



## ***AQUATIC INVASIVE SPECIES NEWS***

*04/28/2013*

### **DREISSENID MUSSELS**

#### [1. Assessing the Viability of Zebra and Quagga Mussels: Legal and Enforcement Challenges \(4/12/13\)](#)

Zebra and quagga mussels entered the United States in the late 1980s and most recently appeared in several Western states. Western states are anxious to stop the spread of these invasive species, which wreak havoc on native ecosystems and water delivery infrastructure. However, variability among state and federal law presents a challenge to stopping the spread of the mussels. This Article examines the issues that arise when laws prohibit only the transport of “live” mussels. Viability standards are one of the most challenging disparities among state and federal laws. The Article concludes that states should preclude both live and dead zebra and quagga mussels to help clarify challenging enforcement questions and give law enforcement officials more certainty in their authority to stop and search watercraft.

#### [2. Boaters, don't forget to buy your invasive species stickers \(4/10/13\)](#)

My canoe still had a lot of slime on it from the Boise River. Or was it the Salmon River near Stanley? Maybe it was the Snake River, which gets really slimy. Anyway, the slime was dried and dull gray and had been there since last fall.....

#### [3. Algal blooms the new norm for Lake Erie \(4/17/13\)](#)

.....Invasive quagga and zebra mussels make matters worse. Their filter feeding removes competing, beneficial algae and lets more sunlight reach lower depths. Then mussels release phosphates and ammonia, which further fuel blooms.....

#### [4. Joe's Fishing Hole: AIS decal required for NV boats \(4/14/13\)](#)

With the warmer weather many anglers and recreational boaters are getting their watercraft ready for the lakes and registering them with NDOW. New for boaters this year is the Aquatic Invasive Species Decal, which is required of most vessels using Nevada's waters.

#### [5. Iowa Fish Hatcheries to Take Precautions to Prevent Spread of Zebra Mussels \(4/12/13\)](#)

The discovery of zebra mussels in East Okoboji and Upper Gar lakes is changing the way the Iowa Department of Natural Resources operates its successful walleye collection and spawning effort to reduce the potential of spreading the aggressive aquatic invader to other waters.....

#### [6. Evaluating high pH for control of dreissenid mussels \(in press, April 2013\)](#)

Two field experiments were carried out using a custom built flow-through laboratory to test the effect of elevated pH on dreissenid mussels as a potential control method. Both experiments tested the ability of dreissenid pediveligers to settle under conditions of elevated pH and the long-term survival of adult dreissenids under the same conditions. The two experimental sites had different water quality and different species of dreissenids present.

#### [7. Quagga and zebra mussel risk via veliger transfer by overland hauled boats \(in press, April 2013\)](#)

Invasive quagga and zebra mussels (*Dreissena rostriformis bugensis* and *Dreissena polymorpha*, respectively) pose a great threat to US waters. Recreational boats constitute a significant risk for spreading the organisms. Recreational boats circulate large amounts of raw water when in use, and if not drained and dried correctly can transport many mussel larvae, called veligers. Veligers experience very high mortality rates; however, the number of potentially transported veligers can be a serious risk to non-infested bodies of water, especially if multiple boats are involved. The risk of veliger transport was calculated for Lake Mead and Lake Michigan using boat capacities for water circulation and specific veliger density data. Results illustrate the importance of draining, drying, and/or decontaminating recreational boats after use.

#### [8. What you need to know about boating permits for Lake Whatcom, Samish, WA \(4/26/13\)](#)

Boat inspections intended to stop the spread of harmful shellfish into Lake Whatcom and Lake Samish begin Saturday, April 27.

#### [9. Drought + Zebra Mussels = New Water Restrictions For Some N. TX Cities \(4/26/13\)](#)

The North Texas Municipal Water District plans to initiate Stage 3 of its conservation and drought plan June 1st.

## **WEEDS**

### [1. Province donates to control invasive plants \(4/18/2013\)](#)

The BC provincial government is providing a total of \$213,300 to the Regional District of East Kootenay and to the East Kootenay Invasive Plant Council to control the spread of invasive plants. Regional District of East Kootenay will receive \$23,300 and the East Kootenay Invasive Plant Council will receive \$190,000.....

