence in a laboratory environment. We assessed the functionality of the system outside the laboratory by phytoplankton quantification of samples taken from a marine water environment (Dutch Wadden Sea, The Netherlands) and a fresh
water environment (Lake Ijssel, The Netherlands). The I-CYT was also employed to study the effects of two ballast water treatment systems (BWTS), based on chlorine electrolysis and UV sterilization, with the analysis including the vitality of the phytoplankton. For comparative study and benchmarking of the I-CYT, a standard flow cytometer was used. Our results prove a limit of detection (LOD) of 10 cells/ml with an accuracy between 0.7 and 0.5 log, and a correlation of 88.29% in quantification and 96.21% in vitality, with respect to the flow cytometry results.

**Ballast Water Management - Beyond Type Approval (1/17/17)**

RADM Paul F. Thomas, USCG, Marine Industry, Shipping, Ballast Water Management, Regulations: Since September of last year, when the implementation date of the International Ballast Water Management (BWM) Convention became clear, all eyes have been focused on the U.S. Type Approval Process. Ship owners and operators have been concerned, in particular, with the differences between the between the U.S. and International Type approval processes and the potential that BWMS meeting the more stringent U.S. requirements may not be available prior to the entry into force of the International BWM Convention in 2017….

**FISH**

**Researchers Use ‘Environmental DNA’ To Survey Fish in Multiple Areas in Short Time Period (2/3/17)**

A Japanese research group has used a new technology that identifies multiple fish species populating local areas by analyzing DNA samples from seawater, and proved, they say, that this method is accurate and more effective than visual observation. This research was carried out as part of the Japan Science and Technology Strategic Basic Research Programs…

**Invasive Grass carp are present in three Great Lakes. How can conservationists fight back? (1/30/17)**

Grass carp have invaded three of the five Great Lakes, poising them to become an increasing environmental risk – but there's still time to act, according to a new report. Several Asian carp species are poised to become dominant players in the freshwater lakes’ ecosystem, and could threaten native fishes by competing for both food and habitats, found a scientific analysis of the population published on Friday. Researchers believe it is “very likely” that grass carp will become established populations in four of the lakes within the next decade unless officials take effective legal and infrastructure advances to stop their spread….

**Northern pike caught in Lake Washington could have impact on juvenile salmon (1/27/16)**
While invasive species such as walleye being illegally introduced into Lake Washington have garnered much of the attention, another non-native fish is now making waves in Seattle’s largest urban watershed. The Mercer Island Police and Emergency Management team’s Facebook page posted a picture on Jan. 24 of a northern pike. These fish are also known predators that could have the potential to impact young juvenile salmon, trout and other native fish species in the lake.

The fish was caught by a Muckleshoot tribal member who was working with state Fish and Wildlife in a sampling project on Lake Washington. “I was working and saw the fish, it was a good sized northern pike,” a Mercer Island Police Enforcement spokesman said in an interview on Friday. “They didn’t catch any walleye this time, but weren’t test fishing in the same area where the other one was caught (last year, which was in the Beaux Arts-Enatai area). The northern pike was fat, and it wasn’t just recently thrown into the lake.”

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**AQUACULTURE**

**First commercial fish farm proposed for Strait of Juan de Fuca (1/27/17)**

A proposed commercial fish farm would be the first of its kind for the Strait of Juan de Fuca. If allowed, the fish farm would increase Atlantic salmon production in the Port Angeles area by 20 percent. Because the farm would sit at the entrance and exit for fish in Puget Sound, some environmental activists are sounding their concerned about disease, especially in an area with endangered salmon already on the decline. "We just restored the Elwha River and now you want to put a feedlot right outside the Elwha River. They don't need to put this into the open environment. They could put these fish on land, but they won't do it because it costs them money. They're being subsidized by the destruction of wild ecosystems," said Pete Knutson…

**Will the U.S. Allow Offshore Aquaculture in the Pacific? (1/25/17)**

…”What we’re trying to do is support the development of sustainable aquaculture,” David O’Brien, NOAA’s deputy director of aquaculture, ….And he pointed out, “We have about a $14 billion trade deficit in seafood,” said O’Brien. At the same time, he explained, “According to the U.N. FAO, we have the most potential for offshore aquaculture in the world. We also have access to capital and markets and technical skills, so we should be a larger producer of aquaculture.” Currently, U.S. aquaculture supplies only about 5 to 7 percent of the seafood Americans consume. “Why are we importing so much of our seafood from halfway around the world … as opposed to growing it in our own backyard and creating our own jobs?” asked O’Brien. And, he noted, “Basically, a lot of the same arguments that are behind the local food movement could be applied to aquaculture.”…

