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AQUATIC INVASIVE SPECIES NEWS

11/01/2019

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RECOMMENDED

Ocean research: The tiny hitchhiker's guide to San Francisco Bay (10/16/19)

Photo: SF Examiner

In 1849, the Gold Rush brought over 700 ships carrying fortune-seeking gold miners to the San Francisco Bay Area looking to "strike it rich." Little did they know that historical events like this, and a boom in the maritime industry, would bring an influx of vessels carrying tiny aquatic hitchhikers. Today, after a century and a half of maritime industry, San Francisco Bay is now home to more invasive species than any estuary in the world.

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Global shipping traffic in and out of San Francisco Bay continues, which means a higher risk of introducing more invasive species, such as the burrowing isopod *Sphaeroma quoyanum*, to the Bay from their attachment to the hulls of ships visiting our massive harbor. While this isn't the only way that species are moved in and out of ports, it's a major contributor to a worldwide problem.

From microalgae to barnacles, organisms attach themselves to the surfaces of ships, a process which scientists call "biofouling." Biofouling affects everyone who has a stake in the health of San Francisco Bay. In addition to spreading non-native species, when marine life attaches to a ship's hull, it increases drag, lowering a ship's fuel efficiency. Lowered fuel efficiency leads to higher exhaust emissions, which both damages the environment and increases operating costs for the maritime industry.

Researchers like myself want to understand these migrating microscopic organisms, like those attached to the underside of a 65,000 DWT Panamax Tanker ship crossing the Pacific from Asia and travelling up through San Francisco Bay. I work at San Francisco State University's Estuary & Ocean Science Center, with Dr. Andy Chang of the Smithsonian Institute and Dr. William Cochlan of San Francisco State University, where we are measuring how such long voyages through widely different ocean conditions affect these hitchhikers…
[Full Story Here]

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PUBLIC COMMENT

Comment Period Open on Draft Outline for a Work Plan for a Federal Aquaculture Regulatory Task Force

NOAA, on behalf of the National Science and Technology Council's Subcommittee on Aquaculture, is soliciting review and comment on the Draft Outline for a Work Plan for a Federal Aquaculture Regulatory Task Force. **The 30-day comment period regarding the draft outline is open through November 8, 2019.**

This draft outline lays out the components of a Work Plan for a Federal Aquaculture Regulatory Task Force. The proposed goal of this plan is to address the Federal strategic goal of improving regulatory efficiency and predictability for domestic freshwater and marine aquaculture under existing laws and regulations.

The Subcommittee on Aquaculture, previously known as the Interagency Working Group on Aquaculture and the Joint Subcommittee on Aquaculture, is a statutory subcommittee that operates under the Committee on Environment of the National Science and Technology Council under the Office of Science and Technology Policy in the Executive Office of the President. It is co-chaired by the Department of Agriculture, Department of Commerce, and the White House Office of Science and Technology Policy.

The Subcommittee on Aquaculture will consider the comments received before issuing a draft work plan. Comments may be submitted electronically or in writing. Comments can be submitted electronically at www.federalregister.gov

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by searching under document citation 84 FR 54122 or through the Aqua.RegPlan@noaa.gov email address. For more information on the Subcommittee, the draft outline, or the task force visit www.ars.usda.gov/SCA/taskforce.html

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Now Accepting Nominations: ISCBC Together in Action Awards

The Together in Action (TIA) Awards program, launched in 2014, recognizes initiatives, groups, and individuals that demonstrate leadership, innovation and collaboration in the field of invasive species in BC. The award program also recognizes the achievements of ISCBC Executive Director Gail Wallin, for providing provincial and national leadership and innovation in the area of invasive species. The awards are presented annually at ISCBC's Forum to those individuals and groups who have made an outstanding contribution in the past year. From education and outreach, to businesses and youth, the ISCBC's awards program is designed to engage the public and encourage nominations from a range of areas.
2020 is a Milestone year. Please submit your nominations for all five categories by the deadline November 15, 2019.

Oregon Invasive Species Council (OISC)

Seeking nominations for 7 member seats to serve a 2-year term
January 1, 2020 - December 31, 2021.
Could you, or someone you know, be a good addition to the OISC?
Send us a nomination by November 12, 2019.
Strong nominees will have experience or expertise that relates to invasive species prevention or control and/or specialize in one of the following diverse areas of interest: natural resource industries; wildlife management or conservation; environmental or outdoor education; K-12 education; environmental law; marine, freshwater, estuarine systems; parks and recreation; domestic or international trade; travel and tourism. Nominations and questions about the process should be sent to coordinator@oregoninvasivespeciescouncil.org

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Oregon's 100-Year Water Vision

This fall and winter the Oregon Governor's Natural Resources Office and state agencies will be listening, learning, and gathering information about the 100-Year Water Vision and its associated goals and problem statements, while engaging leaders across the state to learn more about water in Oregon. In addition, we'll be working to increase our understanding of data and gaps, and funding coordination needs to prepare for future funding requests.

Objectives this fall include:
Refine the draft vision document, problem statement, and goals as appropriate from feedback received. Increase awareness by water leaders of the context around the 100-Year Water Vision and its goals, including examples. Building on the Integrated Water Resources Strategy (IWRS),

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increase understanding of available data and gaps in data related to current surface and groundwater condition, as well as built and natural water infrastructure conditions and needs. Building on the IWRS, increase identification of priority data needs for effective built and natural water infrastructure decision-making. Increase knowledge of current state and federal funding available for water system investments and funding gaps.

Zoom Virtual Meeting: November 13 and 15, 12pm-2pm

EXTENDED:

WDFW seeks SEPA public comment on Cooke Aquaculture farming of rainbow trout/steelhead

Yesterday, the Washington Department of Fish and Wildlife (WDFW) began a 21-day public comment period regarding Cooke Aquaculture's proposal to farm sterile (triploid) rainbow trout/steelhead in Puget Sound.

The Department posted a State Environmental Policy Act (SEPA) mitigated determination of non-significance that analyzes the environmental impacts of Cooke's proposal to transition from farming Atlantic salmon to farming steelhead in several of the company's existing facilities. These facilities include four net pens located near Rich Passage and Skagit Bay, but in the future may cover three more Puget Sound net pens currently owned by Cooke.

"Given the escape of Atlantic salmon in 2017, we know that there is a heightened sense of concern around the impacts of fish aquaculture in Puget Sound," said WDFW Fish Program Director Kelly Cunningham. "We want to hear from the public about Cooke Aquaculture's proposal and our proposed permit requirements."

