

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting

September 21-24, 2021

Virtual Meeting

Name: Catherine de Rivera

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. We have been conducting early detection surveys for juvenile and adult Dreissinid mussels (none found so far) in high-risk waters throughout Oregon and especially in Columbia River Reservoirs. *Potamopyrgus antipodarum* (New Zealand mud snails) were collected from Lake Wallula and other sites.
2. Monitoring surveys of high-risk areas for *Butomus umbellatus* (flowering rush; and, before August, *Spartina*), and other Oregon Department of Agriculture (ODA) listed aquatic invasive species. No new infestations of ODA A- or B-listed species were detected, although known distributions of listed species were confirmed.
3. Advancing coordination efforts, De Rivera served as chair for the Oregon Invasive Species Council (OISC) in 2020 and continues serving on the OISC and its committees. She also is on the Northwest Regional Invasive Species & Climate Change Network Advisory Team, and participates in the west coast green crab meetings hosted by PSMFC. Also for ABRPI/CLR: Sytsma participated in the, Western Regional Panel, Columbia River Basin ANS team, Columbia Basin CWMA Steering Committee, Flowering Rush WG).
4. Educating the public about ANS. A) De Rivera Taught a course on the ecology and management of invasive species. In addition to training students in principles about the ecology and management of invasive species, class products on AIS included outreach materials on:
 - with Oregon Sea Grant (Sam Chan): mud blister worms (affects oyster shells): <https://arcg.is/1uCTLv> (story map still needs to be cleared with oyster growers);
 - with Rick Boatner, ODFW: a risk assessment on non-native abalone in Oregon (<https://www.oregoninvasivespeciescouncil.org/news-channel/2021/1/26/student-project-abalone-risk-assessment>);
 - with Willamette River Keepers: aquatic weed brochure <https://www.oregoninvasivespeciescouncil.org/news-channel/2021/1/26/student-project-major-invaders-in-the-willamette-basin-brochure> ; and
 - USDA-FS: a story map on impacts of regional invaders, including aquatic nuisance species: <https://storymaps.arcgis.com/stories/39ca0b546827420b8b93df7abedc26c2> .

B) Non-course related outreach included:

- reviewing and contributing to Benton Soil and Water Conservation District's Aquatic Weed Guide: [:https://bentonswcd.org/assets/BSWCDAquaticWeedGuidebklt15.pdf](https://bentonswcd.org/assets/BSWCDAquaticWeedGuidebklt15.pdf)
 - Creating a risk assessment for *Myriophyllum heterophyllum*;
 - providing technical assistance on management of Azolla to Fanno Creek citizens and aquatic species identification help for other groups;
 - maintaining a community-based application to document and map aquatic invasive species in the Willamette Basin <https://web.fulcrumapp.com/communities/willamette-aquatic-invasive-mapping>;
 - Mapping emergent aquatic plants using aerial photographs and satellite imagery in off-channel Willamette River habitats
5. Conducting research:
- Analyzed data from San Justo Reservoir on distribution of zebra mussel veligers and settled adults
 - Conducted pilot research on how eelgrass density interacts with green crab impacts on eelgrass;
 - Mapped distribution of green crabs in Coos Bay along with habitats and trap abundance of other crabs as a first step in determining factors influencing their distribution there.
 - Determined the effect of AIS tui chub and golden shiners on water quality in Diamond and Lemolo Lakes.
 - Assessed impacts of aquatic plants on water quality in several Willamette River off-channel habitats.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Continued early detection surveys for AIS in Oregon lakes, rivers, and reservoirs as well as in estuaries.
2. Starting a multi-species management plan for non-native, marine and estuarine nuisance algae in Oregon.
3. Revision of state ANS plan

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

6. Treated four roughly five-acre Flowering Rush locations in McNary Reservoir with ERDC assistance and funding.
7. Maintained APC Cost shares for Watercraft Inspection station and Monitoring for 2021 for protection of the CRB.
3. Plan to Finalize CRB cost-share expansion and Upper Missouri, South Platte, and Upper Colorado fall of CY'21
4. Flowering Rush cost share with WA, ID, MT, and OR is in place and states are taking actions within this program.
5. Harmful Algal Blooms (HABs) ERDC research on maintenance and control techniques in progress. Numerous studies and field trails still delayed due to Covid; but additional research development occurring due to increased funding for ERDC.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Maintain Cost-Share Programs for Watercraft Inspection Stations and Monitoring for CRB and add the other river basins authorized, contingent on appropriated funding.
2. Maintain the Flowering Rush cost-share Program within the four states of WA, ID, MT, and OR, contingent on appropriated funding.
3. Finalize establishment of Mussel Rapid Response Cost-Share.

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Northern pike management: In the past year, ADF&G continued to implement northern pike management in Southcentral, AK. Using gillnets and environmental DNA, 34 waterbodies were surveyed for northern pike in the Anchorage, Kenai Peninsula and Matanuska-Susitna (Mat-Su) areas, with the majority occurring in the Mat-Su using gillnets. Lakes in which pike had previously been eradicated were surveyed in Anchorage (eDNA) and the Kenai Peninsula (gillnets).

Suppression of northern pike continued in lake complexes and large drainages containing salmonids and other native fish species. In partnership with the Tyonek Tribal Conservation District, two suppression projects occurred on the west side of Cook Inlet. Collaboration with the US Department of Defense (Air Force and Army) continued in the past year to suppress pike using gillnets in Sixmile Lake on Joint Base Elmendorf-Richardson. A long-term suppression project continued in Alexander Creek Drainage utilizing gillnets to suppress pike with the goal of increasing escapement of salmonids, particularly Chinook.

ADF&G has had success eradicating northern pike from lakes in Southcentral over the past nearly fifteen years using rotenone. Lakes on the Kenai Peninsula are largely free of pike, with the exception of the Miller Creek Drainage which runs through the Kenai National Wildlife Refuge. Planning, permitting, and scoping efforts were completed in cooperation with the USFWS and local partners in preparation for a 2021 rotenone application. In the Mat-Su, three lakes were treated to remove pike. Native fish restoration projects were completed in Kenai Peninsula lakes, which had previously been treated with rotenone, to promote establishment of native fish and providing angling opportunities in lakes where pike were no longer present. Native fish restoration in the Mat-Su began by removing and relocating fish from pike lakes in order to restore populations post-treatment.

A multi-agency, comprehensive northern pike management plan is in development to guide pike efforts in the future.

2. AIS Outreach: A contractor was hired in 2020 to develop an outreach and communication strategy for aquatic invasive species. The contractor would develop campaign messaging for direct distribution and social media, create graphics to be used with messaging, and assess the effectiveness of outreach efforts. Target audiences for the campaign included boaters, anglers, hunters, floatplane pilots, and commercial fishers. Social media outlets including Facebook, Instagram and local channels were used to communicate with target audiences and the public. This project will wrap up in fall 2021.