**Sea lice sparks salmon showdown in N.L. (2/6/17)**
A new analysis blames a surge in sea lice for driving up the price of salmon while its global population declines — sparking a war of words between the Newfoundland Aquaculture Industry Association (NAIA) and a salmon researcher. A report published in *The Guardian* says wholesale salmon prices increased by 50 per cent due to the parasite, which eats the blood and tissue of salmon. But just how much havoc is being wrecked by it is up for debate…

OTHER

**MT: Parasite that caused large fish kill found in Big Hole (2/3/17)**

BOZEMAN – A parasite that caused a major die-off of mountain whitefish in the Yellowstone River has been discovered in another Montana stream. Montana Fish, Wildlife and Parks released a map Thursday indicating the streams in southwest Montana that have tested positive to date for the presence of *Tetracapsuloides bryosalmonae* (PKX). PKX is the parasite associated with the large fish kill in 2016 on the Yellowstone River. The Big Hole River is the latest Montana waterbody to test positive for the presence of PKX…

**Fast life history traits promote invasion success in amphibians and reptiles (1/4/17)**

Competing theoretical models make different predictions on which life history strategies facilitate growth of small populations. While ‘fast’ strategies allow for rapid increase in population size and limit vulnerability to stochastic events, ‘slow’ strategies and bet-hedging may reduce variance in vital rates in response to stochasticity. We test these predictions using biological invasions since founder alien populations start small, compiling the largest dataset yet of global herpetological introductions and life history traits. Using state-of-the-art phylogenetic comparative methods, we show that successful invaders have fast traits, such as large and frequent clutches, at both establishment and spread stages. These results, together with recent findings in mammals and plants, support ‘fast advantage’ models and the importance of high potential population growth rate. Conversely, successful alien birds are bet-hedgers. We propose that transient population dynamics and differences in longevity and behavioural flexibility can help reconcile apparently contrasting results across terrestrial vertebrate classes.

**USGS NAS mobile app**

The Nonindigenous Aquatic Species (NAS) Database is excited to announce the release of their long-awaited mobile app for both Android and iOS. Previously, non-native aquatic species sighting reports could only be sent via our NAS website. The NAS mobile app allows the public to report non-native aquatic species sightings, including coordinates and photographs, in a more portable and efficient manner than through the
website. Reports submitted via the web and mobile sighting report forms are reviewed by NAS taxonomic experts prior to entry into the NAS database. We do not require contact information in the sighting report form, but we do suggest users provide an e-mail address for follow-up questions by NAS staff. Users can download either version of the app here: [https://nas.er.usgs.gov/mobilesightingreport.aspx](https://nas.er.usgs.gov/mobilesightingreport.aspx)

Two invasive species have Hawaiian reunion after 80-year separation (1/30/17)

Fat, toxic and nocturnal, cane toads (*Rhinella marina*) are abundant today in Hawaii, even though they are South American natives. Released on the Hawaiian Islands in the 1930s to combat sugar cane insect pests, these hefty hoppers will “eat anything that moves and is small enough to fit in their mouths,” says Crystal Kelehear, a parasitologist at the Smithsonian’s Tropical Research Institute in Panama. Having never focused their eating on only the insects that plague sugar cane, their introduction to Hawaii (and elsewhere) was no success for cane farmers…

OPB: Can New DNA Science Help Keep Our Fish Safe? (1/29/17)

..."All these little critters out there, they're shedding DNA from their skin cells, urine, feces," Clements explains. Clements works for the Oregon Department of Fish and Wildlife. He says Oregon has a lot of waterways and the state doesn't have the resources to fully monitor endangered fish, look for invasive plants or check in on all the other native species, potentially including mammals like river otters, beavers and bats. With eDNA, doing all of this could get much cheaper and easier…

Famed snake trackers from India latest weapon in Florida war on pythons (1/23/17)

..Even to South Florida experts, Irula tracking techniques seem mysterious. They move slowly and rather than focus on roads and levees where snakes have typically been found basking, they head straight for thick brush. The Irulas believe the boulders and high grasses that line the levees are more lucrative hunting grounds. That seems to be proving true: UF biologist Ed Metzger has so far determined that seven of the 13 snakes captured would not have been found without the trackers…

Fast life history traits promote invasion success in amphibians and reptiles (1/4/17)