### [2. Bighorn Reservoir Aquatic Plant Survey Report \(April 2013\)](#)

From Celestine Duncan: “Since weeds don’t respect boundaries, survey data from WY and MT portions of Bighorn Reservoir were combined into one report. Special thanks to Dr. John Madsen for the extra work in pulling this together. “

## **MARINE**

### **1. Tsunami**

#### [1. Japanese boat first confirmed tsunami debris in California \(4/26/13\)](#)

A 20-foot boat that washed ashore earlier this month in Northern California has been confirmed as the first debris from the 2011 Japanese tsunami to reach the state.....

Link to OR Tsunami stories go to (scroll down page):

[http://www.beachconnection.net/news/invasiv032513\\_601.php](http://www.beachconnection.net/news/invasiv032513_601.php)

For further WA Tsunami information also go to <http://marinedebris.wa.gov/>

#### [2. Alien Invaders? \(Invasive tunicates and their effect on shellfish aquaculture, April 2013\)](#)

While headlines about invasive tunicates have at times reached the breathless pitch of ads for campy horror films, there was legitimate concern because invasive tunicates in other regions of North America have severely impacted the aquaculture industry. Our Pacific Northwest shellfish industry annually pumps millions of dollars into the local economy. Introduced tunicates could potentially cause ecological and financial disaster.

### 3. Assessing Lethal Dissolved Oxygen Tolerance for Invasive Tunicate *Ciona savignyi* in Puget Sound

*Ciona savignyi* is a solitary tunicate (Phylum Chordata, Class Ascidiacea) native to Japan that has invaded coastal habitats in the north-east Pacific and New Zealand. In the Puget Sound of Washington, USA, we examined the ability of *C. savignyi* to survive in artificially created hypoxic environments to determine if reduced dissolved oxygen (DO) treatments could be a viable control method. In laboratory bioassays, treatment groups that were immersed in DO concentrations ranging from completely hypoxic (1 mg/L) to low DO (5 mg/L) had zero survivorship of individually isolated tunicates after 14 to 22 days of exposure, respectively. Additionally, hypoxic conditions (approximately 1.5 mg/L) were created in the field using polyethylene tarp wraps applied around dock surfaces fouled with *C. savignyi* in a Puget Sound marina.....

## **OTHER**

### 1. The NAS Alert System: A Look at the First Eight Years

The U.S. Geological Survey's Nonindigenous Aquatic Species (NAS) database program (<http://nas.er.usgs.gov>) tracks the distribution of introduced aquatic organisms across the United States. Awareness of, and timely response to, novel species introductions by those involved in nonindigenous aquatic species management and research requires a framework for rapid dissemination of occurrence data as it is incorporated into the NAS database. In May 2004, the NAS program developed an alert system to notify registered users of new introductions as part of a national early detection/rapid response system. This article summarizes information on system users and dispatched alerts from the system's inception through the end of 2011. The NAS alert system has registered over 1,700 users, with approximately 800 current subscribers. A total of 1,189 alerts had been transmitted through 2011. More alerts were sent for Florida (134 alerts) than for any other state. Fishes comprise the largest taxonomic group of alerts (440), with mollusks, plants, and crustaceans each containing over 100 alerts. Most alerts were for organisms that were intentionally released (414 alerts), with shipping, escape from captivity, and hitchhiking also representing major vectors. To explore the archive of sent alerts and to register, the search and signup page for the alert system can be found online at <http://nas.er.usgs.gov/AlertSystem/default.aspx>

2. Link to Google Trends, which shows the relative interest in invasive species using Google search behavior as a metric. This is a very interesting tool. You can type in any search term and see how and where it is trending; go to [Thanks to Mark Sytsma]

### 3. Resources from the 3/28/13 Nutria Management in the Pacific Northwest Meeting Available.

All resources (including presentations) from the meeting are now available online at:  
<http://www.clr.pdx.edu/projects/ans/nutria.php>

You will also find the resources from the 2007 meeting on that site. Additionally, please consider signing up for the regional nutria email list at:  
<https://www.lists.pdx.edu/lists/listinfo/nutria>

### [4. ND Researchers detect invasive species efficiently \(4/12/13\)](#)

A team of Notre Dame researchers has developed a transportable, two-part system for detecting the presence of invasive species in aquatic environments.....

