

# Member Update Reports for the Western Regional Panel Meeting

## September 2-3, Lake Tahoe, CA

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### U.S. FEDERAL AGENCIES

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#### *U.S. Army Corp of Engineers*

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No report.

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#### *USDA- APHIS*

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No report.

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#### **REGION 2** (Colorado, w Wyoming, SD, NE, KS)

- The Rocky Mountain region has had a successful past coordinating and implementing our AIS Program. The waters of Colorado are at extreme risk of infestation from invasives as a burgeoning Front Range population receives almost all its water from large mountain reservoirs where recreation is also extremely important to local economies. However, to date there have been no known introductions of zebra or quagga mussels on USFS.
- Other AIS identified in Region 2 in the last decade include: Japanese knot weed, rusty crayfish, Eurasian watermilfoil, New Zealand mudsnails and spiny water flea.
- Funding: In 2011, Regional Leadership began removing funds from the AIS program, which had been \$400,000 per year. Funding was reduced to \$75,000 in FY15, all of it for boat inspections on the Arapahoe National Recreation Area. For FY16, no funds have been identified for AIS in the Region.
- Although the state of Colorado was able to increase their funding in 2015 to “make-up” for the Forest Service’s reduction, the state will most likely not be able to continue this funding. While no formal conversations have been made between the state and federal agencies on how to rectify our funding shortfall, we hope that yet unknown solutions can be found.

#### **REGION 3** (AZ, NM)

- Crayfish are one of the top nuisance species affecting our native fishes and other native aquatic species in the Southwestern Region. Mechanical removals are being used in an attempt to control numbers in small areas on both the Tonto and Apache-Sitgreaves National Forests. Additionally, in cooperation with USFWS and USGS, ammonia was applied in a trial to eliminate crayfish from a stock tank on Coconino National Forest. Results were mixed, reducing but not eliminating the crayfish.
- Similarly, bullfrog removal is underway in some springs on Coronado National Forest to benefit native species.
- Invasive riparian weed control activities took place on the Apache-Sitgreaves, Coconino, Coronado, Lincoln, and Prescott National Forests.

#### **REGION 4 (UT, N, s. ID, w. WY)**

- The National Wildfire Coordinating Group carried out engine equipment testing at San Dimas R&D and is closer to finishing interagency protocols for preventing inadvertent spread of AIS by fire operations. The guidebook will be national, not regional, in scope and should provide consistency across agencies as well as sound science. ETA is now = December 2015.
- The Regional Office funds AIS inspection, outreach, and AIS monitoring on high risk USFS waterbodies, through partnerships with Utah Department of Wildlife Resources, Idaho Department of Agriculture, and Wyoming Department of Game & Fish. During 2012, 2013, & 2014 boating seasons, our state partners interdicted, inspected, and educated 105,000 watercraft; 910 of these boats arrived from infested waters and required decontamination prior to launch. State partners also monitored 28 USFS waterbodies multiple times each season for invasive mussels & plants. To date, there are no known occurrences of invasive mussels in any Regional USFS waterbody. The current 2015 season is the last to be covered by the FY2013 AIS earmark. A funding request for \$400,000 to cover our state partners for the next 3 years is pending regional approval.
- The RO provides AIS preventative guidance on the Region 4 website, including regional distribution data (as spatial data accessible for download) for ~ 10 aquatic invasive species. [http://www.fs.usda.gov/detail/r4/landmanagement/resourcemanagement/?cid=fsbdev3\\_016101](http://www.fs.usda.gov/detail/r4/landmanagement/resourcemanagement/?cid=fsbdev3_016101)

#### **REGION 6 (Oregon & Washington)**

- The Region is finalizing permanent USFS law enforcement authority to prohibit the transport of AIS on NFS lands, and has trained up our LEOs on the inspection and identification of AIS. We are working with PNW Research to develop a sampling design for AIS across the Region, similar to the sampling scheme in the Greater Yellowstone Area. We will be using our PIBO, AREMP, and Level II Stream Survey data to inform the sampling design. Our intent is to say with some certainty that particular AIS do not occur on NFS lands within the Region. Data from sites with high potential for invasion will be supplemented with e-DNA data. We will continue to implement the fire equipment inspection clause we inserted into the boiler plate of our fire equipment contracts last year. We continue to conduct grassroots outreach to firefighters on each Forest and fire contractors to inform and empower them in AIS management.

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#### ***U.S. Environmental Protection Agency***

No report.

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#### ***USDOC - NOAA***

#### ***National Marine Fisheries Service-Alaska Region***

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- Unfortunately, ANS activities have been significantly curtailed due to limited staff and funding. However, we were able to release a web story on the status of marine invasive species in Alaska ([http://www.nmfs.noaa.gov/stories/2015/06/06\\_24\\_15invasive\\_species\\_in\\_alaska.html](http://www.nmfs.noaa.gov/stories/2015/06/06_24_15invasive_species_in_alaska.html)).
- We have received interest in Alaska marine invasive species issues from the NOAA Hollings Scholar Internship program and will be pursuing that.
- We also included invasive species in the Kachemak Bay NOAA Habitat Blueprint goals, <http://www.habitat.noaa.gov/habitatblueprint/KachemakBay.html>
- We participated in the 2015 NOAA Aquatic Invasive Species Workshop in Santa Cruz.
- Partnering with the Alaska Region an Alaska Fisheries Science Center scientist, Katharine Miller is finalizing a paper "Forecasting at the edge of the niche: *Didemnum vexillum* in Southeast Alaska", as part of a National Fish and Wildlife Foundation grant on this species in Alaska.

**USDOC – NOAA**

**Monterey Bay National Marine Sanctuary**

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- Final Rule for Revised Introduced Species Regulations. The Greater Farallones and Monterey Bay National Marine Sanctuaries ‘Regulations on Introduced Species’ was published in the Federal Register February 19th, 2015. After extensive discussions with the State of California, NOAA published a final rule prohibiting introduced species in the state waters of the Greater Farallones and Monterey Bay National Marine Sanctuaries (GFNMS and MBNMS, respectively). This final rule clarifies that introduced species are prohibited in the state waters of the two sanctuaries with the following two exceptions: catch and release of striped bass, and shellfish species introduced as part of state permitted commercial aquaculture activities in the Tomales Bay region of GFNMS. It also allows MBNMS to consider authorization of state permits for certain introduced species of shellfish that may be reared in future commercial aquaculture projects in state waters of the sanctuary. (<http://montereybay.noaa.gov/new/2015/150219is-rev.html>)
- MBNMS staff located at the SWFSC FED Lab in Santa Cruz served as the local host for the 2015 NOAA Aquatic Invasive Species Workshop.
- MBNMS staff supported scientists from the Smithsonian on AIS surveys in kelp forest and rocky intertidal habitats along the central coast of California.  
([http://sanctuariesimon.org/projects/project\\_info.php?projectID=100419&site=true](http://sanctuariesimon.org/projects/project_info.php?projectID=100419&site=true))

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No Report.

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**Bureau of Land Management**

TBD

No report.

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**Bureau of Reclamation**

TBD

No report.

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**National Park Service**

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- Conducted quagga / zebra mussel prevention and / or containment programs at nine western parks (Amistad NRA, Curecanti NRA, Black Canyon of the Gunnison NP, Lake Mead NRA, Glen Canyon NRA, Bighorn Canyon NRA, Grand Teton, NP, Glacier NP, and Lake Roosevelt NRA)

- Supported ballast water research and development with an emphasis on technologies for treating the ballast water of grounded ships
- Conducted large-scale lake trout removal at Yellowstone Lake in Yellowstone NP and constructed barriers to prevent lake trout invasion at Glacier National Park.
- Began development of a Colorado River AIS Plan (ongoing).
- The NPS Lake Mead Exotic Plant Management Team conducted tamarisk control in southwest units of the National Park system.

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### ***U.S. Fish & Wildlife Service***

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### **Headquarters - Branch of Aquatic Invasive Species** – Craig Martin, [craig\\_martin@fws.gov](mailto:craig_martin@fws.gov)

- ANSTF Executive Secretary - The Executive Secretary position has been vacant since the retirement of Ms. Susan Mangin at the beginning of March 2014. Don MacLean is currently acting Executive Secretary until the position is filled. Executive Secretary recruitment is expected in August 2015.
- ANSTF Update - The next meeting of the Aquatic Nuisance Species Task Force (ANSTF) will take place in Silver Spring, MD on November 4 and 5, 2015. The agenda for the November meeting is currently under development and more information will be forthcoming.
- State/Interstate Aquatic Nuisance Species (ANS) Management Plan Grant Program - FAC received \$1 million in 2015 for the State/Interstate ANS Management Plan Grant Program. For 2015, 40 of the 42 ANSTF-approved plans applied for funding with each State receiving between \$23,800 - \$25,300. For FY16, the language from the House Report includes an additional \$1,000,000 for the State/Interstate ANS Management Plan Grant Program. New plans are still under various stages of development in Florida, Maryland, North Carolina, and West Virginia.
- Stop Aquatic Hitchhikers! (SAH!) - The SAH! campaign is now 13 years old and it is now time to upgrade and refresh the internationally-known campaign as well as integrate it with regional initiatives (like "Don't Move a Mussel" and "Clean, Drain, Dry"). Focusing on promoting an inclusive strategy that will allow our partners to get the biggest bang for their buck, this 21st Century Strategy is composed of numerous components, including: an updated and mobile-compatible website, multi-initiative brand standards, ongoing engagement of the recreational fishing and boating industries, a greater engagement of the military, and community engagement, networking and capacity building.
- Habitattitude - Under the DOI and PIJAC MOU, we are working with a website designer to update and modernize the <http://www.habitattitude.net/>. We will look to engage partners on this redesign through participation on an advisory and implementation committees. We are targeting to have a revised website published by this Fall. The new site will include content regarding the need for the pet owning public to responsibly select their companion animals while at the same time preventing release of animals and pets into the environment. Information tracks will be included into the website redesign dealing with aquatics, water gardens, reptiles/amphibians, and educators.
- Multi-species proposed rule - BAIS has prepared a multi-species proposed rule of 10 fish and 1 crayfish high risk species as injurious species. All species have a high climate match in parts of the United States, a history of invasiveness outside their native ranges, and, with one exception, are not currently found in U.S. ecosystems. We used Ecological Risk Screening Summaries to obtain climate-matching and other information. We anticipate being able to publish a proposed rule for public comment in late summer 2015.

- Salamander Chytrid Fungus - An emerging fungal disease, (*Batrachochytrium salamandrivorans* or “Bsal”), which is related to the already fatal amphibian chytrid fungus known as Bd has the potential to enter the United States through ongoing importations of salamanders. Not yet present in the United States, Bsal has also been shown to be lethal to many salamander species, including at least 10 native U.S. species, and is likely to affect more. The Service is the federal agency best positioned to prevent its introduction into the United States relying on its injurious wildlife authority under the Lacey Act. The Service is evaluating which salamander species should be listed as injurious wildlife to prevent the risk of Bsal’s introduction into the United States, which has devastated European salamander populations.