Competing theoretical models make different predictions on which life history strategies facilitate growth of small populations. While ‘fast’ strategies allow for rapid increase in population size and limit vulnerability to stochastic events, ‘slow’ strategies and bet-hedging may reduce variance in vital rates in response to stochasticity. We test these predictions using biological invasions since founder alien populations start small, compiling the largest dataset yet of global herpetological introductions and life history traits. Using state-of-the-art phylogenetic comparative methods, we show that successful invaders have fast traits, such as large and frequent clutches, at both establishment and
spread stages. These results, together with recent findings in mammals and plants, support ‘fast advantage’ models and the importance of high potential population growth rate. Conversely, successful alien birds are bet-hedgers. We propose that transient population dynamics and differences in longevity and behavioural flexibility can help reconcile apparently contrasting results across terrestrial vertebrate classes.

**Changing our attitudes towards invasive 'alien' species (2/9/17)**

Invasive alien species are widely perceived to be a serious threat to global biodiversity. Local "vigilante" volunteer groups enthusiastically take matters …

**WEEDS**

**Taking genetics to the lake: New study shows that fight against invasive plant is more complicated thanks to hybrids (2/1/17)**

The battle to protect Minnesota lakes from invasive species just got more complicated after researchers on Lake Minnetonka discovered that a certain kind of watermilfoil is more resistant to herbicide treatments and becoming more abundant. In a study using cutting-edge genetic screening techniques, researchers found that hybrid watermilfoil — a cross between the invasive Eurasian watermilfoil and Minnesota's native northern watermilfoil — is actually more dense in areas treated with herbicides. The study results, released Wednesday, show that the hybrid plant has more tolerance to treatments like herbicide that kill off Eurasian milfoil, and is more abundant in Lake Minnetonka than expected…

**Invasive plant cleared from Tradinghouse Lake; Lake Waco zebra mussel threat ebbs (1/23/17)**

Chalk up another victory in the war on aquatic invaders. Two years after battling zebra mussels at Lake Waco, Texas Parks & Wildlife Department officials this month removed half a ton of invasive water hyacinth from Tradinghouse Lake. An alert fishing guide in mid-January reported an unusual-looking plant with thick leaves and bulbous stem…

**TRAININGS/WEBINARS/CONFERENCES**

**National Invasive Species Awareness Week February 27 - March 3, 2017**

PARTICIPATE IN EVENTS ACROSS THE NATION to raise awareness and identify solutions to invasive species issues at local, state, tribal, regional, international and national scales. Locate an invasive species event in your state or county. Plan your own
event using the NISAW Toolkit – where and when it works for you! Plan to attend the NISAW 2017 reception and briefings on Capitol Hill!

**WA: Green Crab Team: Upcoming Training Workshops**

Don't let the recent snow fool you! It's very nearly time for Crab Team to hit the mud again. Last year's findings of five European green crab on San Juan Island and in Padilla Bay - the first confirmed in Washington's Salish Sea - underscore the need to continue and expand monitoring for this global invader. We are recruiting volunteers to help Crab Team monitor more sites, especially in areas near where green crabs were found in 2016, including Skagit, San Juan, Jefferson, Clallam, and Whatcom counties. What is being a Crab Team member like? Read about our [Boots in the Mud](#) or [contact us](#).

Interested? Join us for a full day training workshop and we'll provide everything you need to join a Crab Team crew and help protect Washington shorelines. We are holding several workshops, all in March, throughout the region, and you can attend any one that is convenient for you. [Registration is required](#).

Don't see one that works for you? We are working to schedule at least one additional training, in Clallam County, and might be adding more trainings as interest allows. Stay tuned to our [events calendar](#) for new trainings as they get added! Contact [crabteam@uw.edu](mailto:crabteam@uw.edu) with any questions.

**Planning & Executing Successful Rotenone & Antimycin Projects -- For biologists who manage the planning and execution of rotenone or antimycin projects**

The 4½ day training course stresses public involvement, safety, planning and new application restrictions and techniques and safety from the AFS Rotenone SOP Manual. The course was developed to meet the U.S. Environmental Protection Agency reregistration requirements that rely on the label and standard operating procedures for the piscicides rotenone & antimycin. **Tuition:** $1,200 ($1,100 AFS members).