### [5. Teachers Inadvertently Spread Invasive Species \(4/23/13\)](#)

.....Sam Chan, a biologist who researches invasive species at Oregon State University, is currently leading the collaborative project with U.S. and Canadian researchers. A survey of nearly 2,000 teachers found that schools had released dozens of well-known invasive species, like crayfish, waterweeds, mosquito fish, and red-eared slider turtles .....

## FISH

### [1. The Effects of Juvenile American Shad Planktivory on Zooplankton Production in Columbia River Food Webs \(2013\)](#)

Columbia River reservoirs support a large population of nonnative American Shad *Alosa sapidissima* that consume the zooplankton that native fishes also rely on. We hypothesized that the unprecedented biomass of juvenile American Shad in John Day Reservoir is capable of altering the zooplankton community if these fish consume a large portion of the zooplankton production. We derived taxon-specific estimates of zooplankton production using field data and a production model from the literature. Empirical daily ration was estimated for American Shad and expanded to population-level consumption using abundance and biomass data from hydroacoustic surveys. *Daphnia* spp. production was high in early summer but declined to near zero by September as shad abundance increased. American Shad sequentially consumed *Daphnia* spp., copepods, and *Bosmina* spp., which tracked the production trends of these taxa. American Shad evacuation rates ranged from 0.09 to 0.24/h, and daily rations ranged from 0.008 to 0.045 g·g<sup>-1</sup>·d<sup>-1</sup> (dry weight) over all years. We observed peak American Shad biomass (45.2 kg/ha) in 1994, and daily consumption (1.6 kg/ha) approached 30% (5.3 kg/ha) of zooplankton production. On average, American Shad consumed 23.6% of the available zooplankton production (range, <1–83%). The changes in the zooplankton community are consistent with a top-down effect of planktivory by American Shad associated with their unprecedented biomass and consumption, but the effects are likely

constrained by temperature, nutrient flux, and the seasonal production patterns of zooplankton in John Day Reservoir. American Shad add to the planktivory exerted by other species like *Neomysis mercedis* to reduce the capacity of the reservoir to support other planktivorous fishes. The introduction of American Shad and other nonnative species will continue to alter the food web in John Day Reservoir, potentially affecting native fishes, including Pacific salmon *Oncorhynchus* spp.

## [2. Lionfish Attacking Atlantic Ocean Like A Living Oil Spill \(4/17/13\)](#)

A gluttonous predator is power-eating its way through reefs from New York to Venezuela. It's the lionfish, and although researchers are coming up with new ways to protect some reefs from the flamboyant maroon-striped fish, they have no hope of stopping its unparalleled invasion.....

## [3. Guest commentary: Fish eDNA suggests Asian carp closing in on Great Lakes \(4/25/13\)](#)

It all started with a simple question. In late 2008, while sitting around after work with a group of colleagues, Lindsay Chadderton from The Nature Conservancy asked, "Do you think there's fish DNA in water?"

## [4. New test results show no DNA evidence of Asian carp, but scientists urge continued action \(4/4/2013\)](#)

Minneapolis-St. Paul, Minn.,— New analyses for Asian carp DNA in water samples from the Mississippi and St. Croix rivers showed little evidence of bighead and silver carp, researchers announced in a report released today. The research study was coordinated by the Minnesota Aquatic Invasive Species Research Center at the University of Minnesota, and was funded by the Minnesota Environment and Natural Resources Trust Fund.

- Download the [complete eDNA report ofr 2013-1080](#) (or see <http://pubs.usgs.gov/of/2013/1080> )
- [Summary of the 2012 analysis](#) by Peter Sorensen

## **5. Goby Alert – Lower Columbia River**

See flyer at the end of this document.