In addition to agreeing to farm only sterile fish, Cooke will also need to prescreen any fish destined for net pens in Washington waters to ensure that they are free of disease.

Cooke submitted a five-year Marine Aquaculture Permit application to WDFW in January 2019, and a SEPA Environmental Checklist with supporting documents in July 2019.

WDFW continues to work with its natural resource agency partners to provide oversight and ensure compliance with the terms of aquaculture permits and leases in Puget Sound. Cooke's proposal would also be subject to additional regulatory review by WDFW's sister state agencies before the proposed transition could take place.

The public is asked to **submit comments by November 22, 2019**. The determination, including ways to comment, and supporting documents can be found at: https://wdfw.wa.gov/licenses/environmental/sepa/open-comments

NEW SPECIES SIGHTINGS

Want to get more new species alerts?

USGS NAS: https://nas.er.usgs.gov/AlertSystem/default.aspx

IMAP INVASIVES: https://www.imapinvasives.org

DRESISSENIDS

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[Minnesota]
Zebra mussels confirmed in Lotus Lake in Carver County (10/31/19)

A water sample with zebra mussel larvae led to follow-up searches and confirmation of zebra mussels in Lotus Lake, located in the city of Chanhassen in Carver County.

Zebra mussels confirmed in Big McDonald Lake in Otter Tail County (10/31/19)

A report from a vigilant lake property owner led to the confirmation of zebra mussels in Big McDonald Lake in Otter Tail County.

Water sample reveals zebra mussel larvae in Lomond Lake in Clearwater County (10/28/19)

It's the first lake in the county with zebra mussels

Water sample reveals zebra mussel larvae in Ten Mile Lake in Cass County (10/28/19)

The Minnesota Department of Natural Resources has confirmed zebra mussel larvae in a water sample taken from Ten Mile Lake near Hackensack in Cass County.

Zebra mussels confirmed in Swan Lake in Otter Tail County (10/21/19)

The Minnesota Department of Natural Resources has confirmed individual zebra mussels in Swan Lake in Otter Tail County. Mineral Lake and several small, unnamed lakes connected to and downstream of Swan Lake will also be listed for zebra mussels. All of these lakes flow into North Ten Mile Lake, which was listed for zebra mussels in 2017.

[South Dakota]
Zebra mussels confirmed in Lake Francis Case (10/23/19)

The South Dakota Department of Game, Fish and Parks has confirmed the presence of adult zebra mussels in Lake Francis Case. Chamberlain Area Fisheries Supervisor Chris Longhenry says the invasive mussels were found on plate samplers attached to docks and also along shoreline areas. He says densities are low in Lake Francis Case at this time, but the mussels can be found throughout most of the reservoir. Lake Francis Case will now be classified as infested with zebra mussels. In July, zebra mussels were confirmed in Lake Sharpe, another mainstem Missouri River reservoir located upstream from Lake Francis Case. Reproducing populations of zebra mussels were discovered in Lewis and Clark Lake and in the Missouri River below Gavins Point Dam in 2015. [USGS Record]

[Texas]
Dreissena polymorpha (zebra mussel) was found in Little Brazos River, TX. [USGS Record]

OTHER AIS

[Oregon]
Pectinatella magnifica (magnificent bryozoan) was found in a private pond in Douglas County, OR. [USGS Record]

[Texas]
Pomacea maculata (giant applesnail) was found in San Antonio River, downtown San Antonio, TX. [USGS Record]

WATCH LIST

Be on the lookout for *Bacopa rotundifolia* along the Columbia River. Contact: Mark D. Sytsma (503) 307-6131 mark.sytsma@pdx.edu

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DREISSENID MUSSELS

Video: Protecting Lake Tahoe (NMMA)

Dreissenid Mussel Rapid Response in the Columbia River Basin: Recommended Practices to Facilitate Endangered Species Act Section 7 Compliance

The U.S. Fish and Wildlife Service, Pacific States Marine Fisheries Commission, Creative Resource Strategies, LLC., and many contributing partners have finalized the document entitled, Dreissenid Mussel Rapid Response in the Columbia River Basin: Recommended Practices to Facilitate Endangered Species Act Section 7 Compliance. This manual was developed in support of the Department of the Interior Safeguarding the West from Invasive Species initiative, and it contributes to the commitment to increase capacity for aquatic invasive species response. This manual is intended to align closely with the existing Columbia River Basin Interagency Invasive Species Response Plan: Zebra Mussels and Other Dreissenid Species.

Specifically, this manual contains important information to facilitate action agency compliance with section 7 of the Endangered Species Act (ESA) during invasive Dreissenid mussel rapid response actions in the Columbia River Basin (CRB). The manual strives to make the ESA regulatory process as efficient and effective as possible for action agencies by providing guidance to expedite the ESA section 7 consultation process through emergency consultation procedures. Therefore, the manual provides information about control techniques for Dreissenid mussels and the potential impacts to federally listed species and critical habitat in the CRB, along with ways to avoid and minimize adverse impacts caused by response actions.

For questions or a copy of the document, please contact: Theresa Thom, Aquatic Invasive Species Coordinator, U.S. Fish and Wildlife Service, Pacific Region. Email: Theresa_Thom@fws.gov, (503) 736-4722.

Researchers: Invasive mussels throw off Great Lakes food web (10/31/19)

Invasive mussels in the Great Lakes are linked to problems with the freshwater seas' food web, issues that impact both commercial and sport fisheries. Speakers at the 12th annual Freshwater Summit in Traverse City dissected invasive mussels' appearance since the mid-1990s and the accompanying alterations to the food web. They also talked about research into how the mussels can be combated not only in Lake Michigan, but across the Great Lakes and inland lakes and streams.

[Montana] What's in the water? Researchers wrap up sampling season on Flathead Lake (10/24/19)

Once the research vessel Jessie B. came to a stop Wednesday morning, Phil Matson got to work. The Flathead Lake Biological Station's research coordinator lowered a sensor-equipped plastic tube called a "hydrolab" into the water as the boat gently rocked, then slowly unspooled a cable to let it sink deeper. As it dropped, Matson kept his eye on the water temperature readings. "We're looking for the thermocline," a boundary layer between warmer and colder levels of Flathead Lake, he explained. The water there is "a

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little dense," and more likely to trap what Matson was looking for: the larvae and DNA of invasive mussels.

[North Dakota] Recent searches for new zebra mussel infestations came back negative (10/22/19)

Following discovery of zebra mussels in North Dakota's Lake Ashtabula in May, the good news is that over the course of the summer and early fall, the North Dakota Game and Fish Department's searches for additional new zebra mussel infestations all came back negative. On the other hand, recent assessments of these invasive aquatic nuisance species in North Dakota waters where they already exist provide a good example of how quickly zebra mussel populations can expand once they are established in a new environment.