**ISCBC Archived Webinar: Eyes on the Beach and Boots on the Mud - European Green Crab Monitoring on our Coastline**

Original Airing Date -1/25/17: Jeff Adams, *Marine Ecologist at Washington Sea Grant, part of the University of Washington’s College of the Environment*. Description: The globally invasive European green crab has been on the Salish Sea’s doorstep for two decades now, but none were captured from inland marine waters until 2012, renewing concerns about potential impacts and renewing interest in monitoring. The Washington Sea Grant Crab Team was formed with support from the US Environmental Protection Agency and Washington Department of Fish and Wildlife to create and sustain a volunteer monitoring network to maximize the likelihood of detecting green crab while populations are manageable. In this webinar we’ll briefly discuss the green crab, talk
about Washington's early detection and rapid response efforts, and explore future monitoring and collaboration to prevent, identify, and reduce the threat of European green crab to the Salish Sea and beyond. View the webinar using these links: WEBINAR | PDF

PSMFC Webinar #4: Monitoring for quagga and zebra mussels -- February 16, 2017

Developing and maintaining a monitoring program to detect an introduction of dreissenids. **February 16, 2017, 10:00am-11:00am Pacific Time.**

Join the Pacific States Marine Fisheries Commission and a panel of three experts: Denise Hosler (Bureau of Reclamation), Steve Wells (Portland State University), and Tom Woolf (Idaho Department of Agriculture), as they discuss considerations when developing an effective and comprehensive AIS monitoring program, with a focus on monitoring associated with quagga and zebra mussels using plankton tows, eDNA (PCR) and substrate sampling. Register [HERE](#).

**JOBS/GRANTS**

**MT: AIS Bureau Chief - (17140292)**

The Bureau Chief will oversee all aspects of aquatic organism transport with close coordination with regional fisheries staff. This includes unauthorized introductions, exotic wildlife classification review committee participation, commercial pond permitting, private pond permit oversight, wild fish transfer oversight, and temporary stocking permits. This organizational structure encompasses all aspects of aquatic invasives including: prevention, early detection, rapid response, control, outreach and vector management for all aquatic taxa. The Bureau Chief will be responsible for ensuring that Bureau staff and Regional staff have proper training and equipment for the use of piscicides to respond to invasive fishes, as well as for other pesticides. This includes participating and organizing the annual piscicide continuing education classes according to specifications set by the Department of Agriculture and ensuring compliance with the Pesticide General Discharge Permit requirements as stipulated by DEQ.

**Position closes: February 28, 2017.**

If you have any questions about the MT postings please contact Kim Worthy (Human Resources Manager) at 406-444-1289

**MT: Watercraft Inspector Technician, Various Locations Across The State - (17140265)**

Watercraft Inspectors carry out the duties of watercraft decontamination station operation under the supervision of program staff. Management decisions will often have local, statewide and national effects on resources status and conservation.
Number of Openings:  60

Closing Date:  Feb 20, 2017

MT: AIS Lab Techs - (17140264)

The job duties of the AIS Lab Technician include the processing of plankton samples using dissecting microscope and cross polarized light microscopy to detect AIS water samples. The position will assist the primary lab technician with sample preparation including: measuring sample volumes, taking notes on sample quality (turbidity and algae content), and filtering and concentrating samples for under microscope analysis. The Lab Technician will receive sample shipments and log them into sample logging system and ensure they are sent to the appropriate lab per primary lab technician’s direction. Enter laboratory sample data daily into electronic database.

Number of Openings:  2

Closing Date:  Feb 22, 2017

MT: Watercraft Decontamination Technician (17140306)

The incumbent is responsible for performing decontaminations on various types of watercraft. This includes removing drain plugs, draining and drying compartments and flushing boat motors. The program uses hot water decontamination units. Incumbent must understand the different decontamination practices for containment of positive and suspect water bodies. Incumbent will also be responsible for directing boaters/watercraft to potential different decontamination station/areas and basic data tracking. Incumbent will be required to categorize watercraft coming through station and assess what needs to be decontaminated immediately on-site, what can be directed elsewhere and how best to do so and what watercraft could potentially be held and decontaminated later. The incumbent is responsible for the installation and removal of the Decontamination station daily. This includes the placement of roadway signs and activation of electronic reader boards, and set up of traffic cones, shelter, and other gear.