## **LEGISLATION/FEDERAL BUDGET**

**1. Montana -- HB 586 (LC2136): HB 586 (LC2136): "Revise aquatic invasive species laws"** sponsored by Rep Mike Cuffe can be viewed at

<http://data.opi.mt.gov/bills/2013/billhtml/HB0586.htm> Total of \$1.58 million. Passed 3<sup>rd</sup> reading and **heading to gov office.**

## 2. President's Budget Requests \$2.6 billion for National Park Service, includes mussel \$\$\$

.....This budget includes a total of \$2.5 billion for National Park Service programs that support the President's America's Great Outdoors (AGO) initiative, including \$2.3 billion for national park operations; a total increase of \$48.4 million over 2012. Key increases include \$5.2 million to control exotic and invasive species such as **quagga and zebra mussels** [[Note: of this, \\$2 million is requested to increase support for quagga and zebra mussel management in parks](#)], \$2.0 million to enhance sustainable and accessible infrastructure across the national park system, and \$1.0 million to foster the engagement of youth in the great outdoors. These increases are partially offset by programmatic decreases to park operations and related programs totaling \$20.6 million.

## 2. WA Aquatic Invasive Species Legislation

Sen. Honeyford's legislation, Substitute Senate Bill [5702](#), regarding aquatic invasive species was delivered to Governor on 4/23.

**3. National Ocean Policy:** This week, the Obama Administration released a plan to turn its National Ocean Policy into actions that will help improve the ocean economy and ocean and coastal community resilience. The Implementation [Plan](#) focuses on five main issue areas: the Ocean Economy, Safety and Security, Coastal and Ocean Resiliency, Local Choices, and Science and Information [**invasive species mentioned in document**]

**4. The Water Resources Development Act of 2013, [S.601](#)** was introduced in March by Senator Barbara Boxer (D-CA) and co-sponsored by Senator David Vitter (R-LA). NOTE: See SEC. 5007 "Aquatic Invasive Species Prevention and Management; Columbia River Basin" (Page 184).

**UPDATE:** The Water Resources Development Act is expected to see Senate floor time early next month, one of the bill's co-sponsors said yesterday. Senate Environment and Public Works Chairwoman Barbara Boxer (D-Calif.) said WRDA ([S. 601](#)), which she drafted with ranking member David Vitter (R-La.) will likely come to the floor when Congress returns from next week's recess. [Source: E&E Daily, 4/24/13]

## 5. "[Sensible Environmental Protection Act](#)"

A bipartisan group of senators is aiming to strip a court-ordered U.S. EPA requirement that pesticide users who spray over water get new permits. The "[Sensible Environmental Protection Act](#)" (SEPA) from Sens. Kay Hagan (D-N.C.) and Mike Crapo (R-Idaho) concerns a permitting system that followed a 2009 federal appeals court ruling in *National Cotton Council v. EPA*. The ruling found that EPA's pesticide regulations were

not sufficient to protect the nation's waterways from pesticide contamination and ordered it to develop new permits. [Source: E&E Daily, 4/24/13]

6. [MN House passes bill with increases to fighting invasive species](#) (4/25/13)

ST. PAUL — DFL lawmakers in the Minnesota House of Representatives passed an Environment, Natural Resources and Agriculture omnibus bill last Thursday on a vote of 69 to 61. The bill invests an additional \$1.7 million in the Minnesota Department of Agriculture, strengthens the Department of Natural Resources' (DNR) ability to monitor shrinking groundwater and surface water levels across the state, and takes serious steps to prevent the spread of invasive plants and species, like Asian Carp.

## TRAININGS/VOLUNTEER OPPORTUNITIES

1. [Call for Citizen Science Invasive Species Volunteers: Join the effort to help locate and eradicate invasive plants from WA State!](#)

The PNW Invasive Plant Council is a non-profit conservation group (<http://www.pnw-ipc.org/>) working in partnership with the Washington Dept. of Agriculture (WSDA) and other state and local conservation groups on a Citizen Science EDRR (Early Detection Rapid Response) program. With funding from the National Fish and Wildlife Foundation, we are in our second year and are very excited to recruit new volunteers and inspire our current volunteer base to search for newly emerging invasive plant populations within our target areas. Our target areas are on public lands (e.g., National Forests, Wildlife Conservation Areas, and Natural Area Preserves etc.) within eight WA counties (Grays Harbor, Mason, Pierce, Thurston, Lewis, Kittitas, Yakima and Klickitat). If you are hiking, boating, kayaking, horseback riding or working in these areas and are interested in participating in our program, you are invited to attend one of our two upcoming trainings on **May 5th and 6th** (1pm – 3:30pm).