**Region 1 (HI, ID, OR, WA) – Robyn Draheim, [robyn\\_draheim@fws.gov](mailto:robyn_draheim@fws.gov)**

- The U.S. Fish and Wildlife Service (Washington Fish and Wildlife Office), in cooperation with the King County Noxious Weed Control Program, AmeriCorps volunteers, Washington Department of Fish and Wildlife, Washington Invasive Species Council, and the Clean Boating Foundation, distributed ANS information at the Seattle Boat Show 2015. The focus of the outreach activity is invasive species prevention, specifically the prevention of zebra and quagga mussels in freshwater via the “Clean, Drain, Dry” campaign. WFWO documented at least 1,785 conversations with boat show attendees.
- Pacific Islands Fish and Wildlife Office is working with partners to focus on pathway risks of AIS introductions into the state. Efforts have focused on biofouling, ballast water, and the risk management of biofouling. Hawaii’s Division of Aquatic Resources ANS Coordinator, which is supported by the ANS State Management Plan funding, was pivotal to these efforts.
- Idaho Fish and Wildlife office continued their cooperative effort to control *Corbicula* in Lake Pend Orielle working with the University of Idaho and Idaho Department of Agriculture.
- Region 1 continued to work closely with Pacific States Marine Fisheries Commission and NOAA Fisheries to compete BMPs and prepare for a Dreissenid rapid response action in Oregon or Washington.

**Region 2 (AZ, NM, OK, TX) – David Britton, [david\\_britton@fws.gov](mailto:david_britton@fws.gov)**

- Prioritized and allocated FY15 QZAP funding to address threat of invasive mussels in Lower Colorado River. Hosted conference call of QZAP partners to discuss progress of previously funded work and to gather input on strategy priorities.

**Region 6 (CO, KS, MT, ND, NE, SD, UT, WY) – Joanne Grady, [joanne\\_grady@fws.gov](mailto:joanne_grady@fws.gov)**

- Chair WRP Building Consensus committee which includes planning team calls, meetings in Denver for state AIS coordinators & legal committee, pre-WRP meeting in Tahoe, contributing to Federal Lands Management committee and working with FWS HQ and ABYC boat design partnership.
- Prioritization and allocation of 100th Meridian Initiative grant funding. Annual grant competition largely focused on supporting efforts to collectively protect the Western U.S. from invasive species spread.

**Region 7 (AK) – Mike Buntjer, [michael\\_buntjer@fws.gov](mailto:michael_buntjer@fws.gov)**

- No report

**Region 8 (CA, NV)– Ron Smith, [ronald\\_smith@fws.gov](mailto:ronald_smith@fws.gov)**

- No report
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- The Western Fisheries Research Center has been conducting research to better understand regional early detection monitoring for quagga and zebra mussels in the Pacific Northwest of the US. Included are efforts to better understand the probability of detecting an early infestation in the Columbia River, understanding how regional early detection efforts are distributed with respect to risk of introduction and establishment, compiling a regional database on boat ramps, and conducting a significant portion of the early detection monitoring in the lower Columbia River. For more information contact: Tim Counihan [tcounihan@usgs.gov](mailto:tcounihan@usgs.gov) at 509-538-2299.
- The Northern Rocky Mountain Science Center has been conducting multiple research projects that assess aspects of invasive aquatic organisms including assessing introduced American bullfrog movements and habitat use in the fall and winter in Montana, characterizing the genetic structure (haplotypes) of introduced American bullfrogs in Montana, developing and validating environmental DNA assay for Eurasian watermilfoil, assessing the effects of introduced brown trout on native Yellowstone cutthroat trout, and reviewing the natural history of introduced Northern pike in North America. For more information contact: Adam Sepulveda [asepulveda@usgs.gov](mailto:asepulveda@usgs.gov) at 406-994-7975.
- The Fort Collins Science Center has been conducting research that examines the ecology of Southern Watersnakes in Machado Lake, Harbor City, County of Los Angeles, California, including an assessment of control opportunities. While the scientists found no direct evidence that Southern Watersnakes are affecting native species in Machado Lake, they surmised that the population may serve as a source for intentional or unintentional transportation of watersnakes to bodies of water containing imperiled native prey species or potential competitors. For more information contact: Robert Reed [reedr@usgs.gov](mailto:reedr@usgs.gov) at 970-226-9464.

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## **CANADIAN FEDERAL MEMBER**

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No report.

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## **MEXICAN FEDERAL MEMBER**

No report.

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## **U.S. STATE GOVERNMENT AGENCIES**

### ***Alaska Department of Fish and Game***

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- During the summer of 2015, ADF&G and the Smithsonian Environmental Research Center (SERC) have been investigating treatment options to cause mortality to the invasive tunicate *Didemnum*

*vexillum* (Dvex) with the goal of evaluating the feasibility of a bay-scale treatment to eliminate Dvex from its sole location in Alaska. ADF&G and SERC divers deploy enclosure domes onto the seafloor in areas with one of two categories of substrata. Biocide treatments (salt, lime, and chlorine) are administered according to protocol, all treatments occur over a four hour timeframe. Throughout the treatment period water quality was measured for the chlorine treatments and salinity was measured for salt treatments in order to understand if target concentrations were achieved and over a period of time.

Research protocols were developed, permitting activities, logistics and planning occurred from fall 2014 through spring 2015. An additional field trip will have occurred between the deadline for these reports and the WRP annual meeting. More information will be reported during the short presentation at the meeting.

- In October 2014, ADF&G with assistance by USFWS and other partners in an interagency team completed the largest rotenone treatment to date in Alaska to eliminate northern pike (*Esox lucius*) from East and West Mackey, Derks and Union lakes and the connecting streams. This was the first treatment in an open-system that required neutralizing the rotenone at the outflow of the treatment zone. This was the eighth pike eradication project and the most complex. With \$1 million in state and federal funds, and treatments to occur over four years, the goal is to eradicate pike from the Soldotna Creek drainage by 2018. Gillnets were placed in the lake just before freeze up and they stayed in the lake over winter to catch any remaining pike. Prior to the October rotenone application, native Dolly Varden, steelhead, rainbow trout, lamprey, round whitefish, stickleback and sculpin were collected from the lakes and relocated to nearby systems. During the spring and summer of 2015, after eDNA testing indicated the lakes were free of pike, native fish were transferred back to the now pike-free lakes with the goal of restoring native fish populations in the treatment zones. In 2017, the remaining segments of Soldotna Creek and two remaining lakes will be treated to eliminate pike from the system, and eventually restore the native fish populations of the entire drainage.
- As a partner to the AK Department of Natural Resources (ADNR) and other local cooperative weed management areas and soil and water conservation districts, ADF&G has engaged in various capacities to eradicate and control *Elodea* spp. from waterbodies in the state. To date, *Elodea* spp. has been detected in 20 water bodies in Alaska. In fall of 2014, USFWS and local governments were able to fund and complete Fluridone herbicide treatments of three lakes on the Kenai Peninsula. These lakes will be treated again in 2016, and as needed in 2017. In June 2015, Lake Hood, the largest float plane lake in the U.S. was found to be infested with *Elodea* spp. ADNR had plans and permits to treat three Anchorage area lakes with Fluridone during July. With assistance by the AK Department of Environmental Conservation (ADEC), ADNR was able to get an emergency exemption from the Alaska Pesticide Use Permit in order to treat Lake Hood with diquat in July, as well.
- During 2013 and 2014, ADF&G engaged in opportunistic trapping for crayfish in the Buskin River drainage on Kodiak Island. Signal crayfish (*Pacifastacus leniusculus*) had been reported from the drainage occasionally over the previous ten years. When a student report “between five and ten” in 2012, ADF&G began attempting to understand the distribution and abundance of the crayfish. During the two years of opportunistic trapping no crayfish were captured. But each year after trapping had ceased, a crayfish was detected. In 2015, the Kodiak Soil and Water Conservation District (SWCD) began selective trapping, diver and shoreline surveys to better understand the threat crayfish may pose to the sockeye and coho salmon populations which had been identified by the Federal Subsistence Board as a resource important for customary and traditional use by the residents of Kodiak. With more targeted effort, the SWCD was able to successfully capture a total of seven crayfish, with one gravid female. At the time of this report, USFWS was investigating the possibility of increasing grant funds for the SWCD in Kodiak in order to continue trapping and to initiate planning for the next phase of effort.

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**Arizona Game and Fish Department**

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- AIS Program Vision (2016-2025) – This document is in final draft and provides guidance/vision for future objectives/strategies/funding sources that will work in concert with the State of Arizona AIS Management Plan of 2012.
- Expanded AIS Program Staffing Capabilities – Arizona’s AIS Program now includes; one (1) Program Coordinator; one (1) Program Specialist; two (2) Program Technicians {possible third Program Technician for Powell in 2016}; and four (4) summer Interns. This increase in person-power capacity was due mainly to successful approval of various Federal grants from the USFWS (QZAP; State AIS Plan), USBOR (for LCR AIS management), and the USBLM (Havasu).
- Expanded Outreach efforts and funding – Increased feet-on-the-ground ability to communicate with the public directly (surveys; Law enforcement capacity) and usage of popular media outfits (billboards; signage; radio ads) from March through September. Cost for 2015 Media Plan was \$208,000, an increase of over 50% as compared to 2014.
- Continuing Law Enforcement Efforts; Specific AIS Patrols - “Pull the Boat Plug - Everytime” law outreach efforts were continued by placement metal signs statewide which remind boaters to pull their boats plug when leaving the vicinity of an infested water body. In addition to the signs, in 2014-2015 our Law Enforcement Branch and Regions (along with our AIS program) has held a total of 18 AIS patrols (7 at Lake Pleasant, 2 at Bartlett Lake, 1 at Roosevelt Lake, 2 at Powell, and 6 at Lake Havasu), enforcing the current AIS Interdiction laws (A.R.S. 17-255) and the “pull your boat plug” rule (R12-4-1102). Over 175 warnings were issued for various AIS infractions and a total of 103 citations have been written for failure to pull the boat plug.
- Watercraft Inspection Training and UMPS participation and leadership – Arizona’s AIS Program staff (Specialist/Technicians) has been instrumental in the further development, enhancement, and training for the Pacific States Marine Fisheries Commission (PSFMC) WIT level II classes and the current evaluation and updating of UMPS. Our Program staff has assisted with these classes and trained various state and federal employees on watercraft inspection and decontamination protocols at Lake Mead, Lake Pleasant, Lake Havasu, and Lake Powell. In coordination/cooperation with PSMFC and Dee Davis, our program has provided leadership in the development of these trainings and protocols for all of western North America and actually trained some biologists from British Columbia in Arizona in early summer 2015 in these uniform protocols.