Number of Openings:  78

Closing Date:  Feb 20, 2017

NV/AZ: Aquatic Invasive Species (AIS) Outreach Interns

Working collaboratively with Lake Mead National Recreation Area (LMNRA), the Great Basin Institute is recruiting interns to learn about and participate on multiple projects including resource management and education at LMNRA. During the main boating season (May-September), the intern will educate the boating public about aquatic invasive species (AIS) and water safety, as well as gain skills and knowledge of natural
and cultural resources in the LMNRA. This position is assigned to the Lake Mead National Recreation Area (Kathrine Landing). This position will be performing a variety of duties including (1) facilitating visitor contacts to create understanding of park resources, aquatic invasive species, and boater safety and responsibility; (2) collecting data on water quality (e.g., water sampling); and (3) encourage visitors behavior to uphold the mission of the National Park Service. **Last Date to Apply: 03/20/2017**

**Aquatic Invasive Species Educator & Watercraft Inspector: Minnesota**

The Minneapolis Park and Recreation Board (MPRB) is seeking educators to work in our Aquatic Invasive Species (AIS) education and inspection program. Educators will work at Lakes Calhoun, Harriet, and Nokomi…

**Wildlife/Invasive Species Technicians: Wisconsin**

The Center for Environmental Management of Military Lands (CEMML) at Colorado State University is hiring 6 to 8 seasonal Wildlife/Invasive Species Technicians to conduct field work at Fort McCoy, Wisconsin from approximately April 1st through November 30th, 2017.

**Last Date to Apply: 03/15/2017**

**The Michigan Invasive Carp Challenge**

The State of Michigan seeks innovative ideas to keep invasive bighead, silver, and black carp out of the Great Lakes. Governor Rick Snyder and the Michigan Legislature have authorized $1 million to launch a global search for innovative thinkers who can provide the best solutions to this looming crisis…

**MT: DNRC is currently accepting grant applications to fund high-priority invasive mussel related projects.**

The Montana Department of Natural Resources and Conservation (DNRC) offers state-funded grants for the prevention and control of aquatic invasive species (AIS). The goal of the grants is to protect the natural resources of Montana from severe and unacceptable damage from aquatic invasive species…

**Priority Species:** Preference will be given to species on the Montana Noxious Weed List and to zebra/quagga mussels.

**Grant Amount:** Up to $15,000 for most projects. Control projects may be eligible for funding above this level. Contact DNRC for more information.

Applications are due **March 1, 2017, by 5 p.m.**
Calif: Call for Preliminary Proposals 2018

The California Sea Grant College Program is now soliciting preliminary proposals for projects to begin on/after February 1, 2018. Faculty and academic staff from universities and scientists from research institutions throughout California are invited to apply. California Sea Grant continues to focus on the following integrated themes (or Strategic Focus Areas):

- Healthy Coastal Ecosystems
- Sustainable Fisheries and Aquaculture
- Resilient Coastal Communities and Economies

Application Deadline: March 23, 2017

FEDERAL/STATE/PROVINCIAL/ LEGISLATION, RULES, ACTIONS

Corps Reviewing Draft Letter That Could Allow Funding For Preventing Invasive Mussels In Columbia River Basin (1/27/16)

Public review of a draft letter that would set in motion cost-sharing agreements with four Northwest states for invasive species inspection stations closed January 12. The U.S. Army Corps of Engineers received seven comments, according to Bruce Henrickson of the Corps’ Walla Walla district. The comments, which the Corps will neither share nor characterize until its headquarters and local management have given approval, were incorporated into the Corps’ draft integrated letter report. That draft letter is being reviewed by the Corps’ headquarters now…

STATE

MT: Committee sinks bill requiring $25 boat decal (2/3/17)

A state legislative committee has tabled a bill that would have required a $25 sticker to operate a boat in Montana waters even after the purchase price was amended to $10. House Bill 204, sponsored by Rep. Alan Redfield, R-Livingston, would have set aside revenue from the sale of the decals for each vessel operated in the state to improve fishing access sites and fight noxious weeds and invasive species…Flynn said he’s working on a bill on the enhancement of wildlife habitat that would control noxious weeds, for example. And House Bill 2 sets aside funding for invasive species, he said.

Oregon Bill Permits irrigation district to conduct voluntary inspection and decontamination of recreational or commercial watercraft.

Bill text on HB 2486 can be found HERE
Oregon lawmakers consider stronger invasive mussel defenses (2/2/17)

SALEM — Oregon lawmakers are considering whether to strengthen the state's defenses against invasive aquatic mussels that threaten both irrigation systems and ecosystems. The House Agriculture and Natural Resources Committee has introduced legislation creating a new penalty for people who refuse to subject their boats to inspection for quagga and zebra mussels at checkpoints, among other measures. The mussels threaten to clog irrigation intakes and disrupt habitats for native fish species. Currently, drivers hauling boats who don't stop at check points can be ticketed for traffic violations. The stations are located at common entry points for watercraft along Oregon's borders. Under House Bill 2321, drivers who are pulled over by police within five miles of failing to stop at a checkpoint can be charged with a misdemeanor if they refuse to return for inspection.

