

Member Update Reports for the Western Regional on ANS
Annual Meeting
October 19-20, Jackson, WY
2016

U.S. FEDERAL AGENCIES

U.S. Army Corp of Engineers

No report.

USDA- APHIS

No report.

USDA – Forest Service

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REGION 1 (MT, n. ID)

- Flathead NF (MT) did 3,000 acres of lake trout suppression plus a few hundred acres of chemical treatment in the South Fork Flathead to restore Westslope Cutthroat Trout. The Forest also contributes funds to the Flathead Basin Commission, which runs several inspection stations. The commission operates the Highway 2 station on the Blackfeet Reservation, where 40 percent of MT's contaminated boats were intercepted this year.
- Lolo NF (MT) contributed to inspection/wash stations in the Clearwater Basin, including FS boat launches on 8 lakes.

REGION 3 (AZ, NM)

- Several forests in NM and AZ have active projects for removing nonnative fish and frogs from sensitive reaches that contain T&E species. There are also volunteer groups working to remove crayfish in areas with Gila topminnow and desert pupfish.
- Tonto NF has an active public education program for quagga mussels, "Don't move a mussel", and AGFD and Reclamation operate and monitor boat wash stations and reservoirs on the lower Salt River Project, including Saguaro Lake which was recently invaded by quaggas.

REGION 4 (UT, NV, s. ID, w. WY)

- Since 2009, the Regional Office has funded 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. To date, there are no known occurrences of invasive mussels in any Regional USFS waterbody. In 2016, the Region approved funding \$400,000 to cover our three state partners for the next 3 years, through 2019.
- The interagency '*Guide to Preventing Aquatic Invasive Species (AIS) Transport by Wildland Fire Operations*' is in review at the National Wildfire Coordinating Group and should be in place by fire season 2017. The guidebook will be national, not regional, in scope and should provide consistency across agencies as well as sound science.

- 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)

REGION 6 (Oregon & Washington)

- Fire: The Regional Fisheries and Fire Programs collaborated to produce region wide interagency AIS management guidelines that were implemented during the 2016 fire season. The intent of the guidelines is to address the threat of the spread of AIS through fire management activities.
- Law Enforcement: The Regional Fisheries and Law Enforcement Programs collaborated to activate 2 Code of Federal Regulations that prohibit the transport of AIS across USFS lands. We also trained the LEOs in AIS identification and inspection techniques for boats and trailers.

Management: We utilized the regional dive team for manual removal of Eurasian Water Milfoil from the outlet of Coldwater Lake on Gifford Pinchot NF and conducted AIS surveys on the Umpqua River and Willamette Drainage.

U.S. Environmental Protection Agency

No Report

USDOC – NOAA

National Marine Fisheries Service-Alaska Region

No Report

USDOC – NOAA

Monterey Bay National Marine Sanctuary

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- Activity: *Undaria* removal in Monterey harbor. Volunteer divers from the Sierra Club assisted with a survey of Monterey Harbor to determine the extent of the invasive kelp *Undaria pinnatifida* in September 2015. *Undaria* was found in several locations and removed.
 - Activity: A NOAA Hollings Scholar was at MBNMS for 10 weeks in June-July 2016 to conduct an experiment on different removal methods on the invasive kelp *Undaria pinnatifida*. Report is being written by the undergraduate scholar.
 - Activity: Discharge permit holders are being updated on the recently updated rule regarding introduction of non-native species in sanctuary receiving waters.
 - Activity: Staff continues to work with scientists from Smithsonian on invasive species surveys in kelp forests within MBNMS and written report. See:
http://sanctuarysimon.org/projects/project_info.php?projectID=100419&site=true
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USDOHS – U.S. Coast Guard

No Report.

Bureau of Land Management

No report.

Bureau of Reclamation

No report

National Park Service

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- Funded / conducted quagga / zebra mussel programs at ten 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, Yellowstone NP)
 - Met with Western Association of Fish and Wildlife Agencies Invasive Species Committee and several western states to improve NPS / State coordination on management of AIS on trailered boats.
 - Reactivated a committee to evaluate existing National Park Service regulations and make recommendations on service-wide AIS
 - Initiated process for OMB approval of participation in regional data-sharing for trailered boats
 - Cooperated with Arizona Department of Game and Fish and federal partners in an EDRR effort for green sunfish in the Colorado River downstream of Glen Canyon Dam
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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

- **ANSTF Executive Secretary** - Dr. Susan Pasko joined the USFWS late last year as the new Executive Secretary of the ANS Task Force. Dr. Pasko previously worked at NOAA Fisheries Headquarters in Silver Spring, Maryland as the Aquatic Invasive Species Coordinator, where she focused on internal communication and coordination to ensure NOAA was actively engaged and effectively responding to the threat of invasive species. Susan holds a doctorate degree in Aquatic Ecology from Kent State University and a Bachelor of Science in Marine Science from The Richard Stockton College of New Jersey. Her graduate work was focused on invasive species science, including developing several research projects to identify the characteristics of aquatic habitats that may render them vulnerable to biological invasion.
- **ANSTF Update**
 - The Spring Aquatic Nuisance Species Task Force (ANSTF) meeting was held May 4-6, 2016 in Traverse City, Michigan. The meeting was hosted by the Great Lakes Panel; accordingly, the meeting included several presentations that highlighted AIS efforts in the region, predominantly projects accomplished as a result of the Great Lakes Restoration Initiative funding. Other items on the agenda included a focus session on interbasin transfer of AIS, a presentation on genetic engineering applications, and updates on the Technical Information

Report on Boat Design and Construction as well as the Federal Policy Options to Addressing the Movement of AIS onto and off of Federal Lands and Waters. Decisional items from the members included approval of the revised New York State ANS Management Plan and recommendation of two new ex-officio members to the ANSTF (National Marine Manufacturers Association and National Aquaculture Association). Actions items from the meeting include implementing a tracking system to collect ANSTF accomplishments as they relate to the Strategic Plan, exploring options for a workshop on gene-drive technologies, assisting completion of the Federal Policy Options Implementation Table, and developing a follow-up discussion on AIS interbasin transfer and control technologies for the fall meeting.

- The fall 2016 meeting of the ANSTF is scheduled for November 8-10, 2016 in Falls Church, Virginia. The agenda is under development; however, requested presentations from the previous meeting include an update from the Arctic Council on invasive species issues, a discussion with the American Waterways Operators on AIS prevention and control, and a presentation on recent developments of ballast water control technologies. The meeting will also review the input received from the ANSTF Activity Reporting Form, which is expected to lead into strategic conversations regarding how to better collaborate efforts and how this information should be reflected in the next revision of the ANS Strategic Plan.

- **State/Interstate Aquatic Nuisance Species (ANS) Management Plan Grant Program** FAC received \$2 million for the State/Interstate ANS Management Plan Grant Program. The Notice of Funding Opportunity was posted on March 8th and closed on May 8th. 41 of the 42 eligible plans applied for funding this year (Idaho did not apply) and each plan received approximately \$48,000 for the implementation of their plans. Headquarters is now finished with stage one of the grant process. Stage two of the process, which consists of the hosting entities for each plan working with their appropriate FWS Regional Office's AIS coordinator and the grant management staff to complete the necessary grant application documents is underway.
- **Stop Aquatic Hitchhikers! (SAH!)** - This campaign is essential to federal, state and local efforts, directed at preventing the spread of AIS by empowering outdoor recreation users to become part of the solution through environmentally responsible behaviors, such as Clean.Drain.Dry. After the new website and multi-initiative brand standards are finished, we are hoping to re-launch the campaign sometime later in 2016. The ANSTF Communication, Education, and Outreach (CEO) committee has been engaged in the development of the revised website for the SAH! Campaign. Now that the homepage and site map are near final, the committee will start to develop content for the site. As the website is intended to serve as a call for action, the content will focus on highlighting AIS of concern, building community capacity, and emphasizing the proven success of the campaign. The site will also contain key resources of the ANS Task Force and its partners.
- **Habitattitude** - Under a DOI and PIJAC MOU, the Branches of Communications and Partnerships and Aquatic Invasive Species are working with the pet industry and a website designer to update and modernize the <http://www.habitattitude.net/>. 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 in the website redesign dealing with aquatics, water gardens, reptiles/amphibians, and educators. We anticipate that the website will go live later this year.
- **Multi-species proposed rule** - On October 30, 2015, BAIS published the "11 species" proposed rule for public comment and peer review in the *Federal Register*. The rule proposes to list 10 freshwater fish (Amur sleeper, crucian carp, Eurasian minnow, European perch, Nile perch, Prussian carp, roach, stone moroko, wels catfish, and zander) and 1 crayfish (yabby) as injurious species. The 60-day public comment period ended on December 29, and the Service received 20 comments. The Service's Midwest Regional Office coordinated the peer review, which was done concurrently with

the public comment period. 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 (zander in Spiritwood Lake, North Dakota), are not currently found in U.S. ecosystems. We used Ecological Risk Screening Summaries to obtain climate-matching and other information. This is the first rule we have proposed since we signed a Memorandum of Understanding with Pet Industry Joint Advisory Council (PIJAC) and Association of Fish and Wildlife Agencies (AFWA) in 2013, which outlines an agreement regarding the voluntary refrain from importation of species not yet in trade in the United States. We reviewed the peer and public comments and expect to publish a final rule in September 2016.