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**California Department of Fish and Wildlife**

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- Maintained Quagga Mussel Program (Lead Agency – Department of Fish and Wildlife). The statewide program continued to work toward prevention, outreach and education, and support water managers implementing containment and prevention programs. In April 2015 the Department of Food and Agriculture’s Border Protection Stations inspected their one millionth

watercraft entering the state. Since January 2007, 1,360 watercraft contaminated with quagga/zebra mussels have been intercepted at the Border Protection Stations.

- Quagga/Zebra Mussel Regulations Effective (Tentatively) October 1, 2015 (Lead Agency – Department of Fish and Wildlife). Fish and Game Code Section 2301 prohibits possession of dead or live dreissenid mussels, grants the Department authority to stop, inspect, and quarantine conveyances, and requires public and private agencies operating mussel-infested water supply facility to control or eradicate the infestation. Fish and Game Code Section 2302 requires managers of uninfested reservoirs to implement prevention programs. Both code sections authorize the Department to assess administrative penalties for violations of these sections. The new regulations establish: a permit to possess dead dreissenid mussels; deadlines and reporting requirements for control plans for infested water supply systems; deadlines and reporting requirements for prevention programs for uninfested reservoirs; a process for quarantining conveyances; and an administrative penalty for violations.
- Implementation of AB 2443: Quagga and Zebra Mussel Infestation Prevention Program (Lead Agency – State Parks, Division of Boating and Waterways). The legislated fees to fund dreissenid mussel prevention efforts throughout the state began to be disbursed in June 2015. A total of \$2.4M was awarded to 15 projects in the 2014/2015 grant cycle. The 2015/2016 grant cycle begins in August/September 2015, and it is estimated \$5M will be available.
- Developed an aquatic plant risk assessments for curlyleaf pond weed (Lead Agency – Department of Fish and Wildlife). The State Parks, Division of Boating and Waterways (DBW) is responsible for managing invasive aquatic plants in the Sacramento-San Joaquin Delta. Per Harbors and Navigation Code §64.5, DBW shall request the Department of Fish and Wildlife (Department) prepare risk assessments for species DBW believes causes or are likely to cause economic, environmental, or harm to human health, and that they desire to manage.

At DBW's request, the Department assessed curlyleaf pondweed (*Potamogeton crispus*; CLP) using the U.S. Aquatic Weed Risk Assessment (USAqWRA) tool, which was modified for the U.S. by Gordon et al. (2012) from the New Zealand Aquatic WRA model (Champion and Clayton 2001). Both tools are modifications of the Australian WRA system, which is widely accepted and applied, but inaccurately classifies nearly all aquatic species as invasive, thus requiring modification for the accurate assessment of aquatic plants (Gordon and Gantz 2011). The Department concluded that CLP should be considered an invasive aquatic plant in California. Four additional aquatic weed risk assessments have been requested by DBW and are in development.

- *Nerodia* Eradication (Lead Agency – Department of Fish and Wildlife). Watersnakes of the genus *Nerodia* are established in three locations in California. *Nerodia* are highly to entirely aquatic, non-venomous snakes that primarily prey upon amphibians and fishes. The establishment and spread of *Nerodia* in California is likely to impact special status species including two species of giant garter snakes.

California's drought has reduced marshland habitat and snakes are highly concentrated in shrinking habitat. Sightings outside known populations suggest the drought may be driving dispersal through adjacent habitat/corridors. As California enters a 4<sup>th</sup> successive year of drought, and water resources continue to diminish, we expect a sharp increase in *Nerodia* dispersal in search of suitable aquatic habitat. In response, the Department is leading a collaborative statewide effort to eradicate *Nerodia* by trapping and removing snakes, beginning with the highest risk population. This effort is anticipated to last several years.

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## **Colorado Parks and Wildlife**

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- Colorado continued their aggressive watercraft inspection and decontamination (WID), training/certification, public education and sampling programs to prevent the spread of zebra or quagga mussels, and other ANS.
  - The state implemented the zebra and quagga mussel risk assessment completed in 2014 which resulted in altering state funding allocations to WID stations based on the highest risk of introduction from recreational watercraft coupled with the most suitable habitat for establishment and invasion of mussels. The state increased WID program funding at 10 reservoirs that were very high or high risk, reduced WID station coverage at 3 low or medium risk reservoirs, and eliminated WID stations at 5 very low or low risk reservoirs.
  - The USFS Region 2 Office greatly reduced funding for ANS this year and the state was forced to absorb the lost cost share dollars at USFS WIDS (operated by private industry contractors). It is unknown at this time if these 8 high risk USFS waters will have WID stations in 2016. At the time of submission, there have been 16 adult mussel boat interceptions in Colorado. The majority are from the Great Lakes and Arizona. It is quite possible that 2015 will be a record breaking year for the most interceptions from our inaugural year in 2008.
- Colorado altered the WID seal receipt program this year by adding a separate blue receipt for waters positive for other ANS (e.g. waterflea, Eurasian watermilfoil or New Zealand mudsnail). Exit inspections are mandatory when inspectors are present. Standing water flushes, if the watercraft can't be drained, prior to re-entry to another water is required.
  - Pueblo is the only water positive for quagga mussel veligers. They used a new receipt that was attached directly to the seal wire in an effort to prevent boaters from losing receipts. The new containment receipt is currently getting mixed reviews and will be discussed for continuation or elimination this winter. High risk inspections are required for exiting watercraft, with standing water flushes if the watercraft can't be drained upon exit or prior to re-entry to another water. Ramps are closed when inspectors are not present.
  - Prevention (or negative) waters continue to use a white receipt. All waters use green seals with a unique serial number and their site name or code on them.
- This year the ANSMobile data collection system was successfully deployed across Colorado and expanded into the states of New Mexico and Utah. This iOS and Android based mobile application utilizes the most current technology to collect inspection & decontamination data at boat ramps across the region. This application serves the dual purpose of providing advanced reporting to site managers and helps inspectors to assess the risk of watercraft entering their waters. Colorado received a QZAP grant to copy the application and website for broader regional implementation in an effort to improve communication among managers regarding watercraft leaving infested waters.
- At the request of the Colorado Fish Health Board, the ANS Program has developed a GIS/Access utility to assist with the habitat suitability analysis for aquatic species. This application will allow the program to identify and prioritize the most highly suitable waters for Aquatic Nuisance Species management. Once finalized, this utility will be distributable to other agencies to assist them in assessing the suitability of the waters under their jurisdiction. This application is currently in the peer review phase. This project was funded through a USFWS Region 6 grant.
- CPW is in the process of updating the ANS regulations. The updated regulations passed the first viewing by the Parks and Wildlife Commission in July and will go for final approval this fall. Per

Building Consensus, the regulations contain the addition that it is the boater's responsibility for keeping their conveyance clean, drain and dry. Additional updates were made to address the merger of Parks and Wildlife into a single agency, update definitions and gain consistency with current WID procedures. The original regulations were adopted in February 2009 and have not been updated since.

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***Hawaii Department of Land and Natural Resources***

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- Increase Capacity-A Aquatic Invasive Species Coordinator and a four person civil service field team was hired to work primarily on AIS issues in state including control, management, monitoring, and rapid response. An AIS legal fellow was hired (Kevin Richardson) who has been working to update Hawaii's ballast water rules and develop hull fouling and in-water cleaning policy. Sonia Gorgula, Hawaii's Ballast Water and Hull Fouling Coordinator moved to a new position in Australia and we've been working to re-fill this position.
  - Minimize further introductions – Vessel biofouling remains the vector responsible for the majority of Hawaii's marine & estuarine bioinvasions. Sonia Gorgula in collaboration with the Smithsonian Ecological Research Center (SERC) completed a biofouling study for Hawaii including data collection and policy recommendations. A second study on in-water cleaning practices in Hawaii is currently underway also in collaboration with SERC. We recently held an in-water cleaning workshop, where we invited stakeholders, scientists, and managers to share information on in-water cleaning and start a working group to move forward on developing in-water cleaning BMP's for Hawaii. AIS coordination Brian Neilson, sits on Hawaii's Board of Agriculture advisory sub-committee to review importation permits of aquatic species. There have been several permit requests of concern including the importation of Barramundi and Nile Tilapia for Aquaculture.
  - AIS Control and Management-The AIS team has been actively managing invasive marine algae through the use of mechanical removal and sea urchin biocontrol. This effort has proven to be effective, showing minimal re-growth after removal. The AIS team has also been working with the Molokai community to map the distribution of invasive algae and develop a control plan.
  - Rapid Response and AIS Monitoring- The AIS team has continued to respond to Japanese tsunami debris landings. Skiffs, heavily biofouled with non-native species continue to wash ashore on all of the main Hawaiian Islands. Boats are scraped clean and specimens are sent-off for analysis. We are in the process of installing panels to monitor the settlement of non-native invertebrates that may have been transported by marine debris.
  - Communication & Coordination-The AIS coordinator is working to build partnerships between the main Hawaiian Islands and become more involved in statewide AIS issues. The AIS team has been providing outreach at state wide events and workshops in order to educate the public on AIS issues in the state.
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**Idaho State Department of Agriculture**

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- **Watercraft Inspection:** Over 45,000 watercraft were inspected at 16 roadside stations from February through August 1<sup>st</sup>, 2015. Stations will continue to operate through September, 2015. Boat ramp watercraft inspection stations were also operated at 8 locations around the state and a roving inspection crew operated at high use boat ramps. Over 450 high risk vessels were identified and hot washed over this time period and 22 Dreissenid mussel fouled vessels were intercepted. Since the program was initiated in 2009, over 290,000 inspections have been conducted and 142 mussel fouled watercraft have been intercepted.
- **Data Collection and Evaluation:** Watercraft inspection data is collected for each vessel that is inspected. Data is collected electronically and uploaded daily. This allows for rapid identification of data issues and allows for quick evaluation of boater movement trends. Up to date watercraft inspection information can be found on the ISDA website: [www.invasivespecies.idaho.gov](http://www.invasivespecies.idaho.gov)
- **Survey and Early Detection:** Over 60 waterbodies were surveyed for AIS in 2015. Waterbodies are surveyed for invasive mussels, clams, snails, fish, crayfish and plants. New detections of flowering rush and Eurasian watermilfoil were observed in 2015. Over 500 plankton tow samples were collected and analyzed for Dreissenid mussel veliger early detection. Increased involvement with survey and sampling by regional partners has helped to improve the sampling coverage around the state. To date, no evidence of Dreissenid adults or veligers has been found in Idaho.
- **Outreach and Education:** In 2015 ISDA attended a number of boating races and events state-wide to promote the Clean Drain Dry message. The program also presented at many workshops and meetings, increasing public knowledge and involvement with AIS awareness and prevention. New Clean Drain Dry stencils were painted at boat ramps around the state and a variety of items were distributed to the public including towels and sponges to help promote invasive species prevention.
- **Idaho Invasive Species Council (IISC):** The IISC provides a forum for information sharing and coordination on invasive species related issues in Idaho. Coordination opportunities that have been expanded due to the IISC efforts include expanded AIS survey, new AIS outreach opportunities, and increased state-wide involvement in AIS efforts. The IISC in 2015 was involved in the review and evaluation of The Idaho Response Plan for Invasive Insect and Disease Tree Pests, The Idaho Invasive Species Strategic Plan, and Idaho Response Plan for Early Detection of Dreissenid Mussels.