Idaho SB 1068

INVASIVE SPECIES – Amends and adds to existing law to establish the Office of Invasive Species Policy and to provide for its duties; to revise definitions; to revise the duties of the director of the Department of Agriculture with regard to invasive species; to encourage collaborative efforts with other agencies; and to provide a penalty for a person who fails to stop at a check station.

Washington considers strengthening measures to protect waters from aquatic invasive species (1/29/17)

Bad news is knocking at the door and Washington is behind the curve on dealing with aquatic invasive species. State officials say there’s an urgency to get up to speed after the alarming developments in Montana last year. Quagga and zebra mussel larvae were found in the Missouri River system of Montana last fall. In a separate incident, an invasive parasite killed thousands of fish and prompted temporary closure of 183 miles of the Yellowstone River and tributaries…..

HB 1429 and SB 5303 seek commercial boating fees and general fund allocation totaling an additional $1.3 million a year to:

- Increase watercraft inspections from the current level of 14,200 to 50,000 a year. Mandatory check stations would increase from 50 to 250.
- Inspect 250 sites, up from 140, three times a year for early detection of zebra and quagga mussels.
- Boost the frequency of training sessions for Washington State Patrol and U.S. Customs and Border Patrol.
- Improve compliance of vessels with state requirements through more effective shipping vessel inspections, improving technical assistance to vessel owners and expanding data management.
- Provide grants for local governments and tribes to address aquatic invasive species concerns at local levels.
Archived Committee Hearings: HB 1429 House Agriculture & Natural Resources Committee go to http://www.tvw.org/watch/?eventID=2017011250 and SB 5303 Senate Natural Resources & Parks Committee go to - http://www.tvw.org/watch/?eventID=2017011332

VA: State delegation seeks new studies to prevent toxic zebra mussel infestations (1/28/17)

A bill requesting the Virginia Dept. of Game and Inland Fisheries to study the current and potential impact of zebra and quagga mussels in Virginia waters, including Smith Mountain Lake, and propose state actions to protect state waters from mussel infestation has been introduced into the Virginia House of Delegates by lake area Del. Charles Poindexter. Poindexter noted experts plan to hold a town hall meeting through the Smith Mountain Lake Association to brief residents and visitors on how they can prevent spread of the aquatic pests to the lake. The highly adaptable Zebra mussel has infested Lake Manassas and the Occoquan Reservoir in northern Virginia and is estimated to cost water treatment facilities there between $500,000 and $850,000 annually for chemicals and system maintenance….

Related Story: Support grows for bills to whack bamboo, other invasive species (2/4/17)

Notice of Proposed Rule: Utah State Bulletin -- Number 2017-3 (2/1/17)*

Purpose Of The Rule Or Reason For The Change: This rule is purposed to define procedures and regulations designed to prevent and control the spread of aquatic invasive species within the state of Utah. SUMMARY OF THE RULE OR CHANGE: The rule revisions:

1) require mandatory dry time, in addition to a professional decontamination, for all boats found to have attached mussels; 2) require all drain plugs and other devices that retain water to be removed during transport within the state of Utah from all watercraft coming from a waterbody infested with Dreissena mussels; 3) remove the state of Colorado from the list of infested waterbodies/regions; and 4) add quarantine language allowing UDWR Conservation Officers to restrict watercraft from launching without taking possession of the watercraft…. [See page 67]

[Note: You may get an error when trying to load this page, but eventually it works]

New and Modified South Dakota Aquatic Invasive Species Regulations (1/25/17)

PIERRE – The South Dakota Game, Fish and Parks (GFP) Commission recently proposed new aquatic invasive species (AIS) rules and modifications to the existing rules in an effort to target the most likely ways that these species are moved from lake to lake.
Two current AIS rules have also been modified to ensure that anglers and boaters have the opportunity to easily comply with the regulations. “There are currently only three waters in the state where zebra mussels are present, therefore it is essential that efforts focus on containing the mussels at these waters and slowing their spread to additional water bodies,” stated Kelly Hepler, GFP department secretary. “The population of zebra mussels has rapidly expanded in Lewis and Clark Lake. Surveys have shown that from 2015 to 2016 significantly more boats, stored in the lake, are heavily infested. The number, size and attachment location of the mussels and their larvae make decontamination efforts extremely difficult.”