3. Assess *Didemnum vexillum* distribution- A survey of Whiting Harbor near Sitka was completed to map estimated percent cover and distribution of the invasive colonial tunicate 11 yrs post discovery and after a two-phase control research project. Data analysis is underway.
4. New and potential policy updates – The Alaska Board of Fisheries adopted new regulations prohibiting the import, transport, export, possession, and sale of a list of new species classified as “invasive species”.

Alaska legislators who recognize the need for stewardship of Alaska ecosystems and economies in the face of threats from invasive species have again sponsored legislation. This new bill would establish an invasive species council within the Dept. of Fish and Game, create an invasive species decal to be sold to generate funds for the council, and require the council provide an annual update to the legislature. The bill passed out of House Resources in the first of a two year session.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Strategic planning
2. Develop a departmental response framework
3. Improve tools to prioritize water bodies for surveys and response based on risk, value, potential negative impacts and other parameters.

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Moss ball infested with zebra mussels response in March 2021. Over 813 pet and/or plant businesses were contacted, 50 were found to carry moss balls currently or at some point. Alberta was able to intercept 2529 moss balls from distribution and retail businesses. Lab staff completed 440 visual inspections of moss balls. Seventeen businesses were found to have zebra mussels; in total 41 adult zebra mussels were found, as well as a few water samples came back positive for veligers. Public was asked to dispose of moss balls with additional precautions to ensure zebra mussels would be killed and associated equipment was also decontaminated.
2. Record setting season of mussel infested boats intercepted under COVID 19 operations in 2020. With US-Canada international borders closed, more travelers from Eastern Canada were come out West for travel and watercraft inspectors intercepted a record setting amount in 2020, 31 interceptions. Watercraft inspections program continues to be nimble to ever changing priorities and manages to address necessary decontaminations, quarantine orders and referrals to and from other jurisdictions, under ever changing COVID19 restrictions.
3. Alberta Government undertook a response effort using the newly registered aquatic herbicide HabitatAqua (imazapyr) at the largest infestation in the province in 2021. Flowering rush dominates the lake shoreline at over 22 km of infestation at Lake Isle. This project was a multi-year project that explored control efforts and engaged with community members to gain confidence in using herbicide in a large-scale response efforts.
4. Alberta has been working to address a few non-native fish introductions. Prussian carp has undergone 2 years of physical removal to evaluate if stocked fish investments can be protected. Another year of removal is anticipated before a full evaluation of effectiveness will be completed. Closely related Goldfish have also underwent some control effort with Rotenone in storm water management ponds, before they are released to our natural waterways, where limited control efforts remain available.
5. European Water Chestnut was detected in e-commerce trade in Alberta in 2021. European Water Chestnut is a prohibited species under the Fisheries (Alberta) Act. With Fish & Wildlife Officer support, AIS program was able to seize three plants from internet trade.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

Alberta remains committed to supporting our five elements of programming:

- 1) Policy & Legislation – no planned changes, status quo
- 2) Education & Outreach – Continue to promote “Clean, Drain & Dry” and “Don’t Let It Loose”
- 3) Monitoring – promote citizen science with volunteers to re-establish dwindling monitoring capacity. Investing in training to support volunteer participation to AIS program monitoring
- 4) Watercraft Inspections and Decontamination – Prioritize Alberta’s east and south borders for watercraft inspections and if resources allow rebuild western stations as well

5) Response – Alberta remains committed to response of our 52 prohibited species as well as some additional species that remain a threat to our water resources, as program resources allow.

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Arizona Game and Fish Department (AZGFD) has been staffing launch ramps at Lake Powell (AZ) with contractor provided inspectors since October 2020. This partnership allows more efficient utilization of resources by partners at Glen Canyon National Recreation Area and allows for year round ramp coverage to ensure containment of quagga mussels.
2. AZGFD began piloting the Topock Watercraft Inspection and Decontamination Station (WID) on I-40 westbound just east of the CA border. This is the first roadside station in Arizona and provides boaters leaving the Lake Havasu area WID.
3. AZGFD and partners have performed over 8100 inspections and over 510 decontaminations. The significant increase watercraft inspections and decontaminations in 2021 can be attributed to having inspectors on-ramp at Lake Powell and the Topock WID station.
4. Zebra mussels were detected in moss balls (marimo) sold at pet stores in Arizona and nationwide in March 2021. AZGFD, along with AZ Department of Agriculture (AZDA), were able to have moss balls removed from stores and ensure proper disposal of contaminated stock. AZDA issued an Administrative Order restricting the import of moss balls into Arizona.
5. AZGFD AIS Program began widespread sampling and monitoring for aquatic invasive species statewide at high and moderate risk locations.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Continue working with partners to provide watercraft inspection and decontamination, ensure AIS compliance and provide outreach.
2. Expand AIS monitoring and sampling at Arizona waters.
3. Expand prevention capacity at non-AIS listed waters in AZ.

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Ongoing watercraft inspection station operations as part of the Invasive Mussel Defense Program
2. Continued invasive mussel lake monitoring and management of associated grant program in partnership with the Habitat Conservation Trust Foundation
3. BC's response to the emerging threat of zebra mussels in the newly identified pathway of aquarium plants known as moss balls. BC stood up it's Incident Command Structure and worked closely with partners across western Canada, the federal government and US partners to ensure coordinated rapid response. The B.C. Conservation Officer Service (COS) made contact with over 1,100 businesses across the province and over 9,000 moss balls were seized or surrendered to the COS.
4. Working with indigenous communities on priority aquatic invasive species (target species include yellow perch, invasive Asian clam and bullfrogs).
5. Updating the original economic impact assessment that was conducted in 2013 that estimated the cost if zebra and quagga mussels were to be introduced into BC (previously estimated at \$43M/annually). The analysis requires updating to reflect a more comprehensive assessment of the costs associated with invasive mussel introduction into BC across a broader range of sectors.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Ongoing watercraft inspection station operations as part of the Invasive Mussel Defense Program. Exploring regulatory tools to enhance invasive mussel prevention (e.g. pull the plug legislation).
2. Continued invasive mussel lake monitoring and management of associated grant program in partnership with the Habitat Conservation Trust Foundation. Continued refinement of protocol and priority waterbodies.
3. Exploring alternative funding models to provide long term funding for the BC Invasive Mussel Defence program
4. The development of an operational eDNA early detection AIS survey program, targeting invasive mussels and continued support for eDNA standards development.
5. Strengthen and develop partnerships with government, First Nations, local municipalities, regional groups and Universities to collaborate, coordinate and co-manage AIS priorities.

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Reclamation's primary focus for the past year has been the implementation of the Fiscal Year 2021 Mussels Spend Plan. Throughout 2021 Reclamation provided approximately \$3 million to support various mussel management activities across the West including support for watercraft

inspection and decontamination in Arizona, California, Colorado, Montana, New Mexico, North Dakota, South Dakota, Utah, Washington, and Wyoming.