CSKT invasive species effort presented at the Western Regional Panel on Aquatic Nuisance Species gathering in Missoula (10/17/19)

CSKT Natural Resources Department fisheries biologist Barry Hansen discussed the CSKT's decades long battle against various invasive species that have altered the ecosystem of Flathead Lake and other waterways and water bodies on the reservation, and measures the CSKT have taken to address the issue.

(Washington) State, tribes, feds prep for mussel invasion (10/15/19)

State, federal and tribal governments will hold a practice on how to respond if invasive mussels make it to Lake Roosevelt. Invasive quagga and zebra mussels are small, non-native, freshwater mollusks that have caused significant environmental and economic harm in the United States, according to a news release from Washington's Invasive Species Council. "Zebra and quagga mussels have not been found in Washington waters, but they have been found on boats transported across state lines. In the past two years alone, we have intercepted more than 50 boats with mussels attached," Allen Pleus, aquatic invasive species manager at the Washington Department of Fish and Wildlife, said in the release. "We see this exercise as a critical, proactive step to safeguard our state's ecosystems and economic interests."

Harmful algal blooms showing up in northern Michigan lakes (10/19/19)

You've probably heard about harmful blue-green algae on Lake Erie (it's actually not algae at all - it's cyanobacteria). A large bloom of it famously shut down the City of Toledo's water supply in 2014. But, did you know that cyanobacteria also blooms on Michigan's inland lakes every year?... Parker says the reason could be the invasion of zebra mussels. The mussels eat other tiny organisms in the water, but they don't always eat cyanobacteria — giving it an unfair advantage.

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BOAT INSPECTION/DECON/TECH NEWS

[Oregon] ODFW Intercepts, Decontaminates Kayaks with Quagga Mussel Shells from Lake Powell, Next Planned Launch Was Deschutes River (10/31/19)

Oregon Department of Fish and Wildlife technicians intercepted and decontaminated two inflatable kayaks at the Ontario Watercraft Inspection station Sunday. The kayaks were just in Lake Powell at or near Bullfrog Marina, and the next planned launch site was the Deschutes River. “Lake Powel is infested with invasive quagga mussels and the kayaks had sand and broken quagga mussel shells from the lake in them. Had they launched in the Deschutes without being decontaminated, mussel tissue from the broken shells would be shed in the water, giving us a positive result for the presence of quagga mussels during environmental DNA sampling,” said Rick Boater, Invasive Species and Wildlife Integrity Supervisor.

BALLAST WATER/BIOFOULING

Calling for answers on ballast water sampling, monitoring and analysis rules (10/29/19)

The countdown to compliance is upon us, and many unanswered questions about ballast water regulation requirements remain, writes DeNora Water Technologies General Manager Dr Stelios Kyriacou

Marine Safety Center issues Ballast Water Management System Type Approval Certificate to Miura Co., Ltd. (10/29/19)

The Coast Guard Marine Safety Center issued its 23rd Ballast Water Management System Type Approval Certificate to Miura Co., Ltd., after a detailed review of the manufacturer’s type approval application determined the system met the requirements of 46 CFR 162.060.

Treatment System Sales Boom as Ballast Water Rules Take Effect (10/25/19)

As the rolling deadline for ballast water treatment compliance closes in for existing ships, demand for treatment systems is booming, according to Norway-based manufacturer Optimarin. The company's sales more than doubled in the third quarter relative to the same period last year, lifted by several new fleet agreements with owners and operators.

How San Diego Scientists Are Helping the Navy Keep Ship Hulls Clean (10/22/19)

Scientists around the country, including some in San Diego, are working with the U.S. Navy to tackle an age-old problem known as biofouling. It's the accumulation of marine organisms on the bottom of a boat… Hall says the average boat owner can spend around $1,500 a year just to get rid of these invasive and heavy marine species. And if the boat owners do nothing, the buildup still costs them money. That's because this pile-up decreases fuel performance. "The new boater is often shocked," Hall said. "They purchase a new boat for the first time and three or four months later we get an emergency

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call. And they've got a forest down there and they try to go to Catalina ... and realize they're going at half the speed they could be," Hall said.

Ballast Water Management Convention Amendments Enter Into Force (10/14/19)

The Ballast Water Management Convention amendments formalizing the implementation schedule for the D-2 standard entered into force on October 13. The International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004 (the BWM Convention) entered into force in 2017. The amendments formalize an implementation schedule to ensure ships manage their ballast water to meet a specified standard (D-2 standard) aimed at ensuring that viable organisms are not released into new sea areas. They also make mandatory the Code for Approval of Ballast Water Management Systems which sets out how ballast water management systems used to achieve the D-2 standard have to be assessed and approved.

MARINE

Harm to Table: Turning an Invasive Crab into a Delicacy (10/30/19)

As European green crab populations balloon in warming waters, New England scientists work to develop a commercial fishery

[British Columbia] 'I did not expect that in my lifetime': Rare poisonous fish discovered on Vancouver Island (10/28/19)

"I don't normally see that species in the pet trade," said Hanke. "It could have come up on some fishing gear, or it could have come offshore in the warmer water in the warm blob that we've seen the last few years." That blob is also responsible for bringing other tropical species north. Last month, an olive ridley sea turtle was rescued in Port Alberni, one that veterinarians say likely got caught in the warm waters of the blob. Although the spotted porcupine pufferfish isn't hurting native B.C. species, other invasive species that show up have the potential to.

(Washington) European green crab totals climb in Neah Bay, decline in Dungeness (10/16/19)

Keep trapping or not: that's the dilemma facing the Makah Tribe in Neah Bay. Their totals for European green crab, an invasive species known for edging out local sea life such as Dungeness crab and eelgrass beds, surpassed their own high mark from last year. From April 1-Oct. 2, Adrianne Akmajian, a marine ecologist with Makah Fisheries, and her crews caught 1,262 green crab between the Tsoo-Yess River, Wa'atch River and near Tsoo-Yess Beach. That's more than 20 times the Sequim area's totals.

Related: Concerns grow over invasive crab species in Drayton Harbor (10/16/19)

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AQUACULTURE

[Washington] No Atlantic salmon released from sinking Cooke Aquaculture pen (10/22/19)

A portion of a salmon pen began sinking near Bainbridge Island, bringing to mind the 2017 incident where 250,000 invasive salmon were released into Puget Sound. The Washington State Department of Ecology said no Atlantic salmon were released into the waters near Bainbridge Island when a Cooke Aquaculture pen with the fish started to sink. On Sunday, a pen owned by Cooke Aquaculture started to sink near Fort Ward Park. The Department of Ecology said the salmon were not in the sinking portion of the pen, so they did not escape into Washington waters.