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**Kansas Department of Wildlife, Parks, and Tourism**

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- **Commercial bait program-**We continue to monitor all Kansas bait shops for prohibited species, unsecure water sources, and fish diseases. Regulations require that all purchased bait must be accompanied by a detailed receipt.
- **On-going zebra mussel detection and monitoring-**We continue to monitor (Portland samplers

and/or plankton tows) department waters for the presence of zebra mussels.

- Support research-We are supporting multiple research projects on aquatic nuisance species. One project that we just completed focused on the effectiveness of current treatments for killing zebra mussel veligers that may be present during fish transportation. Another recently completed project assessed which early detection method (eDNA, plankton tows, Portland samplers, etc.) was most effective to detect zebra mussels in a river moving downstream of an infested water. A third project assessed food habits of white perch and large predatory fish in reservoirs with white perch.
- Asian carp eDNA sampling-In July 2015, KDWPT worked in conjunction with USFWS staff to collect water samples throughout eastern Kansas. The purpose of this sampling was to detect any bighead or silver carp DNA in the water that may indicate live fish in the system. Areas sampled were not known to have Asian carp present, but had downstream populations or previous, isolated reports. At least 10% positive results in any location would trigger KDWPT sampling in the fall to assess the presence of live fish. Each of the two eDNA sample crews consisted of one boat, two KDWPT staff, and one USFWS staff. Samples were collected under the guidance of the Quality Assurance Project Plan eDNA Monitoring of Bighead and Silver Carps (QAPP 2015). An additional USFWS crew prepared the samples for shipment to and processing by the USFWS Whitney Genetics Lab in LaCrosse, WI. This crew manned a portable trailer with cooled centrifuges to prepare the collected samples. A total of 204 samples were collected from 11 sites across eastern Kansas.
- ANS kiosk pilot program-We designed and created ANS kiosks to expand ANS signage at high-use areas. The kiosks are approximately 7 feet tall and include an attention-getting sign, an informational sign (varying by infested or non-infested), literature holders, and a sign specific to bait disposal. Kiosks were installed by the beginning of May at four waters in Kansas as a pilot program. The four Kansas waters selected for the pilot program incorporate large and small waters and waters that are and are not considered an ANS Designated Water (contains any combination of zebra mussels, white perch, or Asian carp; special regulations apply). Surveys were conducted throughout the season to assess the effectiveness of the pilot program for determination on full implementation throughout Kansas.

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### ***Montana Fish, Wildlife & Parks***

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- Prevention-Watercraft Inspections: The [2014 season](#) ended with 34,000 inspections. FWP operated 17 watercraft inspection crews for the 2015 field season: 7 highway stations on the border, 3 internal highway inspection stations, and 7 crews that operate at boat ramps on popular waterbodies. This is 3 fewer than last year as Alberta is checking traffic in both directions at the border, Idaho has a station in the northwest, essentially duplicating our station, and one is being operated by the Blackfeet Tribe and the Flathead Basin Commission. Final 2015 numbers are not finalized but the total number of inspected boats should be approximately 30,000. Based on stakeholder comments to start our inspection season early, FWP partnered with MT Department of Transportation to install traffic cameras at two existing station sites and one proposed to determine the boat traffic in April. Results will be assessed this fall. We developed an internal data entry system to improve our process and try to address repeat boaters. We purchased 3 variable message signs for 3 border stations with good results, leading to fewer drive-bys. We implemented a [raffle program](#) for each person that stops at an inspection station

and results thus far have been very positive. It also provides us with valuable feedback from boaters through a survey.

Early Detection and Monitoring: Waterbodies surveyed in Montana are prioritized based on: previous years' work, angler/boater pressure, water quality data, risk of introduction, input from partners and agency staff, etc. AIS early detection and monitoring includes: invertebrate and macrophyte sampling, and plankton sampling for veligers (samples processed at the FWP lab in Helena). Priority locations for sampling include the 10 state, 3 federal, and 12 private hatcheries in Montana. We also had one dedicated monitoring crew sampling for and surveying aquatic plants on state waters. In 2014, a total of 187 waterbodies, 456 unique sites and 616 total sites were inspected in Montana. No new populations of AIS were found in 2014 by FWP and none thus far in 2015.

Database: We are currently creating a database to house the monitoring data collected by state agencies and all others to assist in planning and information sharing.

Dreissenid Veliger Lab: Montana's lab is processing the majority of plankton samples for the Missouri River Basin and other states as well. These include Colorado, Iowa, Kansas, , Missouri, Nebraska, New Mexico, North Dakota, South Dakota, Utah, Wyoming, and Montana. The lab processed about 1600 samples in 2014, and has already processed more than 400 this year.

#### [2014 Monitoring Report](#)

- Outreach and Awareness: In an attempt to bolster our outreach efforts to the boating public, we purchased TV, radio and newspaper advertisements emphasizing that motorized and non-motorized boats must stop at inspection stations; it is the law. We incorporated drain into the Inspect. Clean. (Drain).Dry message. The daily hits on the FWP [website](#) increased 3 fold the next day!
- Program Operations: FWP hired a new statewide AIS coordinator in November 2014. The learning curve has been intense, but progress has been made and will continue to improve the program.
- Statewide Issues - Montana Governor Steve Bullock signed an Executive Order forming the state's first invasive species council- Montana Invasive Species Advisory Council. MISACs work plan is to: complete a gap assessment for all invasive species programs, take the results of the assessment to partners, stakeholders and the public at a summit forum to refine found gaps, and use these results to develop a statewide strategic plan for the State of Montana. This will be valuable to the AIS program to provide clear, consistent direction to the program, potentially consolidate and simplify state laws and develop stronger relationships amongst state programs.

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#### ***Nebraska Invasive Species Program***

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- In March 2015 a law was passed creating a formal aquatic invasives species (AIS) prevention program. The program will be funded through a new motorboat registration fee. Residents pay a fee when registering their motorboat. Non-residents will be required to purchase an AIS stamp for their motorboat which is good for one year. These fees will go into effect in early 2016. The prevention program will be run by the Nebraska Game and Parks Commission. The new program will be developed in 2015 and 2016 and a program coordinator will be hired in 2016. The Nebraska Invasive Species Program, which has been conducting AIS boater surveys and providing public outreach on AIS since 2009, will continue its mission. The program coordinator will continue to be a partner of the WRP and other regional invasive panels and boards and continue to provide outreach regarding to AIS.

If you have suggestions on effective methods to let non-residents motorboat owners to know about the new sticker requirement in 2016 please let me know.

- The Nebraska Invasive Species Program employed 7 summer technicians that conducted boater AIS surveys and offered voluntary boat inspections. Over 4,000 surveys were collected between May and August. Technicians used tablets to record data in the field using SnapSurvey software. Results showed that the majority of boaters were employing Clean, Drain and Dry techniques and were not dumping live bait into waterbodies. Results will be studied this fall.
- The Nebraska Game and Parks Commission conducted bait dealer surveys for the first time this summer. They will be analyzing results of the surveys this fall. It is likely surveys of this kind will occur again in the future.
- Veliger samples from all Nebraska waterbodies (except Offutt Air Force Base Lake in Bellevue, NE) have been negative. Lake Zorinsky in Omaha, NE continued to have negative veliger water samples. This will be year 5 of negative veliger results so it will be delisted as a zebra mussel lake.
- The Nebraska Invasive Species Program Coordinator has been collecting lesson plans and teaching tools for K-12 grade teachers and outdoor educators.  
If your state has any lesson plans or teaching tools/props please let me know. I am looking to build traveling trunks with props for educators. I have been working to get bait sized replicas of silver and big head carp and gizzard shad.

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### ***New Mexico Department of Game and Fish***

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- New Mexico Department of Game and Fish (NMDGF) updated several aspects of AIS outreach/education: Updated Department website layout and AIS materials [www.wildlife.state.nm.us/ais](http://www.wildlife.state.nm.us/ais); Created AIS Facebook page to provide updates on AIS news and events [www.facebook.com/aquaticaliens](http://www.facebook.com/aquaticaliens); Created an AIS Alien caricature to use as a brand for the NMDGF AIS Program



Posted new AIS signage at boat ramps which includes the Clean, Drain and Dry message including a QR code directing boaters to a Clean, Drain and Dry instructional video

**Before Launching or Leaving . . .**

**Clean** all mud, plant and animal material from boats, trailers, boots, gear and equipment.

**Drain** all water from bilges, live wells, ballast tanks and the lower units of motors.

**Dry** all parts of watercraft and equipment completely before entering a new body of water.

**Free inspections and decontamination** are available by contacting the New Mexico Department of Game and Fish at **1-888-248-6866**.

**AIS positive water** locations are listed online. [www.wildlife.state.nm.us/ais](http://www.wildlife.state.nm.us/ais).

**Scan this QR Code** to learn how to properly Clean, Drain and Dry.

**STOP** harmful invasive aquatic plants and animals

New Mexico Department of Game and Fish

Created a Clean, Drain and Dry instructional video which can be found on YouTube, website and Facebook page. <https://www.youtube.com/watch?v=t7J-d7Gt7jY>

- New Mexico Department of Game and Fish is working with Bureau of Reclamation to establish a contract with a private company to conduct contracted watercraft inspections. New Mexico Department of Game and Fish is providing expertise for contractor requirements, Level I & II PSMFC WIT training and QA/QC of watercraft inspection stations. When the contract is finalized, inspections at Navajo Reservoir and Elephant Butte Reservoir will occur year round. Current NMDGF watercraft inspectors stationed at Navajo Reservoir will be moved to another waterbody rated high risk for AIS introduction. New Mexico Department of Game and Fish plans to use this agreement as a model for other agencies and NGO's to follow.
- Continued use of the Colorado Parks and Wildlife ANS mobile application and database for watercraft inspection data. In 2014, approximately 12% of watercraft inspections were logged using the mobile application. Limited WiFi at the inspection stations made logging in and out of the mobile application difficult. In 2015, NMDGF provided inspectors with mobile hotspots which has allowed inspectors to use the mobile application consistently. New Mexico Department Game and Fish projects 90% of 2015 watercraft inspections will be logged using the mobile application.
- Provided expertise, guidance, WIT training and outreach materials to the City of Farmington Parks, Recreation and Cultural Affairs Division so Lake Farmington could be re-opened to non-motorized watercraft. Lake Farmington had been closed to watercraft since 2012 due to Aquatic Invasive Species concerns. Though non-motorized watercraft are low risk for carrying zebra and quagga mussels, Farmington City Council members wanted an inspection station to ensure no AIS enters the municipal waterbody. Using NMDGF watercraft inspection protocols, the City of Farmington is now running a watercraft inspection station. New Mexico Department of Game and Fish plans to use this agreement as a model for other agencies and NGO's to follow.
- Conversations with the boating public, general public, marine owners, and transport companies indicate that our education component has been effective. More and more people we have met at various events are aware of the implications of AIS introduction. Examples NMDGF staff have reported: 1) Several boaters having visited Lake Powell contacted NMDGF to perform an inspection and/or decontamination, several of which have delayed their launch by 1 or more days until NMDGF could arrive and look at their watercraft; 2) Anonymous tip of a 75 ft. houseboat that was being transported to Navajo Reservoir from an area that is high risk for having zebra mussels; 3) Numerous conversations with the public applauding our efforts to protect New Mexico waterbodies and encouraging NMDGF expand efforts; 4) Personal conversations with the public in which they restate the Clean, Drain and Dry message; 5) Contacted by out of state marine dealers and transport companies asking what information should be passed on to customers looking to haul a boat to New Mexico.