2. Paperwork Reduction Act compliance for Reclamation to use the WID Regional Database was completed. The Office of Management and Budget approved the information collection on July 16th - this is now part of the Department of Interior-wide information collection (control number 1090-0013 and expiration date is 07/31/2024). Reclamation is utilizing the regional database for its watercraft inspection and decontamination program at New Melones Lake in northern California.
3. Reclamation's Science and Technology Program is currently funding 29 invasive species research projects, 27 of which are projects focused on invasive mussels. Six mussel research projects are concluding this year, and six mussel research proposals were submitted for funding consideration in FY22. The titles of the six concluding projects are listed below.
 - Invasive Quagga Mussel Impacts on the Lake Havasu Ecosystem
 - Risk Mapping for Mussel Infestation in the Pacific Northwest
 - Invasive Mussels and Harmful Algal Blooms: Interactions and Detection Methods
 - Costs Associated with Invasive Mussels Impacts and Management
 - Assessment of Laboratory Methods to Investigate Dreissenid Mussel Veliger Settling in Imhoff Cones Through Dense Organic Material
 - Case Studies: Impact and Control of Invasive Mussels at Hydropower Plants
4. The Reclamation Ecological Research Laboratory at the Technical Service Center in Denver, Colorado, has received and analyzed 1,260 invasive mussel samples from 150 water bodies between October 2020 and August 2021.
The CPN Regional Laboratory in Boise Idaho collected 83 plankton tows at 24 water bodies across the Columbia River Basin.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. The implementation of Reclamation's Fiscal Year 2022 Spend Plan to support various mussel management activities across the West
2. Continued mussel monitoring
3. Continued research on control technologies and early detection methodologies for mussels

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. **Continue Quagga Mussel Program** (Lead Agency – Department of Fish and Wildlife Invasive Species Program)

The statewide program continued to work toward prevention through interdiction of watercraft, outreach and education, support to responsible parties implementing containment at infested waters, and prevention at uninfested waters. From September 1, 2010 - July 31, 2021, 165,276 watercraft were inspected, 35 watercraft were quarantined, 5 was denied entry at the California Department of Food and Agriculture's Border Protection Stations due to

infestations of quagga/zebra mussels, and 6 in-transit notices were issued and affected states were notified of their impending arrival. In addition, CDFW and/or local agencies intercepted 5 mussel-infested watercraft within the state. CDFW conducted or partnered with agencies to conduct early detection monitoring for dreissenid mussels in 166 waterbodies.

2. **Nutria Eradication** (Lead Agency – Department of Fish and Wildlife Nutria Eradication Program)

March 2018 through July 13, 2021, the nutria eradication efforts in California have:

- Completed full and/or rapid assessments of approximately 1.4 million acres
- Executed entry permits with 4,000 landowners
- Set up 4,288 camera stations (964 currently active)
 - Conducted 35,633 camera checks
- Confirmed nutria within > 450 sites
- Deployed 5,705 trap sets for a total of 74,887 trap nights
- Taken or accounted for the take of 2,615 nutria from six Central Valley counties

3. **Quagga and Zebra Mussel Infestation Prevention Grant Program** (Lead Agency – State Parks Division of Boating and Waterways (DBW))

- With \$3 million dollars available for the 2021 QZ grant cycle, DBW received 12 applications. One application was for a Tier 1 Prevention Plan Project and 11 applications were for Tier 2 Implementation Projects. The QZ Grant Team will be notifying applicants of the award decisions in August/September 2021. The grants are expected to begin in September 2021 and will expire in two years.
- The 2019/20 QZ grant cycle is up and running with eight Projects funded; one is for a Tier 1 Prevention Plan Project and seven are for Tier 2 Implementation Projects. \$1.7 million was awarded. These grants expire October 18, 2022.
- The 2018/19 QZ Grant Cycle, with 11 Tier 2 Implementation Projects funded, will expire this year on November 17, 2021. \$3.14 million was awarded.
- Since the first grant cycle in 2014/15 through the previous awarded grant cycle for 2019/20, approximately \$16 million has been awarded statewide to reservoir owners and managers for the prevention of quagga and zebra mussel infestation at uninfested publicly accessible reservoirs. This funding total will increase, once the 2021 award determinations are final. Funding for this program originates from the quagga and zebra mussel prevention sticker fees, collected by the California Department of Motor Vehicles, from registered boaters.
- The next grant cycle for 2022, is anticipated to kick off in March 2022. To sign up for notifications for the QZ Grant Program, visit www.dbw.parks.ca.gov/QZGrant (scroll down to the middle of the page and click on “CLICK HERE to Subscribe to the QZ Grant Program Notifications”). QZ Grant Program information is available at www.dbw.ca.gov/QZGrant, or send an e-mail to: QZGrant@parks.ca.gov.

4. **Aquatic Invasive Plant Control Program (AIPCP)**(Lead Agency – State Parks Division of Boating and Waterways (DBW))

AIPCP is working on improving remote sensing capabilities through contract with NASA for use of satellite imagery through utilization of the Space Act Agreement and will synergize with the Delta311 app and new GIS software (Survey123 and collector). AIPCP has also focused on assisting tidal wetland area restoration through contractual agreement to provide aquatic invasive plant control services to DWR. AIPCP continues to work with USDA-ARS on biocontrol that may be viable in the California River Delta to support IPM.

5. ***Caulerpa prolifera* Eradication** (Lead Agency – California Department of Fish and Wildlife Marine Region)

In April 2021 *C. prolifera* was confirmed in the China Cove area of Newport Bay. The species has invaded seagrass and soft-bottom habitats in the Suez Canal, the Canary Islands, and Portugal, dramatically displacing native biota. *Caulerpa* species are well- documented aggressive invaders in California, Australia, and Mediterranean waters. *C. taxifolia* was successfully eradicated from two southern California locations between 2000-2006 at a cost of over \$7 million.

In April, the California Department of Fish and Wildlife and the Santa Ana Regional Water Quality Control Board reconvened the Southern California *Caulerpa* Action Team (SCCAT) for the purposes of addressing the *C. prolifera* infestation in Newport Harbor. A Rapid Response and Eradication Plan was developed and began to be implemented the following month. Implementation of Phase 1 of the Eradication Plan (i.e., removal/treatment in China Cove) is being funded by the State Water Resources Control Board's Cleanup and Abatement Account. Phase 1, completed mid-July 2021, used diver-operated dredging and teams of divers. The collected material was thoroughly dried to kill the algae and hauled away for upland disposal. Several subsequent diver surveys have occurred and *C. prolifera* plants and fragments continue to be collected. In order to continue work SCCAT must secure additional funding.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward. - *Continuation of the 5 efforts described above.*

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Implementation of regulatory amendments to require submission of *Annual Vessel Reporting Form (AVRF)* through the Marine Invasive Species Program's online portal MISP.IO.