- ***Salamander Chytrid Fungus*** - On January 12, the Service published an interim rule in the Federal Register to list 201 species of salamanders as injurious because they pose a serious threat to native salamanders as carriers of the lethal fungus *Batrachochytrium salamandrivorans* (Bsal). The Service did not publish a proposed rule due to the imminent nature of the threat. The interim rule took effect January 28. The listing applies to both live and dead specimens. The rule prohibits the importation and interstate transport of the listed species without an approved permit for scientific, educational, medical, and zoological purposes. Peer review and public comments were accepted for 60 days after the interim rule was published. Response to the publication of the rule was largely positive with significant media coverage in outlets such as the New York Times. We are evaluating peer review and public comments as we prepare a final rule.

Region 1 (HI, ID, OR, WA) – Judy Gordon, Judith_Gordon@fws.gov

- The Region developed and signed a policy on “Minimizing the Introduction of Invasive Species by Service Activities.” This new policy will ensure that the Region acts cohesively to minimize the spread of invasive species, while providing flexibility for practical and effective tactics.
- The Washington Fish and Wildlife Office engaged in outreach activities at the Seattle Boat Show, participated in the Science Olympiad Regional Tournament, and continued to work closely with the Washington Invasive Species Council. 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, we distributed ANS information at the Seattle Boat Show 2016. The focus of the outreach activity is invasive species prevention.
- The Oregon Fish and Wildlife Office continued to serve on the Oregon Invasive Species Council and is assisting in drafting a new OISC strategic plan.
- The Pacific Islands Fish and Wildlife Office continues to work with the State and partners to identify and strengthen biosecurity actions within the State of Hawaii and Pacific Island Region. We continue to attend meetings such as the Hawaii Invasive Species Council and the Hawaii Alien Aquatic Organism Task Force. Internally, we’ve assisted in the development of the FWS R1 Invasive Species Policy. We have been identifying and providing technical assistance in research that can help with Early Detection efforts for AIS, such as an NSF grant looking at ship borne AIS introductions in Pacific Ports thru eDNA (sampling both Honolulu, HI and Apra Harbor, Guam to be included in the study).

Region 2 (AZ, NM, OK, TX) – David Britton, david_britton@fws.gov

- Region 2 awarded nine QZAP grants. Seven of these have been finalized. Two others are awaiting processing of applicants in ASAP. The awardees include the following.
 - “Increased capacity to perform essential functions of the Department’s AIS Program concerning quagga abatement in Central & Northern Arizona - Arizona Game and Fish
 - “Implementation of the Utah Aquatic Invasive Species Management Plan through Containment of Quagga Mussels to the Lower Colorado River Drainage and Lake Powell” - Utah Department of Wildlife Resources

- “Lake Mead AIS Watercraft Inspection, Decontamination, Outreach; Inspections and Outreach for Vegas Area Watercraft Auction Houses and Nevada’s AIS Management Plan” - Nevada Department of Wildlife
 - “Building K9 Capacity for Mussel Detection and Containment Across Jurisdictions” - Working Dogs for Conservation (Montana/Texas)
 - “Aquatic Invasive Specie Program, Lower Colorado River” - Lake Havasu Marina Association (Arizona)
 - “Non-motorized Boater AIS Outreach” - Invasive Species Action Network (Montana)
 - “Regional AIS Data Sharing System for Watercraft Inspection and Decontamination (WID) Stations: Maintenance, User Support and Further System Development “ - Colorado Parks and Wildlife
 - “Lake County Watershed Protection District Mussel Containment through Knowledge of Boat Movement and Reciprocity of a Prevention Program” - Lake County Watershed Protection District (California)*
 - “Lake Piru Quagga Mussel Containment Program” - United Water Conservation District (California)*
 - *The last two are the ones awaiting ASAP approval.
- The Colorado River AIS Task Force is looking to hold a meeting in December in Yuma, Arizona.
 - The Interagency Giant Salvinia Task Force is looking to hold a meeting near Shreveport, Louisiana in January.

Region 6 (CO, KS, MT, ND, NE, SD, UT, WY) – Joanne Grady, 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 Jackson, contributing to Federal Lands Management committee and working with FWS HQ and ABYC boat design partnership.
- Serve as FWS Member and on ExCom.
- 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

- Assisted Law Enforcement on a preliminary risk assessment for aquatic invasive species at the Alcan border; no invasive species were observed and many incoming boats are being checked in Canada and in border states.
- Ongoing efforts to eradicate Elodea spp. in three Anchorage lakes are going well and one new treatment began in Alexander Lake in 2016. Region 7 is working with and funding the Alaska Department of Natural Resources in these efforts.

Region 8 (CA, NV)– Ron Smith, ronald_smith@fws.gov

- In October of 2015, a banded watersnake (Nerodia fasciata) was found near waterways of the Colorado River in the area of the California and Arizona border northeast of Yuma AZ. Region 8 AISP assisted in coordination of survey activities in the area of the recent watersnake incident. USGS lead survey efforts with FWS Imperial National Wildlife Refuge staff, and other state and federal agencies in the spring of 2016 confirming the existence a population of the watersnake and not just a single individual.
- Funded by the Service, investigators from the University of California at Davis developed DNA markers specific for N. fasciata and N. sipedon and conducted an occupancy survey study using eDNA to determine the presence or absence of watersnakes from suitable wetland habitat in the

Central Valley. The field work occurred during years of 2014-2015, with data analysis and preparation of final report to follow in early 2017.

U.S. Geological Survey

No Report

CANADIAN FEDERAL MEMBER

No report.

MEXICAN FEDERAL MEMBER

No report.

U.S. STATE GOVERNMENT AGENCIES

Alaska Department of Fish and Game

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- In June 2016, ADF&G began the second phase of a four-year project to eradicate northern pike from the Soldotna Creek drainage on the Kenai Peninsula and restore native fish populations. This was a huge undertaking and employed the first aerial rotenone treatments in the state. Prior to the treatment, 76,000 native fish, including 28,000 salmonids, were captured from the treatment area and held in nearby pike-free lakes. Sevena Lake was gillnetted under the ice, and invertebrate surveys were conducted throughout the treatment area. Stormy Lake was monitored to assess native fish recovery post- rotenone treatment in 2012.

Otter Lake and Otter Creek on Joint Base Elmendorf-Richardson, north of Anchorage, was treated with rotenone in fall 2015 as a joint project between ADF&G and the military. In March, zero pike were captured when under ice netting of these waterbodies occurred.

In the Matanuska-Susitna Valley, annual efforts to suppress northern pike in the Alexander Creek drainage continued with the goal of native salmonid population recovery. Fyke nets were monitored in Alexander Lake to look for outmigration of pike into Alexander Creek. Sixty side-channel sloughs were gillnetted in May; 2,108 pike were removed and dissected to identify stomach contents. Additional gillnetting efforts took place in the Deshka River where 130 pike were removed, as well as Indian and Moose creeks where 170 pike were captured. Department staff conducted minnow trap surveys during the gillnetting efforts and conducted aerial index surveys of Chinook salmon in these drainages to evaluate project goals and objectives.

Finally, a new project began that will include collection of preliminary data and assess pike distribution from the Cottonwood Creek Drainage to determine if future pike eradication is feasible.