**FEDERAL**

**Final rule: Uniform National Discharge Standards for Vessels of the Armed Forces—Phase II Batch One (1/11/17)**

**SUMMARY:** The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Defense (DoD) are promulgating discharge performance standards for 11 discharges incidental to the normal operation of a vessel of the Armed Forces into the navigable waters of the United States, the territorial seas, and the contiguous zone. When implemented, the discharge performance standards will reduce the adverse environmental impacts associated with the vessel discharges, stimulate the development of improved vessel pollution control devices, and advance the development of environmentally sound vessels of the Armed Forces. The 11 discharges addressed by the final rule are the following: aqueous film-forming foam (AFFF), chain locker effluent, distillation and reverse osmosis brine, elevator pit effluent, gas turbine water wash, non-oily machinery wastewater, photographic laboratory drains, seawater cooling overboard discharge, seawater piping biofouling prevention, small boat engine wet exhaust, and welldeck discharges. **DATES:** This final rule is effective on February 10, 2017.

**!!UPDATE (2/8/17)!!:** **SUMMARY:** In accordance with the Presidential directive as expressed in the memorandum of January 20, 2017, from the Assistant to the President and Chief of Staff, entitled “Regulatory Freeze Pending Review,” This action temporarily delays until March 21, 2017, the effective date of the rule entitled Uniform National Discharge Standards for Vessels of the Armed Forces—Phase II Batch One, published in the Federal Register on January 11, 2017. Federal Register Notice [HERE](https://www.federalregister.gov).
affecting farmers. NASDA stated, "bold action is required." Invasive species programs were added to the 2014 farm bill and should be expanded. NASDA stated "Congress should bring additional tools to bear on this serious economic threat."…

**Gibbs Introduces Bipartisan Legislation to “Cut EPA Red Tape” (2/7/17)**

WASHINGTON, DC – In an effort to provide clarification on the use and application of EPA-approved pesticides, Congressman Bob Gibbs introduced the Reducing Regulatory Burdens Act with bipartisan support earlier today. The legislation corrects a 2009 court decision that required a duplicative and unnecessary National Pollution Discharge Elimination System (NPDES) permit for pesticides that have already been regulated, tested, and approved by the Environmental Protection Agency under the Federal Insecticide Fungicide and Rodenticide Act (FIFRA). The bill removes the requirement for NPDES permitting for pesticides already approved by EPA for use under FIFRA, reducing bureaucratic burdens on farmers, ranchers, and local pest control agencies…

A copy of the bill (H.R. 953) can be found [HERE](#).

[Note: According to E&E Daily (2/9/17): “The House passed Gibbs' bill last year on a largely partisan vote, but it proved a stumbling block later in the year as supporters tried to attach it to legislation keeping the government running. Democrats blocked it, accusing Republicans of using the Zika crisis as a cover to dust off an old bill aimed at undermining the Clean Water Act. At that time, the Obama administration objected, as well, a sentiment that might change with the Trump administration's more relaxed approach to environmental regulations. Agriculture interests and mosquito control officials supported the measure. Gibbs' revived bill has support from House Agriculture Chairman Mike Conaway (R-Texas) and from the panel's ranking Democrat, Minnesota Rep. Collin Peterson.” (Source: Reprinted from E&E Daily with permission from Environment & Energy Publishing, www.eenews.net; 202/628-6500).]

**Vessel Incidental Discharge Act (VIDA) Voted out of Committee (1/17/17)**

[S. 168](#), the Commercial Vessel Incidental Discharge (VIDA) Act, was introduced 1/17/17 by Senator Roger Wicker (R-Miss.). Current sponsors are Sens. Rubio, Nelson, Thune, Sullivan, Schatz, and McCaskill.

The [U.S. Senate Committee on Commerce, Science, and Transportation](#) held an executive session on 1/24/17 and S.168 was voted out of committee. The archived hearing can be found [HERE](#).

Bill language is similar to past VIDA versions that has drawn opposition from numerous groups across the nation, including -- PSMFC, Western Governors Association, Washington Department of Fish and Wildlife; Oregon Department of Environmental
Quality, California State Lands Commission, Hawaii Department of Natural Resources and Lands, Columbia River Inter-Tribal Commission, Environmental Caucus of 21 groups from across the U.S., the American Fisheries Society Environmental Council of the States (ECOS), Association of Fish & Wildlife Agencies (AFWA), Association of Clean Water Administrators (ACWA), National Association of State Boating Law Administrators (NASBLA), and Association of State Wetland Managers, among others.