Insecticide-Resistant Sea Lice Spread to Wild Fish (10/16/19)

A new study confirms the role of the aquaculture industry in the spread of resistant salmon lice in Norway. Until a few years ago, chemical delousing was the most important tool for fighting sea lice in Norwegian salmon farming operations. But after a while, most of the drugs became less effective, because changes in the genes of the sea lice made them resistant. As a result, chemical treatments no longer work as well. Instead, the continued use of chemicals has led to natural selection that favours sea lice that have the mutation that makes them resistant. These lice multiply more effectively, and researchers have now found a greater number of resistant lice and fewer sensitive ones. It turns out the resistant sea lice are also spreading to wild salmon.

FISH

Bio-acoustic fish fence to aid Asian carp battle in the Great Lakes (10/30/19)

The collaboration between local, state and federal agencies to creatively deal with the increasing Asian carp population in the lakes area will be highlighted Nov. 8 at Barkley Lock and Dam. The U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, Kentucky Department of Fish and Wildlife Resources, and Tennessee Wildlife Resources Agency will participate in a ceremony to showcase the deployment of a bio-acoustic fish fence to deter the spread of the invasive species in southern waters.

Montana FWP Finds Illegally Introduced Walleyes in Upper Thompson Lake (10/24/19)

Montana Fish, Wildlife & Parks biologists found two walleyes in Upper Thompson Lake this month during a routine fisheries survey. This is the first documented detection of the predacious non-native fish in Lincoln County and is an illegal introduction. FWP staff set a pair of nets Oct. 8 in the upper section of Upper Thompson Lake, a popular fishery that is part of the Thompson Chain of Lakes west of Marion along U.S. Highway 2. Each net caught a single walleye. Both fish were female and measured 18 and 21 inches, respectively. FWP will begin an initial investigation, including follow-up surveys to understand the potential walleye distribution and population size.

Minnesota Aquatic Invasive Species Research Center (MAISRC): Genetic control of invasive fish species (10/19)

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MAISRC researchers are working on a novel method for controlling invasive common carp by introducing a synthetic species-like barrier to reproduction. The method involves altering the genetics of males before releasing them among the population, leading to sterile offspring and the eventual control of the species overall. In order to make this method usable, this study aims to develop this technology further in zebrafish, from which the system could be later applied to invasive species. Learn more about this work in the video.

US Wildlife Officials Alarmed Over Invasive Snakehead Fish Proliferation (10/17/19)

US Geological Survey said that snakehead fishes could be harmful to wildlife because it can out-compete or displace other species in the water. It could also alter food webs and ecological systems that could leave a permanent change to other species in water bodies. A snakehead fish, according to a report by The Mercury News, is considered a non-native invasive species and usually affects other native species by competing for food and habitat. Federal Lacey Act made it illegal to trade forms of wildlife that are deemed to be damaging to habitats, including the snakehead fishes. The snakehead fishes are inhabitants from Russia, China, and several parts of Southeast Asia, according to federal data released by USGS. They were first reported in Czechoslovakia in the 1950s. The first snakeheads were seen in the United States in 2002.

Eat up! TWRA applauds Asian carp filet sales (10/16/19)

An invasive water species that became a nuisance in Tennessee waterways is now available for purchase at a Paris grocery store. Asian carp fillets are now available in two and five-pound bags at Lakeway IGA. The Tennessee Wildlife Resources Agency thanked the grocery store on Facebook for helping the fight against Asian carp. Officials with the Tennessee Wildlife Resources Agency said Asian carp are a big concern for several reasons. "The most immediate concern is for the safety of boaters. Silver carp are known to jump when disturbed by boats. A jumping carp that collides with a passenger in a moving boat can cause serious injury. This scenario is most common in shallower waters and boaters should slowly retreat from areas with jumping carp to avoid impact," a statement on TWRA's website said.

You could get paid to fish for an invasive species in the Grand Canyon. Here's how (10/14/19)

Invasive fish species have long been a challenge for scientists in the Grand Canyon because they attract fishermen but can devour threatened native species. Now, the National Park Service is ready to try a new approach to keeping things in balance: pay fishermen and women to harvest one of the worst offenders, the brown trout. These invaders like to eat other fish, including the Canyon's endangered native species, the humpback chub. Anglers already have to have a fishing license, and many simply fish for sport, using the "catch and release" practice as they pursue the non-native trout species in the upper reaches of the Canyon. The new Park Service plan would have them catch the fish and remove them — and pay for the effort. Also, according to a statement released by the Park Service, tribal youth from the 11 tribes with cultural and historic ties to the Grand Canyon will be offered guided fishing trips to Lees Ferry Reach, where the incentives will be offered.

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AQUATIC PLANTS

[Idaho] Invasive water plant found in Bear Lake (10/17/19)

An invasive water plant, Eurasian watermilfoil, has been growing in Bear Lake unchecked for nearly two years, said Jeremy Varley. Varley is the program manager for the noxious weed program at Idaho Department of Agriculture. Eurasian watermilfoil is native to Europe, Asia and North Africa and can raise havoc in lakes if not checked The Idaho Department of Agriculture found the plant and then informed their Utah counterpart, Aaron Eagar from the Utah Department of Agriculture. Varley said his crews were conducting a routine survey of the lake, looking for invasive species when they discovered it. “We sent a sample off to the lab to make sure it was Eurasian watermilfoil,” he said. “Once the plant was verified, we formed a treatment plan and went to work removing it from the lake.”

(Alaska) Invasive plant could cost salmon industry $159 million per year, ISER study finds (10/14/19)

A common aquarium plant illegally dumped into Alaskan waters that has adapted to cold weather could threaten wild salmon habitat and cost the commercial fishing industry hundreds of millions of dollars. A recent study conducted by ISER, the Institute of Social and Economic Research, found that if not managed, the cost of the elodea invasion could cost the commercial sockeye fishing industry $159 million each year. They even say that there is a 5% chance that the costs could exceed $577 million annually. Elodea is Alaska's first invasive aquatic plant and has spread across the state in the past decade.

FRESHWATER

Penn State Behrend students discover invasive shrimp species in Lake Erie (10/22/19)

Near midnight at Erie's Lampe Marina, with their first throw of the net, three Penn State Behrend students caught something that had never before been seen in Pennsylvania waters: a tiny, black-eyed shrimp known as *Hemimysis anomala*.