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***Nevada Department of Wildlife***

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- Statewide Quagga/Zebra Mussel Monitoring: Nevada has continued to receive negative quagga/zebra mussel monitoring results in 2015. After several one-time positive PCR hits in Eastern Nevada during the summer of 2014, NDOW's PCR results have continued to be negative and no veligers utilizing microscopy have been identified. Currently, Nevada does not have any suspect waters for quagga/zebra mussels. The only positive/infested water in Nevada is the Colorado River system that includes both Lakes Mead and Mohave.
- Lake Mead AIS Stations: In January 2014, NDOW, in cooperation with Lake Mead National Recreation Area (LMNRA) and the USFWS, began operation of three free-of-charge decontamination stations within the Nevada border of LMNRA. One decontamination station

is located at Lake Mohave and two stations are located at Lake Mead. In 2014, 254 decontaminations were performed and since the beginning 2015 through August 5, 2015, there have been 194 decontaminations. The time required to perform decontaminations on LMNRA exiting watercrafts averaged 2.5 hours during 2014.

NDOW continues to notify other states via email when a long-term moored watercraft is exiting LMNRA and heading across interstate borders. A majority of the interstate watercrafts being decontaminated are long-term moored watercraft and are headed to the State of California followed by the State of Utah. In addition to providing decontaminations, station staff also provides clean, drain & dry outreach instructions and materials at the marinas and boat ramps.

Note: In 2016, NDOW anticipates moving towards performing exiting watercraft inspection stations at one or more LMNRA boat ramps in addition to performing decontaminations.

- Rovers: NDOW had three seasonal statewide watercraft inspection and decontamination rovers during the 2015 summer season. Due to extreme drought conditions resulting in low water levels, the rovers tended to be more centralized at specific waterbodies rather than continuously traveling to various lakes. One rover was primarily stationed in Southern Nevada along the Colorado River in Laughlin in addition to traveling to several eastern Nevada lakes. The Western Rover was primarily stationed at Topaz Lake, interstate water shared with California, along the eastern Sierra Nevada Mountains and the Eastern Rover was stationed at South Fork Reservoir near Elko, NV. South Fork Reservoir has continued to see an upsurge of boater traffic due to relatively good water levels. Therefore, the South Fork Eastern Region Rover Station opened in April and will cease at the end of October. The rovers focus on inspecting watercraft that are both entering and exiting a specific waterbody, in addition, to performing clean, drain and dry outreach for boaters.
- Other AIS Stations: Four inspection and decontamination stations were operated during the 2015 summer season at Lahontan, Rye Patch and Wildhorse Reservoirs in cooperation with Nevada State Parks. Boater activity was low at the reservoirs due to low water levels with a majority of the boat launches completely out of the water. The stations however, remained opened with limited staff through the summer months.

In 2016, NDOW tentatively has plans to move the Wildhorse Reservoir station to a seasonal mandatory highway station just north of Elko along the Mountain Highway (Hi 225). The station relocation is due to the complexity of having several different launch locations at Wildhorse Reservoir in addition to numerous beach launching sites. Relocation of the station will provide increased protection for Wildhorse Reservoir, other Northern Nevada waterbodies and also assist with protection of neighboring northern states by inspecting watercraft heading north.

- AIS Outreach Efforts: NDOW continues to have AIS billboards at several key locations throughout Nevada. Five seasonal AIS decal requirement billboards and three clean, drain and dry billboards were installed during the summer of 2015 in both Northern and Southern Nevada. In addition to billboards, NDOW staff at all stations provide clean, drain and dry outreach materials and provides instructional directions for the boating public on how to implement the clean, drain and dry methodology. In 2014, over 16,000 individuals associated with various types of watercraft had direct contact with NDOW AIS staff. This is in addition to thousands of individuals contacted by the Nevada State Park inspection/decontamination station staff.
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## **North Dakota Game & Fish Department**

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- Over 400 complete or partial ANS inspections were undertaken on 216 sport fishing waters across the state. Listed ANS encountered during these inspections included common carp (widespread and established at many waters throughout much of ND); curly leaf pondweed (found in portions of the Missouri River System and in 9 district waters in the central and eastern part of ND, including one new infestation at Raleigh Reservoir noted in 2014); silver carp (found only in the James River in ND from the SD border upstream to Jamestown Dam); and zebra mussel in the Red River (the only detection in ND in 2014 was three veligers in the Red River at Wahpeton). Eurasian watermilfoil, the only other listed ANS that has been documented in ND, was last found in the Sheyenne River at Valley City in 2013.
- Efforts to more intensively sample zebra mussel in the Red River continue. Prior to 2015 zebra mussel veligers had been detected only at the mouth of the Ottetail River at Wahpeton; these veligers were assumed to have drifted downstream into the Red River from known and well established populations in the Ottetail River in Minnesota (which converges at Wahpeton with the Bois de Sioux River to form the Red River). Veliger sampling as of July 1, 2015 in both ND and Manitoba portions of the Red River, however, detected several hundred to several thousand veligers at each of several sites. The source of these veligers is unknown, but they're likely to have come from one or more established populations within the Red River downstream from Wahpeton. In early July the first adult zebra mussel ever documented in ND was found attached to the intake at the Fargo Water Treatment Plant. Much more intensive sampling of the Red River is planned for later this year.
- The ND Game and Fish Department's ANS information/education awareness brochure, poster, and sign were completely revised and updated early in 2015. Several thousand brochures have subsequently been printed and distributed at various sport and rec shows, aquatic education events, etc.; approximately 400 posters were printed and sent to all resident bait vendors, US Fish & Wildlife Service offices, numerous hunting, fishing, and tourism related businesses and outlets; and approximately 350 ANS signs were purchased and erected at all public boating access sites across the entire state. An I/E effort with local support groups was renewed in 2015 via an agreement with the Friends of Lake Sakakawea and others to implement a multi-media ANS awareness campaign.
- Efforts to monitor the population status of silver carp in the James River continue. Since moving upstream in the James River from South Dakota in 2011, the presence of silver carp in the James in ND has been annually documented. Age and growth work on captured fish indicates that all were 2009 year class fish; females were first noted as being reproductively mature, and were likely to have spawned, in 2014. No juvenile fish were sampled in the fall of 2014, however. Additional focused sampling is occurring in 2015; only three adult silver carp have been collected as of July 1, 2015 (including a gravid male and female pair).
- Efforts to prevent the movement of common carp into the Devils Lake basin and ultimately Devils Lake have intensified in recent months. Easements to allow a constructed berm to remain in place and thus to prevent the movement of common carp across a very flat divide between the Red River/Devils Lake watersheds near Loma will soon expire and are in the process of being renewed, and discussion continue regarding the need and approval to construct a similar berm in another watershed divide in the upper watersheds between Rock Lake and Devils Lake. Common

carp have never been found in Devils Lake, nor have they ever been found in ND in the Souris River or any of its tributaries or in the Sheyenne River upstream of Ashtabula Dam.

- More info can be found at the NDG&F web site: <http://gf.nd.gov/ans>
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No report.

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- For the 2015 season we open two stations in March one on I-5 north bound in Ashland and the other on I-84 west bound in Ontario. The Ontario station intercepted five boats with zebra/Quagga mussel before our traditional opening of stations in May. As of the date of this report the inspection stations have conducted 8,769 inspections, intercepted nine boats for Quagga/zebra mussels, two boats for false Conrad mussel and 181 boats for other types of AIS mainly plant material.
  - Aquatic Invasive Species boat permit sales in Oregon have been the highest on record since the permits became required for boaters starting in 2010. Lots of non-motorized boaters are now taking advantage of the on-line purchasing option and the majority of boat rental businesses are now in compliance with the permit requirements. Additionally, registered motorboat numbers have increased compared to the past several years. Law enforcement activity for permit compliance is keeping up with an average summer activity level and so hopefully the increased permit sales to non-motorized boaters is a result of education and outreach efforts and on-the-water permit enforcement activity.
  - The Chinese mystery snail experimental eradication project that was started almost six ago was finished this year by draining the remaining pond. In the original project, copper sulfate was used at 2 ppm which drastically reduced the population but did not eradicate the population. A second application of 5 ppm again drastically reduced the population but did not eradicate the population. In 2014 we draining the upper pond and let it set all summer. In 2015, no snails were observed in the upper pond so we believe they were eradicated. In July of this year we drained the second (lower) pond and we would expect the same results.
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No Report.

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- Monitored (TPWD and partners) 37 water bodies for early detection of zebra mussels with plankton samples, settlement samplers, and DNA analysis.
- Treated over 3,000 acres of giant salvinia with herbicide (April-July 2015).
- Stocked over 62,000 giant salvinia weevils (April-July 2015).
- Received increased funding. Overall freshwater Aquatic Invasive Species budget rose from \$1.4 million in FY 2015 to \$3.9 million in FY 2016 (all funding sources including federal, state, and local contributions).
- Five new AIS positions were authorized by the Texas Legislature.