Beginning on January 1, 2021, vessels arriving at California ports are required to submit the AVRF only through the online portal <https://MISP.IO>, removing the previous allowance to submit a PDF to a dedicated email address. Vessels submit the AVRF 24 hours in advance of the first arrival of each calendar year. The form requests information about vessel operational and maintenance practices related to biofouling and the use of ballast water treatment systems. This new requirement to only submit through the online portal results in reduced

data handling and data entry time, improving data quality and allowing Commission staff to be redirected to additional important tasks.

2. Completion of report to the California Legislature titled “2021 Biennial Report on the California Marine Invasive Species Program”

On December 17, 2020, the Commission approved a report to the California Legislature summarizing the activities and accomplishments of the California Marine Invasive Species Program between January 1, 2018 through December 31, 2019. The report includes a summary of data collected through vessel-submitted reporting forms, Commission-funded research to prevent marine invasive species introductions, a review of recent literature on marine invasive species science and technology, and a list of next steps that the Marine Invasive Species Program will take to continue to prevent species introductions in California. The report is available at www.slc.ca.gov.

3. Settled five enforcement actions against vessels in violation of the Marine Invasive Species Act

During the past twelve months, the Commission settled five enforcement actions against vessels that violated the ballast water management provisions of the Marine Invasive Species Act and associated regulations. The enforcement actions were settled for a total of \$61,700, which was deposited into the Marine Invasive Species Control Fund.

4. Initiated prearrival alerts for potential noncompliance for ten vessels, resulting in six vessels changing ballast water management activities to avoid noncompliant discharges

Commission staff regularly maps the ballast water exchange location for all vessels that intend to discharge ballast water and sends alerts to incoming vessels that have not conducted a compliant exchange. During the past twelve months, staff alerted ten vessels that their ballast water management actions would result in noncompliance if the ballast water was discharged into California waters. Six of the vessels used this information to either conduct proper ballast water management actions or decide to retain their ballast water to avoid noncompliant discharges. In all, approximately 38,429 cubic meters of noncompliant ballast water was not discharged into California waters because of these outreach actions.

5. Initiated modified vessel inspections to protect the health and safety of Commission Marine Safety personnel and vessel crews

Commission staff developed and implemented modified vessel inspection procedures to continue inspecting vessels arriving at California ports for compliance with the Marine Invasive Species Act while maintaining the health and safety of Commission staff and vessel crews. These modified procedures included topside (on the vessel but not inside offices or other internal spaces) or dockside (off the vessel) inspections of vessel documentation. Commission staff continued to conduct thorough inspections throughout the COVID-19 pandemic to reduce the risk of species introductions into California waters while also protecting the health of all inspection participants.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Adopt and implement the federal ballast water discharge standards based on authority provided in California Assembly Bill 912 (2019).
2. Amend and implement enforcement regulations to include transparent penalties for violations of biofouling management requirements and ballast water discharge performance standards.

3. Participate in multi-state ballast water inspection training collaboration
4. Participate in collaborative evaluation of a proactive in-water vessel cleaning system
5. Implement a weighted risk assessment to prioritize vessel boarding and inspection based on risk factors contained in pre-arrival reporting forms

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. CPW and our partners have intercepted a record number of mussel fouled boats for 2021. To date we intercepted more than 150 watercraft with confirmed zebra or quagga mussels during the 2021 boating season. More than 75% of these mussel fouled boats originated from Lake Powell.
2. On January 1, 2021 Colorado Parks and Wildlife officially de-listed Green Mountain Reservoir for the suspect presence of quagga mussels. This de-listing makes Colorado completely free of invasive mussels!
3. CPW gained approval from the Aquatic Nuisance Species Task Force for the State of Colorado Aquatic Nuisance Species Management Plan. This plan has been in development since 2004 and sets a clear path forward for aquatic nuisance species management in the state of Colorado.
4. CPW passed legislation to allow for a pilot roadside watercraft inspection & decontamination program at ports of entry. The intent is to implement this pilot program at the Loma Port of Entry on I-70 in the 2022 season and is highly focused on intercepting mussel fouled boats from Lake Powell and other western waters prior to them entering the interior of the state. This roadside program is intended to

supplement Colorado's current ramp based watercraft inspection & decontamination program.

5. CPW filled their vacant Invasive Species Program Manager position with Robert Walters who has been with CPW's invasive species program since 2012. His former Invasive Species Specialist position was backfilled by Travis Beam who has been working with zebra and quagga mussels since 2015.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Successfully implement the pilot roadside watercraft inspection & decontamination at the I-70 port of Entry in Loma, Colorado.
2. Engage with flowing water users in Colorado including anglers, rafters, and professionals. Deploy 30 wader and gear cleaning stations to businesses across the state to help serve as an educational and practical tool for these demographics.
3. Upgrade remaining power washer based decontamination systems to on-demand style decontamination units. CPW leadership has allocated funds to upgrade these systems at more than 20 locations in 2022.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

Name: Blaine L. Parker

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Participated in Columbia River Basin Regional Pike Forum meetings in 2021 and member of Technical Committee.
2. Current member of WRP ExComm and applied to be considered for an additional 2 year appointment.
3. Invasive species presentations to tribal and regional forums regarding species of concern within the Columbia River Basin.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Maintain contact with local and regional collaborators via virtual meetings
2. Continue to provide information regarding regional ANS issues to tribal technical and policy staff
3. Develop long-term plans for the creation of tribal ANS positions within each of the member tribes of the Commission.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting _____ September 21-24, 2021 _____ Virtual Meeting

Name: Michael Stephenson

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Collect veliger samples to support Idaho Department of Agriculture's statewide monitoring program. We sample at Brownlee and CJ Strike reservoirs bi-weekly during the spring and summer.
2. Participate in state (Idaho Invasive Species Council) and regional (Columbia River Basin Team) invasive species meetings.
3. Participate in WRP's eDNA workgroup- join monthly phone calls and read pertinent literature distributed by the group.
4. Attend WRP virtual meeting.
5. Utilize Idaho Power Company's social media platforms (Facebook, Twitter and Instagram) to get out messages about invasive species. In 2021, we sent messages about the dreissenid mussels in the aquarium plants.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Continue participating in Idaho Invasive species Council, Columbia River Basin Team and WRP meetings.
2. Continue to support Idaho's statewide monitoring program for dreissenid mussel veligers.

3. Provide support to Idaho Department of Agriculture regarding invasive species issues. This could include kiosk space at our parks and boat ramps, customer mailers or social media messaging.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

Name: Nic Zurfluh
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1. Watercraft Inspection Station Operation.

Idaho operated 18 watercraft inspection stations located throughout Idaho on major travel corridors into the state as well as 5 roving inspection crews and 4 regional offices providing watercraft inspection and decontamination services. YTD Data (8/31/2021): Total watercraft Inspections: 98,000. Hotwashes (140F) performed: 819. Weeds on boat: 414. Q/Z Fouled watercraft: 44. Idaho continued the expanded nighttime operations at Idaho stations which consisted of 24-hour operations at Cottrell (I-84W) inspection station, 18-hour operation at Cedars I-90 W, Jackpot Hwy 93-N and Malad I-15 N. "All daylight hours" operations at remaining stations. ISDA partners with local entities for inspection station operations through cooperative agreements including an agreement with the Bear Lake Regional Commission to support two Utah stations.