For west coast state managed ballast water programs, concerns are that this legislation will remove states’ authority to regulate their own waters. According to the California State Lands Commission (2/7/17):

...Proposed federal legislation, the Commercial Vessel Incidental Discharge Act, would strip California of its authority to protect its own waters; it would give the federal government exclusive authority to regulate incidental vessel discharges, including ballast water, and would dramatically lessen enforcement, allowing little more than minimal recordkeeping and reporting to suffice as proof of compliance. California is home to three of the largest ports in the nation and is a major gateway for products entering the United States. California needs to retain its authority to protect its waters from shipping-related pollution, especially since it already has an established management framework that is anchored in science and stakeholder expertise…

Many in the shipping industry including groups like the American Waterway Operators support VIDA. According to E&E Daily: Sen. Marco Rubio (R-Fla.) … has argued that state and federal regulations are inconsistent, and he has pushed for them to be replaced by one national standard. But in the past, states have argued that the threat of invasive species means they have the right to enforce state regulations on vessels' ballast water. [Source: Reprinted from E&E Daily with permission from Environment & Energy Publishing, www.eenews.net; 202/628-6500]

What Next: A companion bill in the House has not been introduced, but is expected.

Related Story: Ballast water bill could allow invasive species to enter Puget Sound (2/4/17)

For Further Information on state management concerns related to VIDA, contact Allen Pleus, WDFW, Allen.Pleus@dfw.wa.gov.
MEETINGS

FEBRUARY

California State Lands Commission. Marine Invasive Species Program Workshop:
Wednesday, February 22, 8:00am to 3:30pm, Shell Refinery Clubhouse, 1635 Pacheco Blvd, Martinez, California: PRE-REGISTRATION REQUIRED. For more information or to register contact: jonathan.thompson@slc.ca.gov. Registration must be submitted by February 17, 2017

Canada: Meet peers from across Canada at the National Invasive Alien Species Forum in Ottawa, Feb 28 - Mar 2, 2017

MARCH

4th Annual Ballast Water Management Summit -- March 6-8, 2017 in Long Beach, CA

Western Aquatic Plant Management Society / Western Society of Weed Science: March 13-16 in Coeur d’Alene, ID. http://www.wsweedscience.org/annual-meeting/

The next Washington Invasive Species Council Meeting will be held March 23, Olympia Natural Resources Building Room 172

Call for Abstracts: Iowa Invasive Species Conference 2017; March 28-29, 2017; Honey Creek Resort at Rathbun Lake, Moravia, IA

An AIS session has been added to the list of potential sessions at the Missouri River Natural Resources Conference (MRNRC) taking place March 21-23, 2017, at the Lied Lodge in Nebraska City, NE

ACI’s 17th Ballast Water Management Summit (3/29-30, 2017) will provide essential, expert guidance to shipowner/operators on how to prepare for and manage the BWT Systems in terms of installation and technical operations, as well as advice on compliance, PSC and regulation once the convention is in place.

APRIL

The next meeting of the Pacific Ballast Water Group will be April 12 & 13 in Portland, Oregon. Meeting details HERE.

MAY

The Next Aquatic Nuisance Species (ANS) Task Force Meeting, Lake Tahoe, CA, May 2-4, 2017
We're heading to Detroit! Find out what's in store for IAGLR's 60th Annual Conference on Great Lakes Research, scheduled for May 15-19, 2017, in Detroit, Michigan. The theme for the conference is From Cities to Farms: Shaping Great Lakes Ecosystems. Sessions include -- Physiology and ecology of dreissenid mussels: adaptation, impacts, and control.

**JUNE**

**Invasive Species Research Conference:** Calling all invasive species researchers and practitioners! Thompson Rivers University and the Invasive Species Council of BC are excited to co-host the 2017 Invasive Species Research Conference - Turning Science into Action, being held in beautiful Kamloops, June 20 - 22, 2017

**JULY**

**Next ISAC Meeting, July 18–20, 2017 (Washington, DC)**

**SEPTEMBER**

**Western Regional Panel on Aquatic Nuisance Species:** September 12-15, 2017 – San Diego, CA

**OCTOBER**

**REGISTRATON OPEN:** International Conference on Aquatic Invasive Species (ICAIS) - October 22-26, 2017 – Fort Lauderdale, Florida

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