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**National Fish and Wildlife Foundation Pulling Together Initiative for Invasive Plants** (terrestrial and aquatic). For information regarding grants to control invasive plants go to: <http://www.nfwf.org/Pages/pti/pti2013rfp.aspx>. RFP's are due **May 17th, 2013**. Web link has detailed instructions and related information [thanks Celestine Duncan]

## MEETINGS

### MAY

#### 1. California's Boating Clean and Green Program is offering free AIS seminars 5/14; 6/13; 6/20

California's Boating Clean and Green Program is offering free seminars to teach boaters; fishermen; state and local officials; and marina, port and yacht club operators about their role in combating aquatic invasive species (AIS) on California's waterways.....

**2. Columbia River Basin Team of the 100<sup>th</sup> Meridian Initiative:** May 14, 2014, Heathman Lodge, Vancouver WA. [Draft agenda and registration information has been sent out on this listserv]

### JULY

1. Aquatic Plant Management Society Annual Meeting: July 14-17, 2013; The Westin Riverwalk San Antonio, TX. Make your reservations now at <http://apms.org/>

#### 2. Registration is now open for the PNWER 3rd Annual Invasive Species Conference!

**July 17, 2013; Anchorage, Alaska, Dena'ina Conference Center:** Join federal, state, tribal and local government agencies; academic institutions; non-profit organizations; industry leaders; legislators; and others in developing regional strategies to address the threat of invasive species to our natural resources, economy, and quality of life. Early bird registration rate end **5/31/13**.

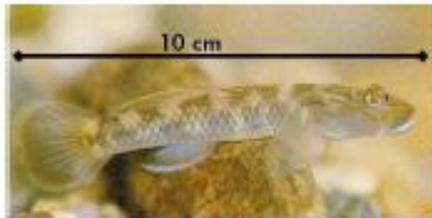
### AUGUST

#### 1. 8th International Conference on Marine Bioinvasions: August 20-22, 2013, Vancouver, Canada

### SEPTEMBER

1. Save the Date - the [WRP](#) will hold their Annual Meeting in Portland, Oregon on September 11 - 13, 2013. The first two days of the conference will be information sharing, presentations and the business meeting. The last day of the conference will be a field trip. More information on the agenda and other details will available in the coming months.

# GOBY ALERT 2013!



Images by Ik Soo Kim from *Illustrated Encyclopedia of fauna and flora of Korea, Vol. 37: Freshwater fishes*

The nonnative Amur goby (*Rhinogobius brunneus*), also known as the orange reed-clinging goby, continues to appear sporadically in western Oregon and Washington waters. The first population detected in North America still occurs in the East Fork Lewis River. Additional specimens have been found in the lower Sandy River, Ramsey Wetland in the Columbia Slough, and the lower Columbia River estuary. Most recently, a growing population has been monitored in Duncan Creek watershed of Skamania County, WA. Please watch for this species in other Pacific Northwest waters, particularly if you are conducting fish surveys. **Note that it has been misidentified as a native sculpin.**

## Distinguishing features:

- Fused pelvic fins, which form a suction-cup structure on the chest of the fish. The pelvic fins of sculpin are separate.
- Red or dark line running from the anterior margin of eye to the tip of its snout on both sides of its head. Native sculpins do not (one species has a spot of pigment at the tip of snout, but not a line connected to the eye)
- Breeding males are very distinctive – fleshy mouths, colorful fins (white margins on anal, dorsal fin) and bodies (red and blue). Otherwise, this species has mottled, cryptic coloration similar to patterns seen on sculpin.
- Some populations are amphidromous, spending several months in brackish/marine water before returning to freshwater to live as adults.
- Juveniles look very similar to darters.
- Body length up to 10 cm.
- Large mouths
- Perch on bottom substrate

More information at: <http://goo.gl/8wD7k>



## If you find this fish:

- Document where/when/etc.
- Take photos if possible
- Collect/preserve a specimen (freezing is an option)
- Report to 1-877-STOPANS
- In Washington: <http://www.wdfw.wa.gov/ais/reporting/>
- For more info, contact Tim Counihan, USGS 509-538-2299, ext. 261, [tcounihan@usgs.gov](mailto:tcounihan@usgs.gov)