ISDA partners with Law enforcement at both the local county level and state ISP level continue to provide emphasis patrols through cooperative agreements for all watercraft inspection station. These patrols focus on both boater compliance for bypass and inspection station staff safety. ISDA staff have been in communication with law enforcement captains and lieutenants this season to focus patrols during high traffic. FY21 Budget included increased law enforcement from Idaho State Police Trooper to support nighttime operations at Cottrell I-84 W, Cedars I-90 W, Hwy 93 N and Malad I-15 N.

ISDA completed several site improvements projects this season. Projects include updating shed/shelter units, installing electrical utility services, lighting, surface ground work, footprint expansion, electronic message boards and station signage. These projects will continue through fall/winter 2021 in preparation for the upcoming 2022 season.

Watercraft inspection stations and law enforcement support continue to operate in Idaho while taking in account the CDC and Governor's Office recommendations concerning COVID-19. ISDA developed four training options to continue opening stations as scheduled. These options can be customized based on the station cooperator resources:

- (1) In-person training session to review PowerPoint and hands-on material. This option is limited to only 1st year inspectors in small groups and settings where social distancing can be followed.
- (2) Online webinar platform meeting to screen share WIT PowerPoints and knowledge reviews.
- (3) Online website video tutorials and knowledge reviews.

- (4) Printed PowerPoint and knowledge review material where ISDA provides WIT material (binder) and inspector works at own pace to complete the course.

2. Monitoring Operations:

ISDA performs annual early detection monitoring at 80 waterbodies throughout Idaho utilizing over 1,500 plankton tow samples for microscopy analysis. Monitoring occurs during multiple sampling events, bi-monthly for each waterbody throughout the summer season. Samples are shipped overnight same day with a two-week turnaround for lab analysis. Early detection monitoring also includes visual inspection of artificial substrate performed by Idaho Department of Environmental Quality and shoreline walks survey during reservoir low pool. Idaho Rapid Response Plan defines decision making, response, and communication in cases of suspect or positive results.

3. Education/outreach:

ISDA continues to provide education and outreach on Invasive Species throughout various avenues including media new releases, watercraft inspection station staff, brochure material, interactive website and facebook page. Messages used to promote the Idaho invasive species program include “Clean, Drain, Dry” “Know what you grow”, “Don’t let it loose”, and “Knock it off”.

Please visit our webpages at:

www.invasivespecies.idaho.gov

www.invasivespecies.idaho.gov/watercraft-inspection-station/

www.invasivespecies.idaho.gov/edrr-monitoring/

www.invasivespecies.idaho.gov/maps/

4. 2021 Legislation & Funding:

Idaho legislature provided the ongoing \$3.14 M from the General Fund to continue enhanced operations of the state's watercraft inspection stations for FY21. This funding has made it possible to extend inspection station season duration and hours of operation. Funding also includes \$1 M from federal funds to enhance operations or equip watercraft inspection stations. The watercraft inspection budget for FY21 is \$1.4 M from the dedicated Watercraft Inspection Fund, \$3.14 M from the General Fund, and \$1.0 million from federal funds for a total of \$5.54 million. Intent Language: Encourage the use of roving stations where appropriate, the addition of staff on busy weekends, the collection of data regarding the number of watercraft bypassing inspection stations, and procurement of federal funds. Requires the department to report to JFAC, the House Agricultural Affairs Committee, and the Senate Agricultural Affairs Committee, during the legislative session, the results of the data gathering, securement of federal funds, and provide an operational review of the boat inspection stations.

Pacific States Marine Fisheries WRDA Funding agreement (\$1 M) to support watercraft inspection and monitoring efforts. USFWS ANS Task Force Grant for \$89,200 in federal funds for the statewide outreach program. The 2021 BLM AIS grant for \$20,000 to purchase an additional survey watercraft for the Twin Falls regional office. USFS funds continues to be available for the Redfish watercraft inspection station.

5. Idaho Invasive Species Council

Executive Order 2017-05 outlines the purpose of the Council to foster coordinated approaches that support local initiatives for the prevention and control of invasive species. The Council shall meet at least twice annually. Membership shall include: Governor's office, nine state agencies, member of the Idaho Senate, member of the Idaho House, representative of the Idaho Outfitters and Guides. Chaired by the ISDA Director or her designee. Other invitations by the Director. Provide policy level recommendations and planning assistance for combating harmful invasive species infestations throughout the state and preventing the introduction of others that may be potentially harmful. Serve as a nonpartisan forum for identifying and understanding invasive species issues. Identify opportunities for cooperating and coordination between departments, tribal governments, stakeholders, Idaho universities, private and not-for-profit organizations, other states, and the federal government. Recommend steps for implementing

actions proposed in the Strategic Action Plan for Invasive Species. Take measures that will encourage control and prevention of harmful non-native species. Organize and streamline the process for identifying and controlling invasive species among all stakeholders. Consider ways to halt the spread of invasive species as well as finding possible ways to bring existing problems under control.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

Name: Leah Elwell

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Outreach programming – Non motorized boater outreach – One of our targeted outreach programs is to focus on non-motorized boating audiences to promote Clean Drain Dry actions and to educate on non-motorized boater responsibility to stop at watercraft inspection stations. By partnering with national non-motorized boating manufacturers, we have leveraged our ability to promote prevention messaging and actions by boaters. We have been able to expand our partnerships to include recognizable brands with significant reach. Another key aspect of our program has been to implement a targeted effort to include all national permitted river systems to include invasive species information, regulations and encourage Clean Drain Dry. This strategy focuses on traveling boaters to arrive with clean gear and clean again after leaving the permitted river.
2. Outreach programming – Don't Let it Loose – This program has continued to expand across the western states. By working with independent pet stores and state fish and game/department of agriculture agencies, we have been able to promote responsible pet ownership and provide information on the threats that released pets can pose when released to the wild. Currently the program has officially engaged independent pet stores MT, WY, SD, ND, AZ, UT, NV, NM, NE, KS, OK, WA, and ID. Pet store visits to ID, WA and MT in 2021 added new businesses into the effort. We also launched a quarterly online newsletter to pet store owners to better inform on emerging invasive issues and stay better connected. This year we have also been able to make targeted contact at high-risk pet dumping waterbodies in Montana with signage and online media campaigns.
3. Professional services – QAQC – ISAN has been providing annual evaluations of watercraft inspection and decontamination programs with several states and entities for many years. 2021 was no exception. With a huge spike in participation in boating and outdoor recreation this year, watercraft inspection stations continue to be critical in preventing the spread of invasive species. Being able to provide third party review of programming has proven to be an

effective way to improve and monitor WID programs. ISAN provides evaluations for MT, WY, Lake Tahoe and several Pacific Northwest states.