- At the 2015 WRP annual meeting a brief update was provided describing the methods applied by ADF&G, SERC and BLM during proof-of-concept trials and experimental tests of biocide treatments to cause mortality of the invasive colonial tunicate *Didemnum vexillum* (D. vexillum). SERC will present results and conclusions of this project at the 2016 annual meeting of WRP, along with their assessment of the feasibility of bay-wide eradication.

To move forward with the objective of removing *D. vexillum* from Whiting Harbor, Sitka, these partners have been funded to scale-up the in situ experimental mortality treatment.

ADF&G and SERC completed a dive survey of Whiting Harbor to delimit the distribution of *D. vexillum* within the harbor. Results have not yet been analyzed.

- Elodea spp. was detected in Fairbanks, Alaska in 2010. Records of the aquatic plant were known from Cordova but not elsewhere in the state. Since then, Anchorage and Matanuska-Susitna Valley and the Kenai Peninsula waterbodies were found to have populations of the common aquarium plant. In total, Elodea spp. was detected in 22 waterbodies statewide, including Lake Hood- one of the busiest floatplane lakes in the country. As of October 2016, nine waterbodies have been treated with diquat and/or fluridone to eradicate the invasive macrophyte. USFWS and partners eradicated Elodea spp. from three lakes on the Kenai Peninsula, AK Department of Natural Resources (ADNR) and partners (including USFWS and ADF&G) treated four waterbodies in the Anchorage area, and US Forest Service, ADNR and partners treated small waterbodies in Cordova. Planning for treatment of the Chena Slough, Chena Lake and Chena River has been slow; however, treatment is expected to take place in 2017.
 - During the spring of 2016, ADF&G joined the USFWS at the Alcan border to gain an understanding of the risk posed by recreational watercraft entering the state at one entry point. During a ten day operation, the border was staffed for 12 hours, during which 93 watercraft were detained and inspected after entering the state. No dreissenid mussels or other organisms were detected. 13 boats were known to be from infested states, several of the boats had previously been inspected in western states or British Columbia, Canada.
 - Cooperation among state, federal, tribal, university and local agencies and organizations has continued during the previous year. Partnerships have allowed aquatic invasive species surveys to be completed, AIS eradication planning and project implementation to occur, and new collaborative efforts have developed. Partners have worked together to increase outreach efforts and signage installments, develop an invasive species reporting tool, investigate options for developing a methodology to list AIS infested waters as impaired, and expand citizen monitoring for coastal areas and into freshwater systems.
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Arizona Game and Fish Department

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- AIS Program Vision (2016-2025) – This finalized and approved document provides guidance/vision for future objectives/strategies/funding sources that will work in concert with the State of Arizona AIS Management Plan of 2012 for the next ten years.
- Expanded AIS Program Staffing Capabilities – Arizona’s AIS Program now includes; one (1) Program Coordinator; two (2) Program Specialist; two (2) Program Technicians; and three (3) 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. The cost for the 2016 Media Plan was \$218,000, an increase of over 50%, as compared to the 2014 Media Plan. The AZGF AIS Program has contracted private expert media companies to determine if the current branding is reaching the public sufficiently and is determining if a new “rebrand” for the future (2017) would be beneficial to the AIS Program.
- In December 2015, conclusive PCR and microscopy evidence of quagga mussels was discovered at Canyon, Saguaro and Apache lakes, major recreational waters on the Tonto National Forest (USDA-Forest Service). In early 2016, dive surveys at Canyon Lake confirmed the presence of a limited population of adult quagga mussels near the Marina. Effective May 1, the Arizona Game and Fish Department listed those aforementioned lakes as AIS-affected waters under AIS Directors Orders #2. Currently eight of the 12 major reservoirs in Arizona (Powell, Mead, Mojave, Havasu, Apache, Canyon, Saguaro and Pleasant) are listed as quagga-affected waters.
- As of May 1, 2016, new language to our Director’s Orders were published. The new language includes; additions to Director’s Orders 2 (listed AIS AZ lakes) to include the three newly discovered evidence of quagga mussels (Canyon, Saguaro and Apache lakes located in the Tonto NF) and a change of verbiage to the State’s ‘pull the plug’ law in Director’s Orders 3.

The new language for a Day User (5 days or less) has changed to read: “Upon removing a watercraft from any listed waters in Arizona and prior to transport: Remove all drainage plug(s) (when so equipped) and drain the water from the bilge, live-well and any other compartments that may hold water. Drain water from engine, engine compartments, and engine cooling systems.”

The new language for a Long-Term moored user (6 days or more) has changed to read: “prior to transport from that AIS listed water (unless otherwise authorized by the State): Remove all drainage plug(s) (when so equipped) and drain the water from the bilge, live-well, and any other compartments that may hold water. Drain water from engine, engine compartments, and engine cooling systems.”

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 through interdiction of watercraft and outreach and education, and by providing support to responsible parties implementing containment efforts at infested waters, and prevention efforts at uninfested waters. From September 1, 2015 - August 31, 2016, 118 watercraft were quarantined and 11 were denied entry at the California Department of Food and Agriculture's Border Protection Stations due to presence of quagga/zebra mussels.

- Quagga/Zebra Mussel Regulations

Internal procedures were developed to implement new regulations that:

- permit possession of dead dreissenid mussels;
- define deadlines and reporting requirements for control plans for water supply systems infested with dreissenid mussels;
- define deadlines and reporting requirements for prevention programs for uninfested reservoirs open to the public;
- set a process for quarantining conveyances when the Department, or other state agencies acting on its behalf, determines the conveyance has the potential to spread dreissenid mussels; and
- define procedures and an appeal process for imposing an administrative penalty for violations of Fish and Game Code, sections 2301 and 2302 and the proposed regulations or related orders.

- Implementation of AB 2443: Quagga and Zebra Mussel Infestation Prevention Program (Lead Agency State Parks, Division of Boating and Waterways)

The legislated "mussel infestation prevention program" awarded funds to local, state, and federal agencies for dreissenid mussel prevention efforts throughout the state. A total of \$4,682,832 was awarded to 19 projects (13 projects received their full request, 6 projects received funds for portions of their request). The next grant cycle is anticipated to begin in January 2017.

- Developed aquatic plant risk assessments for Eurasian watermilfoil (*Myriophyllum spicatum*), waterprimrose (*Ludwigia* spp.), and coontail (*Ceratophyllum demersum*) (Lead Agency – Department of Fish and Wildlife)

DFW assesses aquatic plants 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 Weed Risk Assessment model (Champion and Clayton 2001). Both tools are modifications of the Australian Weed Risk Assessment, 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 USAqWRA has been tested for accuracy and validated under the environmental conditions of the U.S. and is the only assessment tool developed for the U.S. which maximizes accuracy for aquatic plants and incorporates all of the factors outlined in the mandate.

DFW conducted an exhaustive search of peer-reviewed journals and government publications for these species to accurately complete the assessments. The resulting evaluations are available upon request.

- **Nerodia eradication (Lead Agency – Department of Fish and Wildlife)**
The establishment and spread of *Nerodia* in California is of particular concern given their proximity to and inherent ecological overlap with a number of special status species. Given their similar niches and predicted overlap in distribution *Nerodia* spp. are expected to directly compete with and potential displace the already imperiled giant garter snake and San Francisco garter snake populations.

In 2015, the Invasive Species Program began a collaborative effort to eradicate the currently isolated populations of *N. sipedon* and *N. fasciata* before dispersal and range expansion result in impacts to California's special status species. In 2015, 53 snakes were removed and in 2016, 41 have been removed. Trapping and removal will continue in 2017.