California's Delta smelt are dying: How this affects the state's water (10/18/19)

The Delta smelt is such a small and translucent fish that it often disappears from view when it swims in the turbid waters of its home in the Sacramento-San Joaquin Delta. However, it's also been disappearing from the Delta entirely. There are more than a few factors pushing the Delta smelt toward extinction. Ted Sommer, lead scientist at the California Department of Water Resources, lists the historic droughts, rising temperatures, invasive species, contaminants, and the long-term conversion of natural marshland in the Delta to agriculture and cities, all as contributions to the Delta smelt’s decline.

Volunteers wrap up effort to survey Upper Truckee River for invasive species (10/17/19)

Community members, supported by staff from the League to Save Lake Tahoe, Tahoe Resource Conservation District and California State Parks, have wrapped up a three-year

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effort to survey the Upper Truckee River for aquatic invasive plants. This effort will help prevent the spread of invasives during major upcoming restoration projects along the river, Lake Tahoe's largest tributary. "Our citizen science volunteers are some of the most passionate Tahoe lovers I have met who are always looking for meaningful ways to Keep Tahoe Blue," exclaimed Emily Frey, the League's citizen science program coordinator. "This type of effort allows them to dive deeper into the issues and serve as ad-hoc aquatic biologists … a truly unique and meaningful experience."

[Scientific Publication] Poirier, J. and J. Harris. 2019. Aquatic Invasive Species Monitoring at Lower Columbia River Basin National Fish Hatcheries using eDNA and Visual Surveys; FY 2018 Annual Report. U.S. Fish and Wildlife Service, Columbia River Fish and Wildlife Conservation Office, Vancouver, WA. 49 pp

CLIMATE CHANGE

Study Shows How Marine Heat Wave (2013-17) Destroyed California's Bull Kelp Forests, Abalone Fishery (10/24/19)

First the sea stars wasted to nothing. Then the purple urchins took over, eating and eating until the bull kelp forests were gone. The red abalone starved. Their fishery closed. Red sea urchins starved. Their fishery collapsed. And the ocean kept warming… Similar impacts are being observed in kelp forests from Baja California to Alaska. The study shows how bull kelp deforestation triggered the closure of a $44 million recreational abalone fishery and the collapse of the north coast commercial red sea urchin fishery.

Invasive lionfish have huge appetites. Hotter oceans will make them hungrier, new study finds (10/19/19)

As the ocean gets warmer, lionfish get hungrier, a new study indicates. With climate change happening now, that's bad news for the Atlantic marine ecosystems the invasive lionfish has ravaged for decades. Native to the Indian and Pacific oceans, lionfish were first released into the ocean as unwanted pets and can now be found off the coast of Florida and as far south as Brazil. Lauded for their beautiful maroon and white stripes, lionfish have become the bad boys of the Carribean, wreaking havoc in the coral reef ecosystems they invade. They're also common on Florida's reefs and have been called the biggest threat to Florida's fishing industry.

New Report Documents Climate Change Impacts on Alaska Last Five Years, Fastest Warming State (10/17/19)

A new report from the Alaska Center for Climate Assessment and Policy, in partnership with the International Arctic Research Center and the University of Alaska, Fairbanks, describes major changes in temperature, sea ice, glaciers, permafrost, plants, animals, and oceans the past five years. The report, Alaska's Changing Environment, will be updated every three years. This first installment focuses most of its attention on the dramatic changes Alaska, the fastest warming state in the U.S., has experienced in just the last five years.

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[Scientific Publication]
Beaury, E. M., Fusco, E. J., Jackson, M. R., Laginhas, B. B., Morelli, T. L., Allen, J. M., Pasquarella, V. J., Bradley, B. A. (2019). Incorporating climate change into invasive species management: insights from managers. Biol Invasions. doi: 10.1007/s10530-019-02087-6.

> Summary: Interactions between invasive species and climate change present new challenges for invasive species management. However, it was unclear what the common concerns, management strategies, limitations, and research needs were for managing invasive species in a changing climate. In a survey of invasive species managers from government, non-profit, and private organizations across the U.S., Beaury et al. (2019) found that the majority of managers were very concerned about the influence of climate change on invasive species management but their organizations were significantly less so. Managers reported that lack of funding and personnel limited their effective management, and lack of information on how to manage presented an added challenge when considering the combination of invasive species and climate change. Even so, 65% of managers reported successfully incorporating climate change into their management, which can be further facilitated by connecting managers across regions and by integrating existing research findings into management strategies. This study shows that if addressed collaboratively, climate change might be an opportunity to increase the efficiency and success of current management efforts.

OTHER

US owl-killing experiment raises thorny questions in Oregon, Washington (10/15/19)

> The federal government has been trying for decades to save the northern spotted owl, a native bird that sparked an intense battle over logging across Washington, Oregon and California decades ago. After the owl was listed as threatened under the Endangered Species Act in 1990, earning it a cover on Time Magazine, federal officials halted logging on millions of acres of old-growth forests on federal lands to protect the bird's habitat. But the birds' population continued to decline. Meanwhile, researchers, including Wiens, began documenting another threat — larger, more aggressive barred owls competing with spotted owls for food and space and displacing them in some areas.

JOBS/GRANTS

JOBS

The California Department of Fish and Wildlife seeks to fill several currently advertised and soon-to-be advertised positions within the newly established Nutria Eradication Program. We would greatly appreciate your assistance in helping spread the word about these vacancies. Please see below for descriptions of each position and visit https://www.calcareers.ca.gov/CalHRPublic/Search/JobSearchResults.aspx#kw=nutria

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for more information and to apply.

- Senior Environmental Scientist (Specialist): responsible for coordinating with the Program Manager and Operations Supervisors to strategically develop and track spatial assignments for project field staff working across the multi-region project area, pursuing and managing access agreements to public and private lands containing habitat requiring nutria monitoring, collaborating with the project Geographic Information Systems (GIS) Analyst and Data Manager to review project data and ensure effective completion of spatial assignments and consistency with project strategies, conducting statistical analyses and ecological/population modeling to evaluate, inform, and improve project methodologies and strategies, and communicating effectively with a wide audience, including stakeholders and the general public, through written products, presentations, and verbal communications. This position requires excellent written and verbal communication, critical thinking, and analytical skills, and the ability to work both independently and as part of a collaborative team.