4. Professional services – Coordination and Rapid Response Planning – ISAN has been providing coordination services for the WRP now for 9 years! Serving the WRP has been a humbling and rewarding effort. ISAN is pleased to continue serving the WRP and being part of such a positive entity. We also coordinate for a variety of additional regional entities as well, including the Columbia River Basin Team, and the Columbia Basin Cooperative Weed Management Area. In these two capacities, we play a variety of roles in communication, facilitation and event execution. ISAN has been working closely with Pacific States Marine Fisheries Commission to plan, facilitate and report on dreissenid mussel rapid response exercises for the last several years. This year ISAN, Pacific States Marine Fisheries Commission, and MT Fish, Wildlife & Parks will be conducting a dreissenid based rapid response exercise at Fort Peck, MT.
5. Professional Services – Document development – ISAN has been collaborating with Pacific States Marine Fisheries Commission to revise the Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination. This document will be the fourth revision, and still continues to be a primary source for consistent information on watercraft inspection and decontamination, and dreissenid studies.

Please outline your priorities for the upcoming year. This will help us see who can work together moving forward.

Invasive Species Action Network will continue to expand our partnerships among non-motorized boating manufacturers and the pet business and manufacturing communities that continue to strengthen our outreach programs. Further, coordination with regional and national partners will continue to be a priority for ISAN.

ISAN is headquartered in southwestern Montana in a robust recreational community. There may be new opportunities in the coming year to extend many of our program activities and prevention strategies on invasive species.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

Name: Chris Steffen

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. **Initiated bighead carp research project on Neosho River - Grand Lake system** – The project, funded in conjunction with FWS, aims to better understanding the small, isolated, but reproducing population of bighead carp in the Neosho River – Grand Lake system. The project objectives are to:
 - Identify locations of presence and upstream extent of Bighead Carp population within the Neosho River – Grand Lake system.
 - Collect baseline population demographic information including relative abundance, age and growth, and size structure.
 - Determine broadscale movements within the Neosho River system using otolith microchemistry.
 - Identify locations within the Neosho River – Grand Lake system for containment, removal, and/or eradication efforts.
2. **Initiated feasibility study for an invasive carp acoustic barrier on the Kansas River** – A feasibility study (funded in part by FWS) is being conducted to determine which current barrier technologies could be most practically integrated into the Bowersock Dam to prevent upstream spread of silver and bighead carp during high flow events. KDWP contracted Juniper Environmental and the Kansas Alliance of Wetlands and Streams to conduct the feasibility study and produce a report which includes information on potential barrier options as well as approximate installation and maintenance costs.
3. **Collected eDNA samples to inform silver and bighead carp management efforts** - In collaboration with FWS, KDWP ANS program staff collected eDNA samples for silver and bighead carp in the upper Kansas River basin above the Bowersock Dam. Very few silver or bighead carp records occur above this barrier. Results from this sampling will inform efforts to prevent invasive carp from establishing breeding populations above this location.
4. **Initiated a research project to design a protocol for sampling invasive and native crayfish in Kansas lakes and streams** - This is a joint project between the Fisheries and Ecological Services divisions of Kansas Wildlife and Parks and New Mexico State University. Crayfish are the

second most imperiled group of animals in North America (behind only native mussels). Negative interactions with invasive crayfish species and the diseases they carry threaten to further impact Kansas' crayfish populations. In 2019, the first introduced population of invasive Red Swamp Crayfish were found in Kansas and tested positive for crayfish plague. Invasive Rusty Crayfish have been detected in all Kansas' neighboring states and may already occur in Kansas, but no targeted sampling for their presence has ever been conducted. There is very little existing data on Kansas' crayfish and most crayfish research that has taken place in North America has focused on stream populations, therefore no good protocols exist for sampling crayfish in lakes. This project looks to address these issues by:

- Comparing a suite of common sampling techniques to determine the best sampling methods for crayfish assemblages in Kansas lakes and streams
 - Investigating the effort requirements needed to detect all species of crayfish inhabiting a lake or stream
 - Evaluating habitat-species relationships for crayfish assemblages in lakes and streams
 - Providing management recommendations to Kansas Department of Wildlife and Parks regarding long-term monitoring of crayfish in lakes and streams
5. **Visited approximately 250 locations in response to moss ball concerns** – Within two weeks of notification of potentially zebra mussel infested moss balls being imported into the US, KDWP staff visited about 250 locations in Kansas. Pet stores, water garden stores, plant shops, and other locations suspected to possibly possess these moss balls were visited to educate the locations about ANS and get zebra mussel infested moss balls out of circulation.

Please outline your priorities for the upcoming year. This will help us see who can work together moving forward.

1. Increase capacity of Kansas ANS program – secure increased, stable funding
 - a. Currently seeking funding through the Kansas Water Authority and also possibly implementing an ANS stamp/sticker/fee for boats
2. Establish a WID program within the state of Kansas
 - a. Also seeking to adopt model legislation through state legislature
3. Implement ANS database to archive program efforts, activities, successes, and happenings.

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Intercepted a record number of mussel fouled vessels in 2021. (52 through the end of August).
2. Implemented new measures to improve quality control at watercraft inspection stations.
3. Held the first Watercraft Inspector Appreciation Week to acknowledge the efforts of good inspectors.
4. Implemented a state-wide AIS industry outreach program in coordination with the conservation districts, the Upper Columbia Conservation Commission and other partners to expand delivery of AIS information to the public through local businesses.
5. Continued to build partnerships and increase partner involvement with AIS prevention, early detection and outreach efforts.

Please outline your priorities for the upcoming year. This will help us see who can work together moving forward.

1. Increase partner involvement and participation with AIS prevention, early detection and outreach efforts at the local level.
2. Continue efforts to improve QA/QC at watercraft inspection stations.
3. Expand coordination efforts with Midwestern states and the Great Lakes Panel to identify strategies to address mussel fouled boat transport on recently purchased watercraft.