Colorado Parks and Wildlife

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- A recent Colorado Supreme Court decision related to severance taxes has significantly reduced funding available for the ANS program. Colorado Parks and Wildlife (CPW) is no longer collecting income from the ANS Act, and does not expect to receive any more severance tax. CPW is actively assessing various potential long term funding options for the program, including an ANS annual sticker for boaters, directing a portion of a potential fishing license increase to the ANS program, increased support for the program from other sources, and a reduction in the scope of the program. CPW is encouraging all partners, including several federal and local governments, to contribute to the ANS Program. The Colorado Marine Dealers Association has recently made a donation to support inspection and decontamination stations. A decision on how the program will proceed in 2017 and future years has not yet been determined.
- Per Building Consensus guidelines, CPW will de-list Pueblo Reservoir for Quagga Mussels in January 2017. There has not been a verified detection at Pueblo since 2011. CPW performs plankton tows, substrate checks, shoreline surveys and SCUBA diver monitoring routinely based on water temperatures from April-November each year at Pueblo Reservoir. This is the only water body currently positive, and therefore Colorado will be a NEGATIVE state for zebra and quagga mussels in 2017! CPW credits their aggressive mandatory inspection and decontamination program, along with education efforts, which have stopped the continued inoculation of our waters with mussels.
- CPW completed modifications on their mobile app and website for watercraft inspection and decontamination (WID) stations and launched the new Regional WID Data Collection System this summer. A Quagga Zebra Action Plan (QZAP) grant from USFWS helped to fund modifications to the system which created administrative features to allow states, provinces, parks and special districts to personalize the application to fit their procedures. QZAP is also supporting one year of operating, maintenance and help desk costs so the system can remain free to users for the 2017 boating season. The workflow is based on Uniform Minimum Protocols and Standards (UMPS) and the Watercraft Inspection Training (WIT) Procedures. It is

truly a collaborative product from Western Invasive Species Coordinating Effort (WISCE) discussions and collaboration among the Building Consensus participants. The States of Nevada, New Mexico and Utah, and Lake Tahoe, are currently using the system with Colorado.

- CPW is proposing new ANS regulations to de-list *Daphnia lumholtzi* from both wildlife prohibited aquatic species list and the prohibited ANS list. The non-native waterflea has recently been found in most reservoirs East of the Continental Divide and at Navajo Reservoir. It does not appear to be having an impact on the fisheries; and is not capable of having an impact on economics or recreation. De-listing will alleviate the need for mandatory exit inspections at positive waters to contain the waterflea, as well as eliminate the need for decontamination when coming from a positive to negative water.

CPW is also proposing new ANS regulations requiring boat operators to pull the plug and remove vegetation from watercraft and trailers, including overland transport, per the WAFWA resolution.

- CPW continued their aggressive mandatory education, inspection, decontamination, sampling and monitoring programs with statistics expected to be similar to past years.

The Invasive Species Program launched a new website this year (<http://cpw.state.co.us/aboutus/Pages/Invasive-Species-Program.aspx>).

The ANS Laboratory has moved from CPW's Aquatic Animal Health Lab to the ANS Program office at the above address in Denver.

Hawaii Department of Land and Natural Resources

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- **Increase Capacity:** We hired Julie Kuo as the new Ballast Water and Hull Fouling coordinator for the State of Hawaii DLNR. We also hired two additional technicians to conduct invasive algae control and monitoring. The State of Hawaii now has a 10-person AIS team. The State Legislature recently approved a position for an additional civil service AIS Program Specialist. We hope to fill this position in the next 1-2 years.
- **Minimize further introductions:** The State of Hawaii recently completed a State Biosecurity Plan. This plan addresses a wide range of invasive species threats including AIS. Vessel biofouling remains the primary vector for Hawaii's marine & estuarine bioinvasions. We are currently working to develop State rules to regulate ship hull fouling and in-water hull cleaning. Ballast water discharge is another source of introduced species in Hawaii, and Julie Kuo has been working to update Hawaii's current Ballast Water regulations and work with policy makers to suggest changes to the Vessel Incident Discharge Act. In addition, AIS coordinator Brian Neilson, sits on Hawaii's Board of Agriculture advisory sub-committee to review importation permits of aquatic species. There has been consistent pressure by the aquaculture community to import pure strains of tilapia to Hawaii, which has a number of invasive life history traits.

- **AIS Control and Management:** The AIS team has been actively managing invasive marine algae through the use of mechanical removal and sea urchin biocontrol. Our sea urchin biocontrol hatchery has produced over 300,000 urchins to date. This effort has proven to be effective, showing minimal re-growth after removal on reefs initially treated four years ago. 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 and other debris heavily biofouled with non-native species continue to wash ashore on all of the main Hawaiian Islands. Over 200 suspected items have been recovered to date. Boats are scraped clean and specimens are sent-off for analysis. Over 79 non-native species have been removed from tsunami debris. We have just completed monitoring surveys to identify any newly established non-native fouling species in harbors throughout Oahu. In addition, we completed an aerial imagery survey for marine debris throughout the state. Although over 20,000 marine debris items were identified, very few were confirmed or suspected JTMD. We recently responded to a report of *Salvinia molesta* occurring on the Island of Kauai. We are currently assessing the distribution and extent of the invasive plant and evaluating control measures.
 - **Communication & Coordination** The AIS coordinator is working to build partnerships among managers and community groups throughout 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. In addition, we've developed partnerships and collaborations with researchers and managers throughout the world.
-

Idaho State Department of Agriculture

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- **Watercraft Inspection:** Over 83,500 watercraft were inspected at 16 roadside stations from February through September 11th, 2016. This is a 23% increase over inspections conducted in 2015, partially due to expanded hours of operation to cover all daylight hours. Two roving inspection crews also operated at boating events and high use boat ramps state-wide this year. Over 1,000 high risk vessels were hot washed this year and 18 vessels were found with Dreissenid mussels. Since the program was initiated in 2009, over 394,000 inspections have been conducted and 163 mussel fouled watercraft intercepted.
- **Law Enforcement Support:** County law enforcement around the state stepped up their efforts to support compliance at watercraft inspection stations. Deputies periodically set up at inspection stations and brought back all vessels that failed to stop. This led to improved compliance at inspection stations state-wide.
- **Survey and Early Detection:** Over 60 waterbodies were surveyed for AIS in 2016. Surveys include the search for invasive mussels, clams, snails, fish, crayfish and plants. Over 600 plankton tow samples were collected and analyzed for Dreissenid mussel veliger early detection. To date, no evidence of Dreissenid adults or veligers has been found in Idaho.
- **AIS Outreach:** An AIS outreach campaign took the Clean Drain Dry (CDD) message to radio and online audiences. New promotional items were also distributed at events and inspection stations and ISDA staff inspected watercraft at a number of boating races and events state-wide and promoted CDD. In cooperation with Idaho Department of Parks and Recreation, CDD materials were distributed to all Idaho registered boaters with registration renewal. Staff also presented at many workshops and meetings, increasing public knowledge and awareness on AIS prevention.

- **Data:** 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
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Kansas Department of Wildlife, Parks, and Tourism

No Report

Montana Fish, Wildlife & Parks

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- Created administrative rules (adopted May 2016) that address three topic areas:
 - Mandatory to remove all aquatic vegetation from boat, trailer and gear.
 - Mandatory to remove all drain plugs prior to exiting a waterway.
 - Expanded our existing authorities defining that decontamination includes dry time, and as part of that the agency has the ability to lock boats to trailers to facilitate the dry time.
- Adopted the message CLEAN.DRAIN.DRY to replace INSPECT.CLEAN.DRY. The outreach materials and signage has not been developed yet, but are currently working on several items including brochures, bumper stickers, etc.
- Began the process of getting a staff person trained on microscopy to increase the capacity of our MT AIS Lab. The capability of the lab operated by one person was not sufficient to deal with all the samples received, so we decided to redirect some resources to accommodate more samples. We are also planning on restructuring the program in general to prevent back logs from occurring.
- Built on relationships with partners across the state. Ongoing relationships with Montana Department of Transportation improved in terms of inspection station operation, locations and coordination. We started having conversations with our National Park partners to gain understanding of each other's programs and how to better coordinate. Productive conversations regarding collaboration continued to occur with the Flathead Basin Commission.
- Our Watercraft Inspection Program has made some great strides this last year, starting with having better and more support from our agency as well as from our enforcement program. Previously, AIS was not within the column of "normal duties" for our wardens. That changed this year and has paid dividends with better support at our stations, ultimately decreasing drive-bys and increasing compliance. We conducted a raffle as part of the inspection program, where each boater that gets inspected receives a raffle ticket to be entered into a random drawing. We received 60 donations totaling \$8,400 in value.