- Environmental Scientist: one of the Program's lead scientists on nutria (*Myocastor coypus*) coordination, detection, and eradication. This will include conducting investigations and directing a field crew within the southern portion of the nutria infestation. The incumbent will also closely coordinate with other regions and Department functions, as well as other affected and involved local, State, and Federal agencies. Work includes preparing draft reports and correspondence and answering routine questions from the public relative to Departmental nutria efforts. The primary geographical focus of this position will be in Fresno, Madera, Merced, Stanislaus, Tuolumne, and Mariposa counties, but work may be assigned in any part of the area of nutria infestation.

- Fish and Wildlife Technician (up to 9 positions): responsible for the detection and eradication of invasive nutria within the southern portion of the infestation. Work includes surveys, trapping, data collection, communicating with landowners to obtain entry permits, and answering routine questions from the public relative to Departmental nutria efforts. The primary geographical focus of these positions varies based on the office (Stockton or Los Banos) each vacancy is based in and is defined within each job ad.

Soon to be posted:

- Scientific Aids (up to 15): to assist the project Environmental Scientists and Fish and Wildlife Technicians with all survey, trapping, necropsy, and data collection tasks.

- Environmental Scientists (2; Sacramento): to implement the Judas Nutria Project in collaboration with CDFW's Wildlife Investigations Laboratory and Nutria Eradication Program field staff. Duties will include coordinating the sterilization and tagging (satellite GPS) of Judas nutria and conducting strategic releases in order to remotely monitor for association with wild, previously undetected nutria. Project releases will be conducted to detect and locate any wild nutria in areas where they have not yet been detected, to detect remnant or migrating nutria in previously trapped locations where

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nutria are believed to be at zero or near-zero densities, and within their home range to evaluate nutria spatial ecology in California (e.g., average home range size, average movement and dispersal distances and patterns, and variation by sex, age, season, etc.).

California State Parks' Division of Boating and Waterways: Environmental Scientist position in the Quagga and Zebra Mussel Infestation Prevention Grant Program (QZ Grant Program)
The final filing date is 11/6/19.

The reporting location for this position is One Capitol Mall, Sacramento. This position will work under the supervision of the Senior Environmental Scientist (Supervisory). The Environmental Scientist gathers, interprets, and reports data on the environmental effects of invasive quagga and zebra (dreissenid) mussel infestation prevention activities, implements prevention measures, and ensures project activities are in compliance with the requirements of local, state, and federal regulatory agencies, as applicable. The scientist is expected to apply scientific methods and principles for analyzing and evaluating data related to the Quagga and Zebra Mussel Infestation Prevention Grant Program (QZ Grant Program). This position should have knowledge of basic principles of scientific research, statistical methods, and applicable laws, rules, regulations, and requirements pertaining to the prevention of a dreissenid mussel infestation.

State of Wyoming invites applications for the position of:
FWWB11-11527-Aquatic Invasive Species Coordinator-Laramie or Cheyenne
Salary: $5,288.77 - $6,815.43 monthly
Location: Laramie **Closing date:11/30/19 11:59 pm**
The Wyoming Game and Fish Department is seeking an Aquatic Invasive Species Coordinator located in Cheyenne or Laramie, WY. This position coordinates aquatic invasive species (AIS) prevention and control activities for the state of Wyoming. The position implements the Wyoming AIS program, including coordination of outreach, watercraft inspections, statewide monitoring and interagency and interstate coordination. Human Resource Contact: Laura Curtis 307-777-4507

John A. Knauss Marine Policy Fellowship Program
The Knauss Fellowship provides a unique educational experience to graduate students who have an interest in ocean, coastal and Great Lakes resources and in the national policy decisions affecting those resources. The program, which is sponsored by the NOAA's National Sea Grant College Program, matches highly qualified graduate students with hosts in the legislative and executive branches of government located in the Washington, D.C. area for a one-year paid fellowship. Past fellows have developed successful careers in a variety of sectors, including government, academia, consulting, private companies, and nonprofit. **Application Deadline: February 21, 2020, 5:00PM PST**

The Delta Science Program and California Sea Grant are excited to announce another round of Delta Science Fellowships. This fellowship funds up to two (2) years for research projects that will advance the state of knowledge underlying high priority science issues that affect the California Bay-Delta and its management as a coupled human and natural system.

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Eligible applicants include postdoctoral researchers, Ph.D. students, and masters students. Priority topic areas are identified in the full request for proposals, and include research in both the natural and social sciences. **Application Deadline: December 20, 2019, 5:00 p.m. PT**

California Sea Grant and California Polytechnic State University-San Luis Obispo seek a California Sea Grant Extension Specialist, to be based in San Luis Obispo, California. The extension specialist will be a full-time employee of Cal Poly hired as a research scientist. Application Deadline: January 03, 2020

GRANTS

Now Open: FY 2020 Grant Opportunity for Marine Debris Prevention Projects

> The NOAA Marine Debris Program is proud to announce our FY 2020 "Marine Debris Prevention" federal funding opportunity. This opportunity provides funding for projects that actively engage and educate a target audience (such as students, teachers, industries, or the public) in hands-on programs designed to raise awareness, provide practical approaches, reduce barriers, and encourage and support changes in behaviors to ensure long-term prevention of marine debris.
> **The Letter of Intent (LOI) submission period for prevention projects will extend from September 17 to November 5, 2019.** Applicants who submit successful LOIs will be invited to submit a full proposal following the LOI review period.
> For more information on this FY 2020 grant opportunity, please visit Grants.gov and the NOAA Marine Debris Program's website.

Announcement of Notice of Funding Opportunity; Executive Summary
Funding Opportunity Title: National Competitive Harmful Algal Bloom Programs
National Ocean Service (NOS), National Oceanic and Atmospheric Administration (NOAA), Department of Commerce
Announcement Type: Initial
Funding Opportunity Number: NOAA-NOS-NCCOS-2020-2006219
Catalog of Federal Domestic Assistance (CFDA) Number: 11.478, Center for Sponsored Coastal Ocean Research - Coastal Ocean Program
Dates: The required letters of intent (LOI) sent by e-mail to nccos.grant.awards@noaa.gov and must be received by 11:59 p.m. Eastern Time on the specified date:
PCMHAB: Monday, November 11, 2019
HAB Socioeconomics: Monday, November 11, 2019
Full applications must be received and validated by Grants.gov by 11:59 p.m. Eastern Time on the date specified.
PCMHAB: Friday, January 10, 2020
HAB Socioeconomics: Friday, January 10, 2020
Electronic submissions received after the deadline will not be considered.