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### ***Utah Division of Wildlife Resources***

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- Expanded Lake Powell Operations: In 2015, Utah Division of Wildlife has been able to expand containment operations at Lake Powell due to funding received from QZAP funding and through legislative appropriations. Currently we have two permanent, full time personnel at Lake Powell to oversee our crews and approximately 25 technicians inspecting and decontaminating boats before they leave the vicinity of Lake Powell. Boat bow numbers are entered into the COlordao ANS Mobile application database, boats are tagged with seal to the trailer and owners are given a receipt to validate the seal to help identify all boats leaving Lake Powell.
- NPS MOU: In order to fully operate containment at Lake Powell it has been necessary to develop a precedent setting Memorandum of Understanding between National Park Service and Utah Division of Wildlife Resources to capitalize and strengths and abilities of each. NPS does not have the ability to enforce state AIS laws the way the State of Utah would like to have them administered but has space and equipment for decontamination and inspection operations and are expert in the flow of visitation on the park. They have the ability to stop boaters and educate them regarding quagga mussel containment. UDWR on the other hand has the ability to hire a large number of technicians to interdict boats and has authority for Utah Law Enforcement. A well crafted MOU defining how space, equipment, and technicians are to be used between the agencies has enabled both to work together to capitalize on each agencies strengths and ensure that quagga mussels do not leave Lake Powell for other reservoirs.
- Boat Fee: The Utah Legislature passed a provision in boating law requiring all boaters to pay a \$10 fee into a restricted account for the sole purpose of aquatic invasive species management in the State of Utah. This fund should generate between \$650,000 and \$750,000 each year to help bolster AIS prevention and containment efforts in Utah. The bulk of the funding will be used to contain mussels at Lake Powell. UDWR will be seeking reciprocity agreements for AIS Decals with its surrounding states as a result of the fees.
- Permanent Decontamination Facilities: The Utah AIS Program has secured a contract with HydroEngineering to build several permanent decontamination facilities in the state over the next five years. Through federal boating access funds the Utah AIS program has been able to

harness nearly \$1.2 million to build permanent decontamination facilities at Willard Bay, Jordanelle Reservoir, Utah Lake, and Deer Creek Reservoir before the end of the 2015 calendar year. More are planned at high traffic locations throughout the state in the coming years.

- Roadside inspection stations continue to expand: The Utah AIS program has toyed around with the idea of roadside inspections for a couple of years but the operations have significantly expanded in 2015. The I-15 Port of Entry operation ran from late April through October in 2014 and has expanded by a month in the spring and the fall and is open seven days a week in 2015 during daylight hours. We are also running inspection stations for boaters entering the Bear Lake Valley and have increased compliance with Utah Laws significantly. We have also developed a new roadside location for boaters going to Strawberry Reservoir that has increased boater compliance with Utah AIS laws from less than 50% to greater than 90%. With the success in increased compliance with Utah laws we will continue to evaluate locations for roadside inspections at other locations. Law Enforcement presence has been key to making compliance at the stations a success and has been a key partnership in Utah.

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### ***Washington Department of Fish and Wildlife***

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- A one-time funding of \$300,000 through the 2015 Legislature was provided to further reduce the greatest risks from invasive species and for an interagency agreement with the Washington Invasive Species Council for development of recommendations for long-term funding of the program through a stakeholder process.
- WDFW was awarded a \$25,000 grant from Pacific States Marine Fisheries Commission for nighttime watercraft inspections. The nighttime inspections are to determine if watercraft transportation is occurring at an increased rate. Inspection stations in bordering states are typically open from 0700-1900 hours and are not year around. Nighttime inspections will be focused on Port of Entries with the highest volume of watercraft traffic in the state, I-5 Ridgefield, I-90 Spokane, and HWY 395 Plymouth. The nighttime inspections will be operated by WDFW Fish and Wildlife Officers and AIS Unit staff from 2200 – 0600 hours.
- WDFW was awarded a one-year \$120,000 grant for Japan Tsunami Marine Debris (JTMD) response and monitoring for 2015. The funding created a dedicated position within WDFW as the lead State Marine Debris Response Plan responder through December 2015. The funding has enabled WDFW to conduct dozens of rapids response, surveys, and outreach/education events. One of the most interesting and important rapid response was a 30 foot JTMD boat found on the Long Beach Peninsula. The boat had a large variety of non-native coastal species including blue mussels, pink barnacles, oysters, scallops, amphipods, caprilids, hydroids, algae, and shipworms.
- New Zealand mudsnails (NZMS) were detected at WDFW Ringold Fish Hatchery on the Hanford Reach of the Columbia River in August 2014. The hatchery distributes rainbow trout, tiger muskie, and channel catfish throughout Washington water bodies. An agency Infested Site Management Plan was developed and continues to be implemented to prevent further spread including decontamination protocols for fish and equipment.
- WDFW finished the procurement of rapid response equipment and establishment of a permanent decontamination site at a WDFW's facility. WDFW purchased a 150 foot long by 15 foot deep turbidly curtain to be used as an in-water zebra/quagga mussel rapid response containment tool. WDFW also constructed a permanent decontamination site that includes hot-water pressure washer, water supply, canopy, and waste water collection pit. The site is ideal to decontaminate

zebra/quagga mussel infested watercraft and available to all WDFW staff to decontaminate their equipment.

- WDFW's Ballast Water Management Program continues with daily risk management and boarding of vessels to assess compliance. Work on an automated vessel reporting data entry system has been successful and the new system is being implemented with excellent results. A final version to iron-out remaining bugs will be finished soon. Internal penalty protocols were finalized last year and since then we've successfully cited three vessels for unlawful discharge of ballast water totaling over \$22,000 in fines.
- The state's first established population of African clawed frogs was discovered in storm ponds near Olympia, Washington. WDFW is currently developing and implementing an Infested Site Management Plan in coordination with the landowner and associated stakeholders. Surveys are being conducted in surrounding areas to determine whether species are isolated to ponds or if already spread to outlying areas. Intent is to attempt an eradication.

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### ***Wyoming Game and Fish Department***

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- Outreach- In 2014, a boater appreciation raffle was conducted with the goals of thanking boaters for cooperation with watercraft inspections, increasing compliance with watercraft stopping at check stations by incentivizing the inspections, and gathering information from boaters about the inspection process. Raffle cards were handed out at check stations at the completion of an inspection. The raffle concluded in the end of November, 2014. There were a total of 4,175 entries in the raffle survey. The overall experience by boaters at watercraft check stations was positive with 92.5% indicating they were either very satisfied (75.3%) or satisfied (17.2%). Satisfaction with the timeliness of inspections was also high, with 92.3% of boaters very satisfied (77.7%) or satisfied (14.6%) with the amount of time required for inspection. Lastly, boaters rated the professionalism of inspectors high with 94.9% of boaters very satisfied (77.7%) or satisfied (14.6%). The majority of boaters (80.5%) responding to the survey had purchased a 2014 AIS decal. Raffle respondents were mostly Wyoming residents (52.3%), followed by residents of Utah (19.5%), Colorado (16.5%), Montana (4.0%), and Idaho (2.1%). Boaters who responded to the raffle survey were from 36 different states.
- Watercraft Inspections - Through July 2015, over 24,500 inspections have been conducted at border locations, major waters, Department offices, and private inspection locations. Of these, 1,873 were high risk inspections and 704 resulted in decontamination. Three of the watercraft contained dead invasive mussels.
- Monitoring- Seventy-six (76) waters were surveyed for aquatic invasive species during 2014. These waters are currently being sampled in 2015. All samples to date have been negative for larval zebra/quagga mussels. Waters with existing populations of AIS including curly pondweed (*Potamogeton crispus*), New Zealand mudsnails (*Potamopyrgus antipodarum*), rusty crayfish (*Orconectes rusticus*), and Asian clam (*Corbicula fluminea*) were further monitored to determine the extent of the populations. New Zealand mudsnails were found in the first new water in Wyoming in over a decade, Lake Cameahwait near Riverton. A new population of curly pondweed was sampled in the Shoshone River in 2014. No new populations of rusty crayfish or Asian clam were found in 2014.
- More information can be found at [wgfd.wyo.gov/AIS](http://wgfd.wyo.gov/AIS).

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### **U.S. TERRITORIAL GOVERNMENT MEMBER**

No report.

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## CANADIAN PROVINCIAL GOVERNMENTS

### *Alberta Environment and Sustainable Resource Development*

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- Policy & Legislation: The provincial Fisheries (Alberta) Act was amended in March 2015 that allowed for mandatory watercraft inspections, enhanced authorities for preventing and managing AIS, and created a list of 52 prohibited species, including aquatic invasive plants, invertebrates and fish. Federally, AIS Regulations have been passed and are currently being implemented that make Dreissenid mussels and Asian carp illegal to import into Canada (and possess or transport). This should provide for more assistance at the US/CA border. In addition, the provincial Ministers of Environment have been delegated with the authority to deposit deleterious substance (e.g. pesticides) for the control of AIS without federal approval. We are the first province to exercise this authority, addressing a recent detection of black bullheads (a prohibited species) in a contained pond in the northern part of the province.
- Monitoring: 66 lakes and reservoirs are being monitored for both kinds of Dreissenid mussels and spiny waterflea this season. All samples thus far are negative. While we don't have comprehensive AIS monitoring yet, we are continuing the 2<sup>nd</sup> year of an aquatic invasive plant monitoring pilot project. For the future we would like to build a multi-taxa monitoring system that includes all aquatic invasive plants, invertebrates & fish.
- Education & outreach: The Clean Drain Dry campaign continues, this year hitting mainstream television with PSA-style ads (<http://www.letsgooutdoors.ca/television-programming/2015-television-radio-digital/item/120-keep-the-zebras-out-of-your-boat>) as well as longer vignettes (<http://www.letsgooutdoors.ca/television-programming/2015-television-radio-digital/item/129-three-simple-steps-boat-owners-can-take-to-combat-invasive-species>). The focus has shifted from personal action (e.g. three easy steps) to also include an emphasis on mandatory inspections ("It's the Law!") in an effort to raise compliance at inspection stations. This summer we have also launched a new campaign targeting all non-boat sources of introduction, "Don't Let it Loose."
- Inspections: Alberta is in its first season of mandatory watercraft inspections (2013 and 2014 were voluntary). We have completed 14,700 inspections at time of this writing, and project to have completed over 16,000 inspections by end of season. The season began mid March at the US / Canada border station to target snowbird traffic. In March / April we also contracted Working Dogs for Conservation to assist at this station with their trained mussel detecting canines for expected high traffic volumes. On May 15<sup>th</sup> 12 additional inspection stations were deployed for a total of 13 stations. The focus of our inspections stations is at the major points of entry into the province, at Commercial Vehicle Weigh stations, with the addition of 4 roving crews at boat launches and one federal inspection station at Waterton Lakes national Park. We have intercepted 8 boats with suspected Dreissenids this season and follow the PSMFC standards and protocols for inspections and decontamination. Most of these mussel fouled boats were coming from Ontario. We are operational until end of September for our highest risk stations on the eastern border. In June, Alberta also introduced mussel detecting canines as a permanent part of its program with 3 dog handler teams inspecting at the high risk stations. Working Dogs for Conservation provided the contract to source dogs and select handlers, and training was provided by California Department of Fish and Wildlife. The Government of Alberta working dog teams will be a permanent part of the watercraft inspection stations going forward into the future.
- Response: The Alberta Dreissenid Mussel Response Plan is close to sharing for feedback – the structure is similar to those of other Western jurisdictions, and mostly lays out roles and

responsibilities, required approvals and contacts, etc. The gap is that there are no products registered for open water control of mussels in Canada at this time. Alberta Environment and Parks is working on a project to partner with a third party research entity to begin conducting the research that would be required for an open water registration of potassium chloride (potash). If this moves forward, the entire west could benefit from the data obtained; there is a reciprocal agreement between EPA and Canada's Pesticide Management Regulatory Agency so it should be relatively straightforward to move forward with registration in both countries if we are successful. Finally, we are responding to AIS including Black bullhead (see above in Policy & Legislation), flowering rush, Prussian carp and domestic goldfish (mostly in urban stormwater ponds).