Name: Kevin Netcher

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Hired a new AIS Coordinator in Nevada
2. Maintained 13 inspection and decontamination stations throughout the state of Nevada
3. No new Quagga infestations
4. Increased efficacy on Northern Pike Removal efforts
5. Jon Sjoberg officially retired after 42 yrs. Chris Crookshanks is the new Chief of Fisheries in Nevada

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Maintain a robust inspection/decontamination program.
2. Northern Pike, Brook Trout, NZMS, Bull Frogs etc. Identify populations – establish database of known AIS occurrences in Nevada
3. Continue to grow in the position and gain a better understanding of AIS programs and control methods. Coordination with all partners

Member Update Reports for the Western Regional Panel Meeting

Name: James Dominguez

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Developed and implemented COVID -19 safe protocols for watercraft inspectors and decontaminators; adjusted schedules sometimes weekly as State directives pertaining to COVID-19 were implemented to reduce the spread of the virus.
2. Watercraft inspections performed in the State of NM increased for the sixth straight year
3. Adapted and changed our Level I & II WID training to a virtual course. Participants were asked to shadow current inspectors prior to and after taking the course in order to fully grasp the concepts presented in class. Class participation and ability to grasp the information was noticeably improved, thus shadowing will continue for future hires.
4. Continued monitoring of New Zealand mudsnail in the San Juan River
5. Started discussions with Bureau of Reclamation in order to develop an RFP for contracted watercraft inspections and decontaminations at Navajo Reservoir and Elephant Butte Reservoir (this is a renewal of an expiring 5 year contract)

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Assisting Bureau of Reclamation with new watercraft inspector contract
2. Working with new Bureau of Reclamation contractor to continue with watercraft inspections and decontaminations at Navajo Reservoir and Elephant Butte Reservoir
3. Work with US Army Corps of Engineers to expand AIS operations at Corps waterbodies

Member Update Reports for the Western Regional Panel Meeting

Name: Ben Holen

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. **Watercraft and equipment inspection-** In 2021, we inspected over 5,000 watercraft and multiple pieces of large industrial equipment.
2. **Prevention Devices-** At a few high use ramps, we worked closely with partners to place CD3 and ILIDS prevention devices. CD3s are self-serve, waterless cleaning devices, that provide boaters with tools to easily clean, drain, dry, watercraft and equipment. ILIDS are remote inspections cameras that encourage boaters to comply with AIS regulations. Additionally, we procured new pressure washer units that allowed us to quickly decontaminate high risk watercraft.
3. **Outreach-**We deployed a new ANS digital marketing campaign that is expected to total over 15 million impressions. We continued our contract with Jason Mitchell outdoors to fund a statewide, multi-media ANS outreach effort. In 2021, we got back to educating the public about ANS through in person public meetings, club get togethers, kids camps, and special events.
4. **Major findings and responses-** We confirmed a new zebra mussel population in Twin Lake. Twin Lake is located 10 miles north of Lake LaMoure, which was designated as a zebra mussel infested water in 2020. In response, a watercraft inspector was assigned to the lone lake access for the rest of the boating season. On surrounding waters, we increased our zebra mussel early detection efforts.
5. **ANS Awareness Week-** Governor Doug Burgum proclaimed May 16-22, 2021, the first North Dakota Aquatic Nuisance Species Awareness Week. We worked with multiple state, federal and private partners to raise public awareness of ANS through press releases, social media, television, radio, and special events.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Continue to expand WID program.
2. Engage local entities and grow ANS community in North Dakota.
3. Expand on ANS early detection efforts.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting

September 21-24, 2021

Virtual Meeting

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Continued conducting containment operations at two western parks (Glen Canyon National Recreation Area, Lake Mead National) in cooperation with state partners (Arizona, Nevada, Utah)
2. Continued conducting prevention programs at seven western parks (Amistad National Recreation Area, Bighorn Canyon National Recreation Area, Curecanti National Recreation Area, Glacier National Park, Grand Teton National Park, Lake Roosevelt National Recreation Area, Yellowstone National Park) in cooperation with state partners and others.
3. Initiated a prevention program at Lake Chelan National Recreation Area in cooperation with Chelan Count and others.
4. Distributed \$1 million in FY21 competitive funds to western parks for quagga / zebra mussel containment and prevention; selected projects to receive FY23 quagga / zebra mussel management funds.
5. Contributed funds to an interagency agreement with U.S. Fish and Wildlife Service, Bureau of Reclamation and Bureau of Land Management that will support watercraft inspection / decontamination training and the watercraft information database. NPS will continue to contribute to this IAA through at least Federal FY24.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Select projects to receive FY24 quagga / zebra mussel competitive funds.
2. Initiate pilot live bait education and outreach project in one or more NPS units (these may or may not be in the Western Region, but it is hope the project will result in a broader effort).
3. Identify and adopt, where possible, measure to improve the efficiency and effectiveness of NPS AIS prevention and containment efforts (e.g., AIS messaging on NPS recreation.gov sites)

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting

September 21-24, 2021

Virtual Meeting

Name: Rick Boatner

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Oregon kept the Ashland Inspection Station on I-5 north bound and Ontario Inspection Station I-84 west bound open the entire year. During the wintertime frame of November 2020-March 2021, the inspection teams inspected 1,524 watercraft and intercepted three with quagga or zebra mussels and 19 vessels with other types of bio-fouling.
2. In 2020 the Watercraft inspection teams inspected 23,043 watercraft and intercepted 12 with quagga or zebra mussels and 264 watercrafts with other types of bio-fouling. The 2020 seasons was an vary interesting year, dealing with COVID and hiring restriction, high winds that blew the inspection trailer off of its foundation, inspection team racing from wildfires and very unhealth air quality that exceed 300 AQI on the EPA scale due to the wildfires.
3. The 2021 season is proving to be just as interesting as 2020 in some ways. Many stations had to be shut down for days at a time or had at the very least reduced hours each day due to very unhealthy air quality, brought on by the California wildfires and drought condition throughout the west, has reduced recreational boating opportunities. As of this report Oregon has inspected 15,817 watercraft and intercepted 6 watercrafts with quagga or zebra mussels and 174 watercrafts with other types of bio-fouling.
4. Attempting various experimental eradication methods for a very large population of Rusty crayfish found in a pond near a headwater stream of the Malheur River basin. The CPU avg. was 24.1 Rusty crayfish per trap, pre chemical treatment. The pond was treated with copper sulfate in the fall of 2019 and post treatment sampled in July of 2020. 2020 CPU = 0.19 rusty crayfish per trap. The pond was treated with a second application of copper sulfate in Sept. 2020 and post treatment sampled in May 2021. 2021 post-treatment CPU = 0.58 rusty crayfish per trap. This summer we will be treating the pond with three applications at two-week intervals in hopes of successfully eradicate the species.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. To be able to open all seasonal inspection stations with full staff and open by the end of April or first of May
2. The Ashland and Ontario station will stay open the entire year with reduced staff during the winter months.
3. Revise state AIS Plan.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

Name: Stephen Phillips

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Title: Senior Program Manager

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. **Watercraft Inspection Training (WIT):** PSMFC contractor D Davis continued watercraft inspection trainings in Fall 2020 and 2021. For the first time, beginning in Spring 2020, we went to virtual Level 1, 2 and 3 trainings. Virtual trainings will continue through the 2021 Calendar year. See the “Training” tab @ <https://www.westernais.org/> for further information.

2. **Outreach and Education:** Produced and distributed “AIS News” - bi-weekly e-newsletter (Robyn Draheim, editor); Lisa Debruckyere rebuilt the website <http://www.westernais.org/>; reprinted, redesigned and distributed “Western States Rack Card”; “Don’t Move a Mussel 2011” “Biofouling Best Practices” “On the Lookout”, and “Threats to the West” to ANS coordinators and others throughout the region. All sport/commercial fishing shows with AIS booth in Seattle, Portland, Boise, and Sacramento were cancelled due to Covid.