<http://fwp.mt.gov/fishAndWildlife/species/ais/>

Nebraska Invasive Species Program

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- The Nebraska Game and Parks Commission employed 6 summer technicians and the Nebraska

Invasive Species Program employed 2 technicians to conduct boater surveys and offer voluntary boat inspections at high risk waters throughout the state

- Conducted over 4,800 boater surveys, which included information on where boaters last launched, when last launched, where will likely launch next and when, measured whether or not people are following AIS prevention behaviors, gathered information bait usage, gaged knowledge of zebra mussels.
 - Found adult zebra mussels at boat launches along the MO River and communicated information to other states promptly.
 - Worked with SD to put up signage along the MO River and conduct outreach in the Lewis and Clark and MO River boat launches
 - Nebraska Game and Parks Commission began a new AIS prevention program in Jan. 2016 by collecting a resident motorboat registration fee (\$5 fee added to the 3 year registration fee) and non-resident annual sticker fee (\$15) to fund the program. The program employed 6 technicians in 2016.
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New Mexico Department of Game and Fish

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- Presented AIS rule changes to State Game Commission for approval (adopted Jan 2016):
 - Require all watercraft to stop at WID station when established
 - Require all out of state watercraft to receive a watercraft inspection prior to launch in a New Mexico waterbody
 - Require 14 day advanced notice of arrival for watercraft 26 ft. or longer that are being transported into the State of New Mexico
 - Implementation of a voluntary wire seal program for watercraft exiting a New Mexico waterbody and receiving a Clean, Drain and Dry exit inspection
 - Require watercraft owners to “pull the plug” or other barrier that prevents drainage of water while transporting on a New Mexico roadway
- Provided guidance to the Bureau of Reclamation in the creation of a contract for a private company to conduct watercraft inspections and decontaminations at Navajo Reservoir and Elephant Butte Reservoir. Pyramid Enterprises, Inc. began operations at Navajo Reservoir and Elephant Butte Reservoir in May 2016. Over the course of 5 years, the \$1.4 million contract will allow for:
 - Navajo Reservoir Pine Ramp WID station to be staffed from January through December, 7 days/week; Sims Marina WID station to be staffed April 1 through September 30, Friday, Saturday and Sunday.
 - Elephant Butte Marina del Sur WID Station to be staffed from April through September, Wednesday through Sunday and October through March, 7 days per week.
- Implemented a wire seal program similar to other states in order to encourage watercraft owners to completely Clean, Drain and Dry their watercraft upon leaving a waterbody and as a way to expedite their next watercraft entrance inspection.
- Conducted 12 Pacific States Marine Fisheries Commission Level I & II WIT training classes:
 - 63 individuals received Level I & II certification
 - 76 individuals received Level I & II refresher training
- Conducted watercraft inspections at 19 locations (waterbodies/G&F offices); which is an increase of 14 locations (waterbodies/G&F offices) that received watercraft inspections in

2015. Thus far in 2016, 29,096 watercraft have been inspected (174 decontaminations) compared to 10,140 inspections (107 decontaminations) conducted in 2015.

Nevada Department of Wildlife

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- Establishment of a statewide regulation on the removal of water from vessels or conveyances that are transported on a public roadway or launched on a body of water in the State shall: drain all water from the vessel of conveyance....including ballast tank, motor cooling system, bilge, live well, motor or lower outboard unit: and ensure that all drain plugs, drain valves and other devices used to control the draining of water from the vessel or conveyanceare removed or opened while transporting the vessel or conveyance on public roads of the State. (Draft to Wildlife Commission 9/23/2016).
- In spring 2016, NDOW contracted with the Invasive Species Action Network to assist with the writing of Nevada's Aquatic Invasive Species Management Plan. The draft plan is expected to be submitted to the ANSTF in the spring of 2016. A statewide AIS Management Plan Committee has been established to assist with development of the Plan.
- With the assistance of Colorado Parks and Wildlife, NDOW began utilizing the Watercraft Inspection and Decontamination Website for notifications and distribution of Watercraft Movement Notices to other states. Currently, the notices are for watercraft that NDOW's performs decontaminations on at Lake Mead NRA. Other statewide inspection/decontamination data is expected to be established in the database in calendar year 2017.
- A new seasonal inspection/decontamination station was established in May 2016 at the heavily used Boulder Boat Ramp at Lake Mead National Recreation Area (LMNRA). A total of 4 stations were operational during 2016. In May 2016, in coordination with National Park Service (NPS), NDOW also began implementing a program whereby watercraft owners were requested to remove the drain plug and drain all water from the vessel (live wells, bilge, etc.) upon exit at 4 boat ramps. The revised program was established due to the addition of NPS AIS seasonal staff providing AIS outreach to watercrafts prior to launching. As of mid-September 2016, over 450 decontaminations have been performed at Lake Mead NRA at 4 stations and well over 7,000 inspections.

In 2016, NDOW also focused heavily on watercraft users as they exited the numerous fishing tournaments at LMNRA. One-two fishing tournaments occur monthly at the Lake and NDOW provided watercraft decontaminations and required the removal of all backwater from the vessels (live wells, bilge, drain plug, etc.) before exit from marina area. Watercraft movement notices were provided to the destination states.

NDOW received funding from QZAP to establish and implement a watercraft inspection and AIS outreach program (1 PT staff) directed at boat dealers and auction houses in the Las Vegas Valley. The program is scheduled to begin in mid to late October. NDOW will be coordinating with Creative Resource Strategies and Pacific States Marine Fisheries Commission on the outreach/educational component.

- The statewide NDOW AIS Program operated 13 inspection and decontamination stations in 2016. One roadside station: 3 rovers: 9 boat ramp/entrance area stations. Due to low water levels, 4 stations closed at the end of August. The remaining stations will remain open until the end of September and one will remain open until the end of October. Three stations at LMNRA will remain open throughout the winter and decontaminations will be provided on an appointment

basis.

North Dakota Game & Fish Department

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- **Multi-media outreach campaign** – We renewed a contract with an NGO to fund a statewide, multi-media ANS I/E effort; completed multiple internal webcast, video, press releases, and website updates; assisted with design of a new ANS sign, brochure updates, and state fair display; and met with various user groups to present information about ANS.
 - **Seasonal boater surveys and voluntary inspections** – We contracted work of four seasonal employees to conduct voluntary boater surveys and inspections at high-use locations in ND.
 - **Industry ANS inspections** – ANS inspections were completed on high-risk commercial construction equipment and ANS facility inspections were completed at non-resident bait suppliers that sell live aquatic bait to ND bait vendors.
 - **ANS sampling** – We conducted regular monitoring of the Red River for zebra mussels; conducted early detection sampling on a number of non-infested waters for zebra mussels and other ANS; and conducted regular monitoring on the James River for silver carp.
 - **Coordination** – We hosted a ND AIS Committee meeting (held every spring and fall); met with various ND user groups and water advisory boards; and attended regional coordination meetings.
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Oklahoma Department of Wildlife Conservation

No report.

Oregon Department of Fish & Wildlife

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- 2016 Watercraft Inspection teams (WIT) completed 16,177 watercraft inspections as of September 30, 2016
 - WIT intercepted 15 vessels with quagga or zebra mussels and three with brown mussels
 - WIT intercepted 348 vessels with other types of AIS such as Eurasians Water milfoil.
 - Conducted two rotenone treatments for illegal introduced fish species
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South Dakota Department of Game, Fish and Parks

No Report.

Texas Parks and Wildlife Department

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▪ **Zebra mussel early detection and prevention inspections**

Zebra mussels (ZM) are now found in 13 water bodies in three river basins—Lakes Belton, Bridgeport, Dean Gilbert (a 45-acre Community Fishing Lake in Sherman), Eagle Mountain, Fishing Hole (a small lake connected to the Trinity River below Lake Lewisville), Lavon, Lewisville, Livingston, Ray Roberts, Stillhouse Hollow, Texoma Waco, and Worth. Of these, eight can be classified as fully infested (Texas now uses the WRP classification strategy). In 2016, fully established ZM infestations were detected in two new lakes—Eagle Mountain and Stillhouse Hollow—and ZM and/or their larvae were detected repeatedly in two new lakes—Livingston and Worth. TPWD biologists and eight partner agencies regularly monitor more than 40 of Texas' non-infested, but high-risk, water bodies as well as monitoring infestation status and/or population dynamics in five positive and five infested lakes. During summer 2016, seasonal inspectors inspected 1,960 boats entering and/or leaving 28 Texas lakes, both infested and non-infested, and visited nearly 80 marinas to develop partnerships, provide outreach materials and updates, and identify locations that can provide fee-based decontamination services for infested boats.