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***British Columbia Ministry of Environment***

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No Report.

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***Manitoba Conservation and Water Stewardship***

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No Report.

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***Saskatchewan***

No report.

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**MEXICO STATE OR AT LARGE MEMBER**

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No report.

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**TRIBAL/FIRST NATIONS REGIONS**

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***Alaskan Natives***

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No report.

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***Columbia River Basin Treaty Tribes***

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No Report.

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**Confederates Salish, Pend d'Orielle and Kootenai Tribes of the Flathead Nation**

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No Report.

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**Native American Fish and Wildlife Society**

No report.

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**OTHER INTERESTS – APPOINTING ORGANIZATIONS**

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**Pacific States Marine Fisheries Commission**

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- Watercraft Inspection Training (WIT): PSMFC contractor D Davis continued to lead Level Two watercraft inspection trainings in Fall 2014 and Spring 2015. Level Two training, delivered over two days at Lake Mead, is intensive and designed for professionals in all fields that expect to be actively involved in the inspection and decontamination of trailered watercraft and those who wish to become trainers within their state or work group. This project is funded by USFWS and BPA. <http://www.aquaticnuisance.org/wit> . Besides training at Lake Mead, additional remote trainings by D were also carried out in Arizona (Lake Pleasant and Lake Havasu, with Kami Silverwood/Tom McMahon, AZDGF), Utah (Salt lake City with Jordan Neilson, UTDWR {This was a WIT III}), Lake Powell (with GCNRA, UTDNR AZGF) and Lake Piru, CA. Quagga D and Stephen also worked with the WRP's WI committee on developing new trainers and student manuals for WIT courses.
  - UMPS III: The next version of Uniform Minimum Protocols and Standards for Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States (UMPS III) will be ready for further review @ the 2015 WRP meeting week. ISAN (Leah) has been under contract for the past several months and has lead the rewrite with assistance from the WRP's Watercraft Inspection and Decontamination Committee.
  - Outreach and Education: Produced and distributed "AIS News" ~ bi-weekly e-newsletter; continued to upgrade and add information to the new PSMFC website <http://www.westernais.org/> ; reprinted and distributed "Western States Rack Card"; "Don't Move a Mussel 2011" "On the Lookout", and "Zap the Zebra Brochures"; "Clean Drain Dry" towels, and other ANS materials to ANS coordinators and others throughout the region. Attended sport/commercial fishing shows with AIS booth in Seattle, Boise, Portland and Sacramento (with CDFW).
  - Coordination/Other: We hosted meetings of the Pacific Ballast Water Group (<http://www.psmfc.org/ballast/> ) in April in Seattle, WA, hosted WRP Coastal Committee meeting (Seattle, April) and Columbia River Basin Team of the 100th Meridian Initiative in October and May (<http://www.100thmeridian.org> ); PSMFC/USGS has a dreissenid monitoring database for the CRB that can be found at <http://crbans.psmfc.org/monitoring/aquatic-animals.html>. USGS took the lead in 2014 collecting monitoring data, 2015 proposed monitoring sites has been posted at <http://crbais.psmfc.org/monitoring/monitoring-for-aquatic-animals> ; Continued coordination and meeting with (with L. DeBruyckere, lead) Federal Rapid Response Working Group – dreissenids; continued to maintain West911 "hotline" listserve and website.
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***Puget Sound Partnership***

TBD

No report.

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***San Francisco Estuary Partnership***

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No report.

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***Sea Grant - Oregon and WA***

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- Washington Sea Grant in partnership with UW School of Fisheries and supported by WDFW and funding from the US EPA have laid the groundwork for reestablishing an early detection program for European green crab in Washington's inland waters. The program focuses on pocket estuary habitats and on the species utilizing habitats that would likely be most impacted by green crab.
- A volunteer red swamp crayfish control project coordinated by the Olden Lab at the UW has resulted in the removal of more than 6000 red swamp crayfish over three years. The ratios of native to invasive crayfish in the lake have not shifted as of the beginning of this collection season. Hopefully 2015 will be the year, but the warm conditions favor red swamp.  
<http://depts.washington.edu/oldenlab/pine-lake/>
- Work with Carolina Biological in developing alternatives for classrooms to the release of organisms used in schools that can become invasive. <http://www.carolina.com/teacher-resources/Interactive/summer-break-class-pets/tr10783.tr>
- 2015 Edition. A Field Guide to Invasive Tunicates of the Pacific Northwest.  
<http://seagrant.oregonstate.edu/sgpubs/invasive-tunicates-pacific-northwest>
- 2015 Edition. Japanese Tsunami Marine Debris: Key Aquatic Invasive Species Watch  
<http://seagrant.oregonstate.edu/sgpubs/japanese-tsunami-marine-debris-key-aquatic-invasive-species-watch>
- Oregon Sea Grant continues in its capacity as a co-lead/ PI on the "Building Consensus in the West to Prevent the Movement of Invasive Mussels from Watercraft".
- Species associated with the 2011 Japan earthquake and tsunami continue to be found on marine debris beaching on the west coast. 300+ species have now been intercepted as arriving alive on JTMD in North America and Hawaii -- and the debris is still circulating and landing, and as we enter Year 5, still with species that departed Japan in 2011. Work with Japanese researchers who have been tracking transponders for marine debris drift indicate that marine debris which serves as potential platforms for vectoring species across the Pacific drift off the continental shelf for extended periods. Of significance are two captures of the striped beakfish (*Oplegnathus fasciatus*) off the Oregon Coast earlier this spring and a video sighting in Monterey Bay. One fish was found in a crab pot by fisherman in Port Orford, OR and another was found off Newport, OR in a ship wreck that was towed into Yaquina Bay. Striped beakfish had not been reported in the eastern Pacific until a fishing boat washed out by the 2011 Japan tsunami beached onto Longbeach, WA in 2013.

- A primary aim of a year-long outreach project conducted by the University of Hawaii Sea Grant College Program in 2015 was to reduce human exposure to Rat Lungworm Disease thought to be increasing in frequency and severity (including death) via transmission by the invasive semi-slug, *Parmarion martensi*. Awarded \$150,000 by the USDA, Hawaii Sea Grant conducted outreach on best practices associated with rainwater catchment for potable use in rural areas of Hawaii Island. Semi-slugs are commonly found in and around improperly sealed or managed rainwater catchment tanks and are known to harbor high loads of the parasitic (nematode) worm that causes Rat Lungworm Disease.
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### ***Tahoe Regional Planning Agency***

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- The Tahoe Regional planning Agency (TRPA) sought membership to become ex-officio members of the ANS Task Force and received approval. A formal invitation is pending White House vetting. TRPA is excited by this opportunity to broaden our partnerships nationally, and also add another voice to AIS concerns for the west.
  - The Lake Tahoe AIS Program along with partners from the University of Nevada- Reno developed a control Implementation Plan and an associated action list that provides a strategic guide on where, when and how to address existing AIS populations in Lake Tahoe, by prioritizing areas based on the type and number of species present, environmental conditions, known effective techniques, previous effort, and visitation by boats.
  - TRPA recently obtained long term stable funding from the States of California and Nevada to ensure the continuation of the boat inspection program. The state's funding will complement the fees paid for by boaters.
  - TRPA has been active with efforts to strengthen partnerships between AIS managers and the boat industry. TRPA presented and participated in the first "AIS Summit" in January in Las Vegas organized by the American Boat and Yacht Council and the US Fish and Wildlife Service. TRPA and others will also be representing AIS managers nationally at the upcoming International Boat Builders Exposition in September in Louisville, KY.
  - The Lake Tahoe Restoration Act has been introduced in Congress, which seeks to authorize funding for critical Environmental Improvement Programs for Lake Tahoe, AIS being one such program. If authorized, the Act would provide for \$45 million dollars over 10 years for AIS efforts in Lake Tahoe.
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### ***Western Association of Fish and Wildlife Agencies***

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No Report.

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## Western Aquatic Plant Management Society (WAPMS)

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- The Western Aquatic Plant Management Society (WAPMS) is the western chapter of the [Aquatic Plant Management Society](#) – an international organization. The geographic region of WAPMS includes the states of: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Oregon, Nevada, New Mexico, Montana, Utah, Washington, and Wyoming. WAPMS produces a bi-annual newsletter, holds an annual conference, and maintains a membership list. Members also receive *Aquatics Magazine*.
- Annual WAPMS meeting. The WAPMS held the 2015 annual meeting in Portland, OR with over 100 attendees. Presentations included an overview of USDA-ARS programs in the west (Dr. John Madsen, Dr. Paul Pratt) with an emphasis on Integrated Pest management (IPM) approaches to aquatic plant control. There has been increased discussions on including other aquatic invasive species (e.g., zebra/quagga mussels, NZ mudsnails) as part of the WAPMS (and national APMS) conferences.
- Emerging and expanding plant problems. WAPMS is active in sponsoring workshops and disseminating information about emerging issues in the West. Examples are: Flowering rush (*Butomus umbellatus*), South American spongeplant (*Limnobium laevigatum*), water primrose (*Ludwigia grandiflora* ssp. *hexapetala*), common reed (*Phragmites australis*), hydrilla (*Hydrilla verticillata*), hybrid milfoils (e.g., *Myriophyllum spicatum* x *M. sibiricum*), and yellow floating-heart (*Nymphoides peltata*).