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FEDERAL/STATE/PROVINCIAL LEGISLATION, RULES, ACTIONS

State/Province

California delays ballast water treatment standard (10/18/19)

2020 was meant to be the start date for the California Marine Invasive Species Act (MISA), which would have required a stricter standard of ballast water treatment than that sought by IMO or the USCG. Implementation of the Act has now been delayed until 2030

(Washington) State upgrades northern pike invasive species listing (10/14/19)

Washington managers are preparing for when northern pike, a voracious invasive predator, make it below the Grand Coulee Dam. The species was moved from a Level 1 invasive species to a Level 3 at a September Washington Fish and Wildlife Commission meeting. The move sets the stage for declaring an invasive species emergency if the pike get below the Grand Coulee Dam, commissioner Kim Thorburn said. An emergency declaration would provide the Washington Department of Fish and Wildlife with more money to aggressively target northern pike.

Executive

EPA administrator announces Trump turnaround on Great Lakes funding (10/22/19)

Wheeler announced what he called an aggressive action plan for the Great Lakes Restoration Initiative. He said President Trump does not intend to cut the initiative's $300 million budget. The announcement is a reversal of the Trump administration's efforts over the last three years to eliminate funding for the initiative. Wheeler said the new action plan lays out priorities for the next five years. "These include cleaning up toxic pollutants, keeping the Asian carp out of the Great Lakes, and controlling other existing invasive species," said Wheeler. The Healing Our Waters-Great Lakes Coalition says it supports the restoration priorities in the new plan. "However, any plan is only as good as the resources behind it," said Laura Rubin, director of the Coalition, in a written statement. "For the past three years, the Trump Administration has worked to cut Great Lakes funding and eviscerate clean water protections. If the Trump Administration is serious about accelerating the restoration and protection of the Great Lakes, then it can start by reversing its decision to gut clean water protections for streams and wetlands."

Opinion: A victory for the python, a loss for Florida (10/14/19)

Just as Florida faces its most daunting invasive species challenges, the Trump administration has killed the federal panel that coordinated efforts to identify and eradicate them. That saves a mere $30,000, but it will cause untold damage to the state's native flora and fauna. It's a bad decision that should be reversed.
Related: Trump administration acts as new invasive species (10/17/19)

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Congressional

NEW: An AIS federal legislative table is up on the web on the www.westernais.org website... go to https://www.westernais.org/regulations and scroll all the way to the bottom

Barrasso: We Must Improve Flood Prevention, Expand Water Storage & Combat Invasive Species (10/23/19)

Today, U.S. Senator John Barrasso (R-WY), chairman of the Senate Committee on Environment and Public Works (EPW), delivered the following remarks at a hearing titled "Improving American Economic Competitiveness through Water Resources Infrastructure: Federal Panel." The hearing featured testimony from Ryan Fisher, principal deputy assistant secretary of the Army (Civil Works); Lieutenant General Todd Semonite, commanding general and chief of engineers at the U.S. Environmental Protection Agency; and Charlotte Bertrand, deputy assistant administrator for policy at the Office of Water at the U.S. Environmental Protection Agency. For more information on witness testimony and an archived webcast click here.

Recovering America's Wildlife Act has Legislative hearing (10/17/19)

WASHINGTON, DC – Today, the House Natural Resources Committee held a legislative hearing on Congresswoman Debbie Dingell (D-MI) and Congressman Jeff Fortenberry (R-NE)'s Recovering America's Wildlife Act (RAWA, HR3742). RAWA has broad support of conservation and sportsmen's leaders. This bipartisan legislation would help promote and enhance our nation's conservation efforts, and ensure the long-term health of fish and wildlife throughout the country. RAWA is the most signification investment in wildlife and habitat conservation in a generation. The bill would dedicate roughly $1.4 billion to the Wildlife Conservation Restoration Program for proactive, voluntary efforts led by the states, territories and tribal nations to prevent vulnerable wildlife from becoming endangered.

Archived Hearing available here

NOTE: According to *E&E Daily* (10/18/19):

The Trump administration yesterday sounded amenable to an ambitious, bipartisan effort to boost wildlife conservation funding. While voicing some budgetary caution, Stephen Guertin, deputy director for policy for the Fish and Wildlife Service, told a House panel there's potential benefit in the legislation authored by Reps. Debbie Dingell (D-Mich.) and Jeff Fortenberry (R-Neb.). "The service supports the intent of the 'Recovering America's Wildlife Act' and notes the potential budgetary impacts of the bill would require further analysis," Guertin stated. Thirty-two Republicans and 93 Democrats are co-sponsoring the bill, H.R. 3742. It would establish a dedicated funding stream to provide more than $1.3 billion annually in support of state-level wildlife protection efforts. [*Source: Reprinted from E&E Daily,* ***10/18/19,*** *with permission from Environment & Energy Publishing, www.eenews.net; 202/628-6500*].

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Feeding America: Making Sustainable Offshore Aquaculture a Reality Hearing: October 16, 2019; U.S. Sen. Roger Wicker, R-Miss., chairman of the Senate Committee on Commerce, Science, and Transportation, will convene a hearing titled, "Feeding America: Making Sustainable Offshore Aquaculture a Reality," at 10:00 a.m. on Wednesday, October 16, 2019. This hearing will examine opportunities and barriers to expanding sustainable aquaculture in the U.S. Witnesses will discuss the environmental, economic, and social realities of open ocean aquaculture, and the need for a streamlined and predictable policy framework for advancing the development of offshore aquaculture. Archived Hearing available here.

Congress to Consider Fish Farming Legislation – Cantwell Highlights Need for Safety, Citing 2017 Salmon Spill in Puget Sound (10/16/19)

As the Senate Committee on Commerce, Science, and Transportation prepares to consider legislation to encourage more aquaculture fish farming in American waters, U.S. Senator Maria Cantwell (D-WA), the Ranking Member of the committee, raised concerns about the risks of offshore finfish farming in a hearing this morning. In her remarks, Cantwell highlighted the 2017 spill of nearly 263,000 non-native Atlantic salmon into Puget Sound. Jeremiah Julius, the Chairman of the Lummi Nation, testified at the hearing at Cantwell's invitation about the spill's impact on Tribal treaty rights, the health of wild salmon, and the Salish Sea ecosystem.

Related: Wicker Hearing Highlights Sustainable Aquaculture (10/16/19)

Budget and Appropriations

Senate passes first spending package as shutdown looms (10/31/19)

The Senate passed its first fiscal 2020 spending package on Thursday, as lawmakers have weeks to prevent the second government shutdown of the year. Senators voted 84-9 on the approximately $332 billion spending package, which combined four domestic spending bills covering the departments of Agriculture; the Interior; Commerce and Justice (along with science-related spending) and Transportation and Housing and Urban Development.