▪ **Aquatic invasive plant control**

Giant salvinia (GS) and water hyacinth (WH) remain the most problematic species in Texas. In 2016, Texas has spent approximately \$800,000 on aquatic invasive vegetation management. Seventeen water bodies currently contain GS, most in East Texas. In 2016, Texas has chemically treated over 7,000 acres of GS and released a total of 583,200 adult giant salvinia. Texas is also funding research at Stephen F. Austin State University on development of endocides, which show great promise as a new tool for GS management. Over the most recent two decades, when data are best available, 35 water bodies have had infestations of water hyacinth and up to 44 water bodies have had WH at some point in time. Small-scale, initial WH infestations were eradicated in nine water bodies. In 2016, Texas has chemically treated over 400 acres of WH. TPWD has purchased a mobile rapid response unit consisting of a fully enclosed cargo trailer containing 1,300 feet of floating containment/oil spill boom, and additional booms (700-800 feet) are cached at local district offices. Two additional rapid response trailers may be purchased in fiscal year 2017.

▪ **Riparian invasive plant management**

Increased funding has allowed substantial expansion of control efforts for the two most problematic riparian invasive plants in Texas—saltcedar and Arundo. However, there are also notable local success stories for other species, including increasing control of elephant ear on over 25 river miles in the Llano River basin. Saltcedar (SC) is estimated to infest over half a million acres in West and South and contributed to habitat degradation that was a key consideration in the decision to list Smalleye and Sharpnose Shiners as endangered in 2014. Biological control beetles (*Diorhabda* species) have been introduced across the state, but are having little impact on SC infestations. In 2016, TPWD worked

with the USFWS to recruit landowner participation in implementation of large-scale SC treatment on the Upper Brazos. Nearly 30 landowners have signed up to participate and 3,500 acres of SC has been treated on the Double Mountain Forks of the Brazos River from Lubbock to Aspermont.

Arundo, also known as river cane, giant reed, or carrizo cane, has become increasingly common in rivers and streams of the Texas Hill Country, which provide important habitat for imperiled fishes. In 2016, TPWD partnered with the Hill Country Alliance, City of Fredericksburg, and The Nature Conservancy to expand management efforts for Arundo to the headwaters of the Pedernales River, as well as to areas of the Blanco River where Arundo threatens to create vast monocultures in areas devastated by recent flooding. Over 65 Upper Pedernales landowners and 50 Blanco landowners signed up in 2016 to participate in a 'Healthy Creeks Initiative' to manage Arundo and more than 20 acres have been treated.

- **Expanded research efforts**

Texas is currently sponsoring three ZM research projects, with additional support from ANSTF funds and City of Dallas and Tarrant Regional Water District. These projects focus on population dynamics of an invasive species living at the edge of its physiological (i.e., temperature) tolerances, downstream dispersal dynamics from infested lakes that are river impoundments, and Texas-specific risk assessments to help target monitoring and outreach efforts.

We are also working with Texas Tech University on Upper Brazos biomonitoring studies (i.e., fish, channel morphology, satellite imagery to evaluate SC infestation over time) and with University of Texas - Bureau of Economic Geology on hydrological monitoring to detect changes in groundwater contributions. Similarly, we are conducting in-house research to evaluate the effects of Arundo and Arundo control efforts on Hill Country streams.

Texas is also sponsoring a study by Texas Tech University to delineate the range of Bighead Carp in Texas, using traditional and eDNA methods, with the goal of refining regulations and better targeting outreach efforts to prevent spread of this species via bait bucket transfers.

- **Expanded outreach campaigns**

In 2016, TPWD has expanded ZM outreach campaign to include areas around high risk, non-infested lakes as well as areas around newly infested lakes. In addition, TPWD has revived a previous campaign to promote Clean, Drain, Dry among boaters in East Texas to help prevent the further spread of GS and other aquatic plants. These campaigns have been substantially expanded in the areas of targeted social media efforts and development of new infographics for ZM and GS.

Utah Division of Wildlife Resources

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- Utah's AIS Program (<https://wildlife.utah.gov/invasive-mussels.html>) successfully began transitioning the interdiction component of the program from the Aquatics Section to the Law Enforcement Section. A career-mobility position was created to serve as an AIS Law Enforcement Coordinator, and this position is in the process of being made permanent. The need for this move developed with the changing circumstances at Lake Powell and the increased number of mussel-encrusted boats exiting the reservoir. Nathan Owens, hired in February 2016, is the new AIS Coordinator, and Lt. Scott Dalebout is currently serving as the AIS Law Enforcement Coordinator.
 - A Local Boater Program was instituted for southern Lake Powell. Residents of the Page, AZ, area are eligible to receive a Local Boater sticker, allowing them to bypass the exit inspection process conducted by UDWR technicians, while still being required to comply with state law. This also enables UDWR technicians to dedicate more attention to those high-risk boats traveling out of the area. The program has proven to be popular with both the local boaters, as well as the technicians.
 - UDWR continued its partnership with the National Park Service and Arizona Game & Fish to provide containment efforts at Lake Powell. Three separate WID trainings were provided through joint efforts with NPS. Exit inspections and decontaminations are now being offered at additional ramps, including Antelope Point and Halls Crossing. Over 30,000 boats have been inspected and 1,500 decontaminations performed in 2016. Two private businesses were trained and enrolled to provide private decontamination services in the Bullfrog area of Lake Powell. The businesses will be decontaminating all boats exiting the reservoir with mussels attached, and all large, complex boats requiring extra decontamination effort. A Lake Powell-specific marketing campaign was initiated through contracting work with a local business in Page, AZ. Marketing activities occurred April through November and will continue in the future.
 - Three new rule changes were approved in September 2015. The first modified the designated boundary of infestation at Lake Powell. The original boundary was arbitrarily designated within the boundaries of Canyonlands National Park. The revised boundary is now located outside the national park, further down the Colorado River. The second rule change makes it unlawful for any boater to remove/destroy a seal applied to a boat by a UDWR-approved entity prior to verifying that the boat has met the decontamination requirements within the state of Utah. The third rule change allows rafting companies to apply for a permit that would give them permission to use alternate forms of decontamination, other than the dry time and hot water wash requirements specified in rule. More information can be found at <http://www.rules.utah.gov/publicat/code/r657/r657-060.htm>.
 - No further evidence of mussels has been found in Deer Creek Reservoir. With bi-monthly plankton samples collected and multiple dive surveys performed, a single plankton sample collected in October 2014 remains the only evidence of mussels. Deer Creek Reservoir remains listed as a "suspect" reservoir, and without any further future evidence of mussels, will be downgraded to an "undetected" water in January 2018.
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Washington Department of Fish and Wildlife

No Report

Wyoming Game and Fish Department

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- **Outreach** – In 2016 we again conducted a boater appreciation raffle 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. The raffle has proven to be a positive public interaction with boaters and results in valuable feedback from boaters on their inspection experience.

- **Watercraft Inspections** - Through June 2016, a total of 16,370 watercraft inspections were conducted, resulting in 10,587 individual boaters being contacted at all check stations. A total of 1,203 high risk inspections were conducted and 220 watercraft required decontamination. The majority of decontaminations (58%) were performed on watercraft with standing water in the motor.
- **Monitoring**- Over 60 waters were surveyed for aquatic invasive species during 2016. Results are still pending for the majority of waters sampled.
- **Legislation** – In the process of moving forward with a bilge plug removal regulation following the guidance of the WAFWA Aquatic Invasive Species Committee Resolution.
 - More information can be found at wgfd.wyo.gov/AIS.

U.S. TERRITORIAL GOVERNMENT MEMBER

No report.