Flowering rush  
(photo: T. Moorhouse)



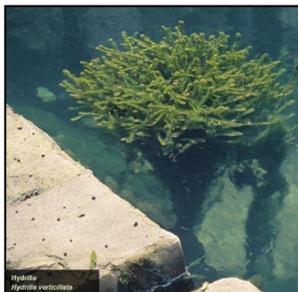
South American spongeplant  
(photo: CDFA)



Water primrose  
(photo: imcwma.org)



Common reed (photo:UC-Davis)



Hydrilla (photo: V. Ramey)



Yellow floating-heart (photo: UC-Davis)

- WAPMS encourages all WRP members to participate in the society. WAPMS is active on social media – Like us on Facebook! For more information, visit our website at [www.wapms.org](http://www.wapms.org)
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## OTHER INTERESTS - INDIVIDUAL

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### **Academia Coastal**

#### ***Portland State University***

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- Research on the efficacy of anti fouling coatings under Columbia River conditions. We are nearing the end of a three-year study of three antifouling coatings. Concrete and steel panels with the coatings were positioned in the Columbia River for varying lengths of time. The panels were periodically removed and examined for physical abrasion and wear then deployed in San Justo Reservoir to determine their efficacy at preventing mussel attachment. The final set of panels was pulled from the Columbia River in July and will be deployed in San Justo in April 2016. The final report on the project will be completed in the fall of 2016.
  - Research on modeling dreissenid mussel veliger distribution in reservoirs. We collected detailed data on the distribution of mussel veligers in San Justo Reservoir. Although we don't have funding for the modeling effort at the moment, our intention is to use the distribution data to formulate a submodel in CE Qual w2 water quality and hydrodynamic model authored by Dr. Scott Wells.
  - Aquatic weed surveys. With funding from the Oregon Department of Agriculture we conducted aquatic plant surveys in the Columbia River. We discovered two new species for Oregon: *Butomus umbellatus* and *Bacopa rotundifolia*. *B. umbellatus* is widespread in the upper Columbia basin and in the Yakima River. Our find was the first in Oregon. It stimulated a rapid response exercise that turned out to be anything but rapid due to multiple permits required for work in the Columbia River. Additional surveys are being conducted in 2015 and additional *B. umbellatus* has been discovered. Suction assisted plant removal is planned for September, although new discoveries of the plant may require a new approach.  
The *B. rotundifolia* is the find was the first in Washington or Oregon. The plant has an interesting distribution, with plants in Wyoming considered introduced in the 80s and herbarium specimens from MT in the 1891. It was first collected in Idaho in Boise in 1994. It is considered imperiled in MT and critically imperiled in ID. It is not clear whether the plant is native west of the Rocky Mountains. The plant is invasive in rice fields, so a determination needs to be made about whether the Columbia River population needs to be treated as invasive.
  - As chair of the Oregon Invasive Species Council I initiated an external review of Council structure and operations. The review included interviews with the Governor's office and the directors of natural resource agencies. The review revealed areas where Council operations and effectiveness could be improved and stimulated increased interest in the Council from the Governor's office.
  - Our veliger identification lab processed dreissenid veliger samples from throughout the Pacific Northwest and provided expert consultation to other labs.
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**Academia - Inland*****The University of Texas at Arlington***

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- My laboratory continues to monitor the population and reproductive dynamics of zebra mussels infesting three Texas water bodies: Lake Texoma, Lake Ray Roberts and Lake Belton. Mussel population dynamics and reproductive dynamics vary among the three water bodies and are substantially different from those reported for zebra mussels in northeastern US and European water bodies due the elevated ambient water temperatures characteristic of Texas aquatic habitats.
- Published a chapter describing the results of a dreissenid mussel risk assessment and monitoring program for Texas water bodies in a treatise entitled *The Biology and Management of Invasive Quagga and Zebra Mussels in the Western United States*, WH Wong and SL Gerstenberger (eds.), CRC Press, 2015.  
Continue to serve as a member of the Gulf and South Atlantic Regional Panel on Aquatic Nuisance Species.
- Working with an engineering firm to develop a manual on zebra mussel monitoring and control in raw water intake structures and conduits for Dallas Water Utilities.

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**Aquaculture - Costal*****Pacific Coast Shellfish Growers Association***

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No report.

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**Aquaculture - Inland**

TBD

No report.

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**Conservation NGO - Coastal**

TBD

No report.

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**Conservation NGO - Inland*****Invasive Species Action Network***

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- Supporting the development of a Greater Yellowstone Area (GYA) AIS collaborative management effort -The participants in the GYA effort include three states, two national parks, 4 national forests, 2 national wildlife refuges and numerous local government and NGO partners.  
Collectively they recognize the need for coordinated management and ISAN is helping to facilitate

the development of this effort. We have completed recreational boating management assessments for Yellowstone Park and the Greater Yellowstone Region. In 2014 we facilitated a workshop to aid the development of a rapid response plan for the GYA. We are currently addressing the needs identified during the workshop and plan to conduct a rapid response exercise in 2016.

- Lower Colorado River Non-motorized boater outreach - Quagga mussels have become established in the Colorado River below the Glen Canyon Dam. This section of the river contains a world famous trout fishing section and an even more famous whitewater river (the Grand Canyon). Boaters on both of these sections have historically not been considered to resent a high risk for spreading mussels but, with the establishment of mussels in the river, they now present a significant risk for spread. We are working to develop a coordinated outreach effort to better educate whitewater enthusiasts and trout anglers to the new risks they represent.
- Watercraft Inspection Station Evaluations - We provide a “mystery shopper” service in which we pose as recreational boaters in order to assess the performance of watercraft inspectors. We have developed protocols for evaluating inspection stations and work closely with managers to tailor our evaluations to best serve their needs. This program is very well received by the states and entities we work with and our efforts have allowed watercraft inspection programs to make significant improvements.
- Youth Education – Youth education is an important activity for ISAN. We provide a wide variety of youth education experiences both in and outside of the classroom. We have a host of AIS presentations that are tailored for any audience from K – 12. During the 2014 – 2015 school year we conducted more than 350 youth programs that reached more than 9,000 students. Recognizing the need for new AIS educational activities for very young students we have developed new kindergarten programs, including a great sing-along activity.
- Forest Pest Outreach – Although not an AIS problem, ISAN’s expertise at developing programs that reach target audiences to change behavior has been utilized to develop a unique outreach program that uses fly tying to teach people to identify forest pest insects. This project uses fly tiers who tie flies at public venues which attracts public attention and engages the public in discussion about the forest pest issue. The activity of the fly tiers really attracts attention and engages the audience in conversation and learning. The program has been growing rapidly as forest pest programs across the country seek to incorporate public outreach. In the past year our fly tiers have been featured across the country including at the Smithsonian Natural History Museum as part of National Invasive Species Awareness week.



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### **Regional Power Council**

TBD

No report.

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### **Regional Water Council**

TBD

No report.

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### **Aquatic Pet Industry**

TBD

No report.

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**Aquatic Plant Industry**  
**Crop Production Services**

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No report.

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**Recreational Boating**  
**Recreational Boaters Association of Washington**

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No report.

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**Legal/Law Enforcement**  
**National Sea Grant Law Center**

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- To assist state natural resource managers and policy-makers in identifying commonalities, differences, and gaps among states, the National Sea Grant Law Center undertook a review of each state's watercraft inspection and decontamination laws and regulations to see how each state's program compared to the authorities set forth in the model legislation released in February 2014. This companion report, released in October 2014, contains an executive summary that discusses the NSGLC findings for all 50 states and detailed state-by-state comparisons for the sixteen states with WID programs. The comparison report is available at <http://nsglc.olemiss.edu/projects/model-legal-framework/files/state-comparison.pdf>.
- The NSGLC presented an overview of the work of the Building Consensus committee, specifically the release of the model legislation, at Weeds Across Borders in Ottawa, Canada in October 2014 and the ANS Task Force Meeting in Falls Church, Virginia in November 2014.
- Organized and hosted, with Priya Nanjappa with the Association of Fish and Wildlife Agencies, a kick-off meeting for the development of model regulations for WID programs. 30 individuals from around the country participated in the meeting held in Las Vegas, Nevada on January 29, 2015.
- Drafted a law review article entitled "Working Together to Combat Invasive Species Threats: Strategies for Facilitating Cooperation between the National Park Service and States" for an upcoming special issue of the *Natural Resources Journal* for the 50th Anniversary of the National Park Service. The article is currently in press and scheduled to be published in the Winter 2016 issue early next year.
- Worked with Western State AIS Coordinators to develop a policy framework for an ideal regional WID program. Through a series of conference calls held in July, the NSGLC and AFWA facilitated discussions about how state inspection programs should be implemented to best enable regional coordination. The policy framework is scheduled to be finalized in September and will form the foundation for the model regulations to be drafted later this year.

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## **At Large – Coastal**

### ***Marine Invasive Species Program (MISP), California State Lands Commission***

Name: Nicole Dobroski

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- 2015 Biennial Report - A mandated programmatic report to the California Legislature on MISP activities from July 2012 through June 2014. The report identified management gaps and next steps for preventing the introduction of NIS from the shipping industry's ballast water and biofouling ANS vectors.
- Vessel Vector Information - Between July 1, 2014, and June 30, 2015, there were 9133 qualifying vessel (>300 gross registered tons) arrivals at California ports. 2354 vessels (=25.8% of all arrivals) were inspected for compliance with the Marine Invasive Species Act. Statutory mandate is "at least 25%." 47 violations were detected during vessel inspections – 15 administrative (recordkeeping/reporting) and 31 operational (illegal exchange or no exchange).
- Regulations - Developed draft regulations that would establish enforcement procedures and fines associated with non-compliance with relevant California law. Rulemaking will start in late-2015. Developed draft regulations for the management of biofouling on vessels operating in California waters. This rulemaking is currently underway. The proposed rule would establish requirements for a biofouling management plan, record keeping and reporting, and inspection or cleaning of high risk vessels (vessels that remain in a port, place, or shared waters for extended periods of time).
- Contracted Research - Testing of a portable ballast water treatment unit; Studying the feasibility of shore-based ballast water treatment as an option for vessels to comply with the California ballast water discharge standards; Studying the copper tolerance of marine biofouling species; Studying techniques to detect viruses in ballast water.

### **Marine Invasive Species Program of the California Dept. of Fish and Wildlife (CDFW) Update**

- Monitoring - The Smithsonian Environmental Research Center (SERC) and the Moss Landing Marine Laboratories (MLML) continue to intensively sample ten California estuaries. Genetic tools (i.e., DNA metabarcoding) characterize species composition of whole samples collected from planktonic and hard- and soft substrate communities. No new non-native species have been detected in the estuaries examined thus far. The results of Phase I of this multi-year survey will be available shortly.
  - Database - California Non-native Estuarine and Marine Organisms (CalNEMO) database, was launched in July. It is a revised and expanded version of the California Aquatic Non-Native Organism Database (CANOD) and is a portal to the National Exotic Marine and Estuarine Species Information System (NEMESIS) database. <http://invasions.si.edu/nemesis/calnemo/intro.html>
  - Partnerships - CDFW and the San Jose State University Research Foundation entered into an MOU allowing Dr. Jonathan Geller (MLML Molecular Ecology Laboratory) to use CDFW-owned DNA analysis equipment to process samples from extramural sources. The MOU is a unique opportunity for species identification and expansion of barcode databases for groups such as the Japan Tsunami Marine Debris Taxonomic Assessment Team.
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**At Large - Inland**

***Idaho Coop fish and Wildlife Research Unit***

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No report.

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