Senators on both sides of the aisle are predicting that Congress will need to pass another CR next month given the snail's pace of the 2020 funding bills. Senate Appropriations Committee Chairman Richard Shelby (R-Ala.) told reporters earlier this month that without a "miracle" lawmakers would need another stopgap bill.

Negotiations between the House and Senate on how to divvy up overall spending among the 12 bills — a step Democrats say is key to moving the process forward — have not borne fruit.

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Related: Appropriations talks rejuvenated as possible shutdown looms (10/30/19)

U.S. Senate's proposed $14 million funding increase to fight Asian carp not matched in House budget (10/22/19)

More federal funding may soon be appropriated to Tennessee for its fight against Asian carp, putting an increased national spotlight on an issue state conservationists argue is the greatest threat to one of the world's most biodiverse temperate aquatic ecosystems. However, when and how much assistance is yet to be determined, as the U.S. Senate and House are widely separated on how much funding should be given.

TRAININGS, WEBINARS, CONFERENCES AND MEETINGS

Events: Archived Materials

Events: Webinars, Trainings, Conferences and Meetings

Watercraft Inspection Training
The Pacific States Marine Fisheries Commission has added
additional trainings to the WIT schedule:

WIT II
November 19-20, 2019
January 14-15, 2020
February 11-12, 2020
March 10-11, 2020

WIT III
January 28-30, 2020

HOSTING OPPORTUNITIES
If you would like to host a WIT training in 2020 there are some dates still available.
Contact quaggadee@cox.net if interested in a WIT II/WIT III/
Advanced Decontamination Training
April 7-8, 2020
April 21-22, 2020
May 5-6, 2020

For more information, go to website links or contact Quagga D @ (702)236-3814 or
quaggadee@cox.net

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November

Webinar: Using eDNA as an early detection tool for invasive mussels
November 4, 2:00 p.m. - 3:00 p.m. Eastern
1:00-2:00 p.m. Central, 12:00-1:00 p.m. Mountain, 11:00 a.m. -12:00 p.m. Pacific)
Please join us for a webinar hosted by the Invasive Mussel Collaborative examining the study and use of environmental DNA (eDNA) to detect invasive zebra and quagga mussels. The presenters will discuss eDNA sampling as a detection tool and the potential for its use in Dreissenid management. Register here!
The webinar will feature presentations from:

- Jon Amburg and Adam Sepulveda, United States Geological Survey
- Anett Trebitz, U.S. Environmental Protection Agency

National Aquatic Nuisance Species Task Force Fall Meeting November 6 -7, 2019; Beltsville, MD

Great Lakes Panel on Aquatic Nuisance Species Fall Meeting November 13 - November 14 at Ann Arbor, MI

Department of Livestock, MISC, and USDA-APHIS Wildlife Services Host Feral Swine Coordination Summit on November 15
Summit Goals and Intended Outcomes:

» Provide education regarding Montana's regulations pertaining to feral swine
» Launch Montana's Squeal on Pigs education and outreach campaign
» Engage neighboring states/provinces and partners to improve coordination of feral swine management to prevent introduction in Montana
» Identify consensus and next steps on implementing a coordinated monitoring strategy

When: November 15, 2019
Where: Northern Hotel, Billings
Registration: RSVP to Stephanie Hester, shester@mt.gov, 406-444-0547. Space is limited.

3rd Environmental DNA Technical Exchange Workshop (3eDTEW) (November 18-21) Florida Fish and Wildlife Research Institute St. Petersburg, Florida. Priority registration will be given to government eDNA researchers until July 1st, after which the workshop and course registration will be open to non-government participants.

NAISMA Webinar: November 20th at 1:00 pm CST: How the National Park Service Integrates Partnerships, Prevention, and Management of Invasive Species. Presented by: Terri Hogan, Invasive Plant Program Manager, National Park Service. Within the realm of invasive species management, partnerships and collaboration are increasingly essential for success. Collaboration occurs at all levels within the National Park Service (NPS); it takes many forms, involves a range of partners including other agencies, states, tribes, and cooperative weed management areas and must reach beyond our boundaries to address the issues that invasive species pose to our public

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lands. This webinar will showcase examples of successful invasive plant management that are achieved through partnership efforts including, prevention and restoration within the NPS.

December

Innovations in Invasive Species Management Conference and Training. December 10-12th, 2019. Coeur d'Alene, Idaho. The conference hosts people from throughout the US and World looking for new techniques and inspiration from successes to manage a wide range of invasive species. The 2019 innovations Conference is being hosted by the Pacific Northwest Invasive Plant Council https://www.pnw-ipc.org/ The Northern Rockies Invasive Plant Council http://www.nripc.org/ and Invasive Plant Control, Inc. http://www.invasiveplantcontrol.com/

Idaho Invasive Species Council Meeting *Save the Date*- December 4th, 2019 @ 9:00 AM MST: The Fall 2019 Idaho Invasive Species Council meeting is tentatively scheduled for Wednesday December 4th at ISDA Boise office. Meeting agenda items include an ISDA program update for both invasive species and noxious weed programs as well as time for other stakeholder round table updates. A secondary date (if needed) is proposed for December 11th. Please RSVP for either conference phone or in-person that way we can get a rough head count for attendance. nicholas.zurfluh@isda.idaho.gov

Washington Invasive Species Council: December 19, 2019, Olympia, Natural Resources Building Room 172.

2020

January

The next meeting of the 100th Meridian Initiative Columbia River Basin Team is scheduled for Wednesday and Thursday, January 22 & 23, 2019 at the Embassy Suites, Portland Airport. Further details will be forthcoming in the near future. Minutes and presentations from past meetings can be found at https://www.westernais.org/regional

July

2020 60th Aquatic Plant Management Society (APMS) Meeting
Date: Jul 19, 2020 to Jul 22, 2020. Venue: Hyatt Regency San Antonio Riverwalk. Location: San Antonio, Texas

August

2020 105th Ecological Society of America Annual Meeting

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Date: Aug 02, 2020 to Aug 07, 2020. Venue: Salt Palace Convention Center. Location: Salt Lake City, Utah

October

2020 15th Annual Biocontrol Industry Meeting: Date: Oct 19, 2020 to Oct 21, 2020.Venue: Congress Center Basel. Location: Basel, Switzerland

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AIS NEWS was compiled by Robyn Draheim and Stephen Phillips. Past issues of *AIS NEWS* can be found @ http://www.westernais.org/ under the "News" tab.