CANADIAN PROVINCIAL GOVERNMENTS

Alberta Environment & Parks

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- **Emergency Response:** Whirling disease was detected for the first time in Canada (August 2016, Johnson Lake in Banff National Park). Alberta Environment & Parks has taken the lead in responding to the detection (working with Parks Canada and the Canadian Food & Inspection Agency) using our Alberta Support & Emergency Response Team (ASERT) and the Incident Command System. Regional fisheries biologists are currently sampling priority areas (e.g. where trout are present) to determine the extent of the spread. At this point, positive detections have been found in Banff National Park, downstream in the Bow River (a large river system that flows into the South Saskatchewan River and then through Saskatchewan and Manitoba to the Hudson Bay), as well as a handful of private aquaculture facilities (potentially the source). While fish disease and parasites have not formally been part of the Alberta Aquatic Invasive Species Program, AIS staff have assisted with the response, the Dreissenid mussel Early Detection Rapid Response Plan was utilized for the response, hot water wash units have been deployed for decontamination activities associated with sampling; boater surveys incorporate questions about the issue; and AIS staff will likely assist with the long term monitoring and surveillance efforts.
- **Inspections:** Since the watercraft inspection stations opened in the spring/summer 18,000 watercraft have been inspected; 13 mussel-fouled boats intercepted (the majority of which are coming from eastern provinces and states); and over 1/3 of all boats inspected were considered 'high risk.' We also have had three full time Conservation Canine dogs assisting at the highest trafficked sites. This year we have been able to utilize our Alberta Support & Emergency Response Team (ASERT) Emergency Response Officers for all high risk/fouled boat coordination and decontamination, which has proved to be an invaluable resource. Inspections are mandatory for all passing watercraft including motorized, non-motorized and commercially hauled. We are still experiencing compliance issues at inspection stations, though it has improved slightly this year with the increase in law enforcement authorized to enforce the rules: Fish & Wildlife Officers, Conservation Officers (provincial parks), Transport Officers (weigh scales), RCMP, and Traffic Sheriffs.

- **Policy & Legislation:** In April 2016 new AIS regulations came into force under the *Fisheries (Alberta) Act*: a drain plug rule that requires all watercraft to have the drain plug pulled while in transport – messaging for PULL THE PLUG will be incorporated into our existing CLEAN DRAIN DRY campaign; mandatory reporting of all prohibited AIS found in the wild; the development of a possession licence for prohibited species; and a prohibition on the release of ‘subject waters’ into public waters (e.g. aquariums, tanks used to transport live fish, etc.). The federal AIS Regulations passed in 2015 are also being implemented, the most beneficial aspects being increased assistance from Canadian Border Services Agency at the US border and delegated authority to the province to deposit deleterious substances for the purpose of controlling AIS (previously required federal approval). This winter we will be working on building specified penalties for violations such as failing to stop at an inspection station and failing to pull the plug; it is believed this will increase Officers’ willingness to take enforcement action. Currently all AIS related violations are either a warning or a court appearance. Also this spring a ‘Western Canada Agreement for Coordinated Regional Defence Against Invasive Species’ was signed by BC, Alberta, Saskatchewan, Manitoba and Yukon. The initial focus will be on preventing the spread of zebra mussels, though the scope will expand in future years. This agreement will help to coordinate efforts to prevent and manage AIS in western Canada.
- **Response:** This season AIS staff have been very busy with control/eradication projects for invasive Phragmites (our first report in the province), flowering rush, and goldfish (in storm water and artificial ponds with connectivity to flowing waters). There are very few registered pesticides for AIS in Canada, and this supplemented by a stringent provincial approvals process is proving to make response activities quite challenging.
- **Education/Outreach:** We have two high profile AIS campaigns: CLEAN DRAIN DRY targeting boaters and DON’T LET IT LOOSE targeting aquarium stores and hobbyists, anglers, water gardeners, and cultures that practice intentional release. We are using mainstream media to promote these campaigns (TV, social media, magazines, etc.) and reached over 2 million people in 2015 with a similar approach. This fall we’ll get permanent highway signs out all numbered highways entering the province. Stakeholders such as municipalities and irrigation districts have assisted with funding many of our education and outreach efforts.



British Columbia Ministry of Environment

No Report.

Manitoba Conservation and Water Stewardship

No Report.

Saskatchewan

No report.

MEXICO STATE OR AT LARGE MEMBER

No report.

TRIBAL/FIRST NATIONS REGIONS

No report.

OTHER INTERESTS – APPOINTING ORGANIZATIONS

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 2015 and Spring 2016. 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. Besides training at Lake Mead, additional remote trainings by D were also carried out in Big Bear Lake, CA and Glen Canyon National Recreation Area (Lake Powell). WIT III (Trainer Training) were conducted @ Elephant Butte Reservoir, NM and Lake Mead. 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](#)) was completed in Spring 2016. Leah Elwell (ISAN) was the UMPS III lead author and had assistance from PSMFC and 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 PSMFC website <http://www.westernais.org/>; reprinted, redesigned and distributed 100,000 "Western States Rack Card"; "Don't Move a Mussel 2011" "On the Lookout", and "Threats to the West" to AIS coordinators and others throughout the region. Attended sport/commercial fishing shows with AIS booth in Seattle, Boise, Portland and Boring, OR. We just have started a boat vector pathway project (with L. DeBruyckere, lead).
 - **Coordination/Other:** We hosted meetings of the Pacific Ballast Water Group (<http://www.psmfc.org/ballast/>) in March in Sacramento, CA, that included a WRP Coastal Committee meeting, and Columbia River Basin Team of the 100th Meridian Initiative in October and May (<http://www.westernais.org/100th-meridian>); PSMFC/USGS has a dreissenid monitoring database for the CRB <http://crbais.psmfc.org/zebraquagga-mussel-2015> [Note database is being transferred to <http://www.westernais.org/monitoring> soon] Continued coordination and meeting with (with L. DeBruyckere, lead) Federal Rapid Response Working Group – dreissenids; continued to maintain West911 "hotline" listserve and website, and worked with PNWER, NWPCC, USACE and states on WRRDA watercraft inspection station funding letter report.
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Puget Sound Partnership

No report.

San Francisco Estuary Partnership

No report.

Sea Grant - Oregon and WA

No report.

Tahoe Regional Planning Agency

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- The Lake Tahoe AIS Program began gradual use of the ANS Mobile application and purchased handheld devices and barcode readers which have been deployed to ramps for use. Funding to conduct mobile application modifications for Tahoe specific needs has been secured and planned for the winter of 2016.
 - TRPA staff are key participants in the American Boat and Yacht Council's Project Technical Committee on AIS and the boat industry. Two reviews of a draft Technical Information Report (TIR) have been completed and significant progress has been made with the development of relationships between AIS managers and representatives with the boat industry. The final TIR is anticipated to be complete mid to late 2017.
 - The Lake Tahoe AIS Program has been conditionally approved to receive funds to conduct an innovative pilot project for Eurasian watermilfoil control by using UV light. Project work is scheduled for the spring of 2017/
 - TRPA, along with the Lahontan Water Quality Control Board (CA) are working with a private landowner, that includes over 170 surface acres of waterways (channels & lagoons) connected to Lake Tahoe and are 97% infested with aquatic invasive plants, to develop an AIS control strategy, which is complicated by the significant restrictions on aquatic herbicide use. Until recently, they were completely prohibited, and suggested use has drawn considerable opposition to their use. Much of the arguments against their use are emotional attachments to an iconic waterbody such as Tahoe, that is well known for the regulatory environment that exists to protect Lake Tahoe.
 - TRPA coordinates an annual federal summit surrounding their Environmental Improvement Program (EIP) (of which the AIS Program is a part of), with this year's summit hosting President Barack Obama as the keynote speaker. On August 31, 2016, Senators Reid (NV), Feinstein (CA) and Boxer (CA), and Gov. Jerry Brown (CA), spoke on the success of the EIP Program and how their efforts to find funding for implementation are not complete. The highlight was having the President of the United States mention the critical need to battle invasive species.
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Western Association of Fish and Wildlife Agencies

No Report.

Western Aquatic Plant Management Society (WAPMS)

No report.

OTHER INTERESTS – INDIVIDUAL

Academia Coastal***Portland State University***

No report.

Academia - Inland***The University of Texas at Arlington***

No report

Aquaculture – Coastal

Pacific Coast Shellfish Growers Association

No report.

Aquaculture – Inland

No report.

Conservation NGO – Coastal

No report.

Conservation NGO – Inland

Invasive Species Action Network

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- **Don't Let It Loose – pet store outreach program**

Recognizing the need for better outreach to pet owners, the Don't Let It Loose program was developed in 2015 with support from the US Fish & Wildlife Service (USFWS). The initial effort was a pilot program only in Montana. In 2016 we continued to support the effort in Montana but also worked to expand the effort into additional states. Hawaii has fully adopted the program and is currently implementing it. Oregon and Washington are jointly working on implementing the effort and will kick it off at the Portland Pet Expo in mid-October. Idaho is committed to implementing the program in 2016/2017. With financial support from the USFWS, North Dakota, South Dakota and Wyoming are all fully implementing the effort and should have their programs in place early in 2017. While most of the effort has focused on pet stores, in 2017 we are beginning to tie the program into schools using the same graphics and messaging. Information about Don't Let It Loose will be available at the WRP meeting.



- **Watercraft Inspection Station Evaluations**

Since 2013 ISAN has been conducting undercover assessments of watercraft inspection stations. By posing as recreational boaters our evaluators can experience an inspection in the same way as any ordinary boater. This “Secret Shopper” program allows managers to gain unique insights into how their stations are operated when there is no on-site supervision. ISAN is experienced in evaluating all types of facilities and welcomes the opportunity to discuss the program with you at the WRP annual meeting.

- **Non-motorized boater outreach**

ISAN is working to better educate non-motorized boaters about the threat of AIS and how they need to take action to prevent the spread of invasives. In the Lower Colorado River area we are working with the Grand Canyon National Park to implement a suite of changes for recreational boaters. From adding cleaning language to float permits to conducting cleaning clinics for guides, we are taking a comprehensive approach to educating boaters. Throughout the west we are working to create better awareness among non-motorized boaters that they are required to stop at all watercraft inspection stations. There are many different types of non-motorized boaters and multiple outreach approaches are required to effect behavior change. We are developing multiple tools that will allow us to reach boaters in different ways. Hang tags and information cards are available for use



by manufacturers to promote the issue to their customers. Online and print ads are available for use where appropriate. Multiple decals are available for distribution to boaters and we are developing new approaches to be used for events where non-motorized boaters congregate (i.e. whitewater festivals, river rendezvous, etc.). Materials will be available for discussion at the WRP meeting.

- **Professional Services**

ISAN continues to provide professional services to assist the invasive species community in achieving significant outcomes. During 2016 ISAN facilitated an AIS Rapid Response Exercise in Grand Teton National Park. We were instrumental in the development of the UMPS 2 document. We continue to provide professional coordination services to the WRP. We are developing a statewide AIS management plan for Nevada. We are developing an urban invasive weed management plan for a Montana community. We provide technical assistance to the Montana Invasive Species Advisory Committee. We are developing a rapid response framework for the Greater Yellowstone Coordinating Committee. These are just a few examples of the types of expertise we can provide to assist in the development of AIS programs. Be sure to talk with Leah or Bob if you have any questions about how we might be able to help you.

- **Youth Education**

ISAN has a very strong youth education program. In Montana we reach about 9,000 students annually with a message about invasives. Working in classrooms and informal settings, ISAN staff conduct about 300 educational programs each year. To support these activities we have developed several unique methods of teaching students about invasives. In 2016 we added songs to the menu by adapting the tune of “Mary Had A little Lamb” into a tune that teaches cleaning. You can view the song in use at <https://vimeo.com/121181853>. We also added a video that shows how to conduct an activity that shows how easily a boat can become contaminated. View it at <https://vimeo.com/120711702>. One of our most popular activities is the “Invader Inspector” activity where students learn how to inspect boats and do a hands-on inspection.

ISAN has a lot of resources that can help you teach students about AIS. Check out our educational resources at <http://stopans.org/educationresources.html> and don’t hesitate to contact us if you have questions or needs.

Regional Power Council

No report.

Regional Water Council

No report.

Aquatic Pet Industry

No report.

Aquatic Plant Industry

No report.

Recreational Boating

No report.

Legal/Law Enforcement

National Sea Grant Law Center

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- The NSGLC and the Association of Fish and Wildlife Association continued their efforts to develop a model legal framework for state watercraft inspection and decontamination programs. A draft of the “Model Regulation for State Watercraft Inspection and Decontamination Programs” was released for a 30-day comment period on September 19. Comments are due October 14 and the final document will be released in November 2016.
 - The NSGLC provided “rapid response” research assistance to Western states AIS coordinators to help with legislative and outreach efforts. In January 2016, the NSGLC compiled information on conveyance drainage requirements in the Western States. In July 2016, the NSGLC completed a national survey of state “Clean, Drain, and Dry” provisions and related requirements.
 - The NSGLC, along with fellow members of the Building Consensus Planning Committee, organized a Building Consensus meeting (Denver III) in April 2016.
 - The NSGLC presented “Developing a Model Legal Framework for State Watercraft Inspection and Decontamination Programs: Laying a Foundation for Reciprocity” at the National Association of State Boating Law Administrators annual conference on September 12, 2016 in Seattle, Washington.
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At Large – Coastal

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

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- Compliance Program
 - The implementation of an enhanced vessel inspection and enforcement program in early 2014 is likely responsible for recent gains in vessel compliance.
 - Between July 1, 2015, and June 30, 2016, there were 9182 qualifying vessel (>300 gross registered tons) arrivals at California ports. 2315 vessels (=25.2% of all arrivals) were inspected for compliance with the Marine Invasive Species Act (MISA). Statutory mandate is “at least 25%.” 35 violations were detected during vessel inspections –19 administrative (recordkeeping/reporting) and 16 operational (illegal exchange or no exchange).
 - 98% of all ballast water carried into California waters is reported to be managed in compliance with the MISA, either through proper management or retention of all ballast on board.
 - Since the latter half of 2013, the proportion of non-compliant (vs total) ballast water discharged in the state has dropped from 11% to 1.4%.
- Proposed Regulations
 - In August 2016, the State Lands Commission approved proposed regulations to establish penalties and an enforcement and hearing process for violations of the Marine Invasive Species Act. The regulations must still be approved by the Office of Administrative Law.
 - Proposed regulations to raise the fee to fund the Marine Invasive Species Program were

published on September 23, 2016. The public comment period runs through November 7.

- Proposed regulations to establish biofouling management and recordkeeping requirements are expected to be published for public comment in October 2016.

- **MISP Database Upgrade**

- The Commission recently entered into a contract to upgrade the MISP vessel vector management database. The upgrades will establish a web-based user interface to enable direct vessel submission of required reporting forms (instead of via email or fax) which will help with pre-arrival risk assessment. Currently over 12,000 reports forms are received each year and manually entered into the MISP database by staff.

- **Increased interaction with academic community**

- During the summer 2016, the MISP hosted two interns through the California State University Council on Ocean Affairs Science and Technology program. Their work including web-based searches and field data collection to enhance the MISP's database of predictive factors for NIS introduction. Their work will help with the development of an enhanced risk assessment matrix for vessel arrivals.

The Marine Invasive Species Program of the California Department of Fish and Wildlife (CDFW-MISP) Update

- **Monitoring**

- CDFW-MISP contracts with the Smithsonian Environmental Research Center to intensively sample California estuaries and the outer coast. Ten estuaries will be sampled over a 7-year period, but additional continuous sampling is conducted in San Francisco Bay and (beginning in 2017) Los Angeles/Long Beach Harbor. This is the most comprehensive statistical community analysis of invasion patterns across multiple estuaries to date.
- Moss Landing Marine Laboratories performs genetic analysis of planktonic and hard- and soft-substrate communities. This project was the first to use next-generation sequencing for routine, high-volume DNA barcoding. The efficiency of these metagenetic analyses will allow us to sample more estuaries and will be the basis of a future broad scale monitoring and detection program.
- The results of Phase I of this multi-year survey were reported in 2016. We found a relatively low number of species that were new to California, implying a possible decline in the rate of new invasions in recent years. Ongoing sampling and analysis will test if the slowing rate of new invasions is real and if it is caused by ballast water management. Results will be published in peer-reviewed journals later this year.

- **Database**

- The California Non-native Estuarine and Marine Organisms (CalNEMO) database has been updated, as we continue to expand the number of NIS profiles and occurrence records in California available to the public. <http://invasions.si.edu/nemesis/calnemo/intro.html>

At Large - Inland

Idaho Coop fish and Wildlife Research Unit

No report.