3. **WRDA:** In April 2017 The PSMFC entered into a cooperative agreement with the USACE (Walla Walla) to represent the 4 CRB states and administer the “WRDA” watercraft inspection station and monitoring funding. Again in 2021 PSMFC administered the WRDA funding watercraft inspection (MTFWP, ISDA, ODFW and WDFW) and monitoring matching programs (MTFWP, WSU, ODFW, PSU and WDFW). The flowering rush cost-share program was added in 2021.

4. **Coordination/Other:** We hosted meetings of the Columbia River Basin Team of the 100th Meridian Initiative in December and June (virtually) (<https://www.westernais.org/coordination>); the PSMFC dreissenid monitoring database has been transferred to <http://www.westernais.org/monitoring>; a Columbia River Basin Monitoring Forum was held in June and chaired by Tim Counihan, USGS, and Robyn Draheim, PSMFC; planned for September 2021 rapid response exercise led by MTFWP in Fort Peck Reservoir, MT with USACE/USFWS/ISAN and others; led CRB Moss Ball response; after action report here: [Moss Ball Incident Action Report](#) (Columbia River Basin AIS Team, July 2021)

Please outline your priorities for the upcoming year. This will help us see who can work together moving forward.

1. Hold dreissenid rapid response exercise in Montana and meeting of CRB (December, in-person?) and MRB teams (Conf Call, Fall), and PBWG (Spring, in-person).
2. Continue administering Watercraft Inspection Training program (led by Quagga D). Conduct virtual trainings necessary.
3. Administer “WRDA” cost-share watercraft inspection, monitoring, flowering rush and rapid response programs for OR, WA, ID, MT, WY and NV.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting

September 21-24, 2021

Name: Gordon King & Erin Ewald

Organization: Pacific Coast Shellfish Growers Association – Coastal Aquaculture

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Fax:

Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. European Green Crab; coordination Dept. of Fish & Wildlife on trapping and monitoring
2. *Styela Clava*; monitoring population

3. Bamboo worm; monitoring population
4. Recreational shellfish grower education & outreach – certified shellfish seed
5. Working with regulators and academia on effective transfer procedures to prevent spread of AIS

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Increase awareness about EGC throughout industry, improve trapping effectiveness.
2. Expand monitoring program and provide easily accessible dashboard for information sharing
3. Aquaculture BMPs – developing biosecurity plan template for facilities

Member Update Report for the Western Regional Panel Meeting

Annual Meeting

September 21-24, 2021

Virtual Meeting

Name: Monica McGarrity

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Top five AIS activities/accomplishments/priorities for the past year:

1. **Aquatic Invasive Plant Management:** Aquatic invasive plant management continues to be a priority in Texas, with Giant Salvinia and Water Hyacinth remaining the most problematic species, although a high degree of control has been achieved and no water bodies are currently considered impaired for recreational access. The February 2021 freeze resulted in a significant reduction in floating aquatic invasive plant species—giant and common salvinias, water hyacinth, and water lettuce. However, water hyacinth has quickly rebounded from seed. Giant salvinia integrated pest management includes a variety of control methods including salvinia weevil introductions; fortunately, the weevils were able to survive the severe winter weather on some reservoirs. Crested floating heart, first introduced in Texas approximately 6 years ago, has become a significant problem on Caddo Lake, where efforts to treat with ProcellaCOR, the most effective herbicide found to date, are meeting with limited success and additional treatment effort will be needed in 2021-2022.
2. **Riparian Invasive Plant Management:** Watershed-scale riparian plant management in key Native Fish Conservation Areas also continues to be a key priority. Efforts are ongoing to manage saltcedar across the Upper Brazos River watershed in critical habitat for Smalleye and Sharpnose shiners to improve habitat, with nearly 140 private landowners participating and 18,591 acres treated to date. The Healthy Creeks Initiative has partnered with more than 350 private landowners and the Nueces River Authority to treat *Arundo* (*Arundo donax*; aka giant reed) infestations along streams and rivers in the Pedernales, Blanco, Guadalupe, Medina, and Nueces river watersheds of the Texas Hill Country in Central Texas, and recently expanded to include the Llano River and San Felipe Creek.

3. **Invasive Carp Population Assessment:** Invasive silver and bighead carp have been detected in the waters of the Red River Basin, but information regarding this species was limited primarily to isolated angler reports. Texas partnered with Oklahoma and Arkansas and researchers from Auburn University and Texas Tech University to conduct an invasive carp population assessment and collect baseline native fish assemblage data. The project is reaching the end of the first year, with a second year already funded, and the team will be proposing to add an additional year to the project to collect data and conduct otolith microchemistry analysis to evaluate origins. Invasive carp have been detected in Texas tributaries of the Red River, and TPWD will be seeking to implement changes to regulations to prevent the transfer of invasive carp to include these waters in Spring 2022.
4. **Public Outreach Campaign:** Public outreach on aquatic invasive species is a key component of Texas' ANS management strategy and is funded by TPWD and a group of partners. The 'Protect the Lakes You Love' public awareness campaign made hundreds of millions of impressions through billboards; gas station advertising including clean, drain, and dry pump videos; digital pre-roll video ads; Facebook ads and posts; geofenced Pandora radio ads near infested and high-risk lakes; boater registration mailings; emails to registered boaters and marinas; print ads in outlets such as the Outdoor Annual, Texas Parks & Wildlife magazine, and the Marina Association of Texas newsletter. Outreach this year also expanded to include focus on the Never Dump Your Tank campaign and direct, targeted angler outreach to prevent the spread of invasive carp.
5. **Aquatic Invasive Species Research:** Texas recently completed a request for proposals and will be funding four new AIS research projects in fiscal years 2022-2023. Two projects focus on zebra mussels—assessment of drivers of population differences between two Texas lakes and evaluation of rapid, automated veliger detection technology. One project investigates key aspects of the ecology of suckermouth armored catfish, with a focus on enhancing ongoing removal efforts in critical habitat for Fountain Darter and Texas Wildrice. The final project uses remote sensing methods to survey Native Fish Conservation Areas around the state for presence of significant *Arundo donax* infestations with an increasing trend to aid in guiding future management efforts.

Priorities for the upcoming year. The above key activities for the past year will remain the priorities for Texas for the upcoming year, in addition to ongoing zebra mussel early detection monitoring.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Participating in the treatment and producing extension videos on Polydora in US West Coast Oysters
2. Working with Bighead and Silver carp commercial fishermen/Midwest Fish Coop and fish processors to increase fish animal welfare and food quality and shelf life of protein products.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Continue to extend information on the effect of and treatments of polydora in food oysters and oyster spat.
2. Continue to work with commercial fishers and processors to evaluate carp products and increase animal welfare around slaughter.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

Name: Christine Moffitt

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Outreach and communication. Provided seminar to university class on quagga mussel control measures. Provided publications and held virtual meeting discussions with Okanagan and Similkameen Invasive Species Society (OASISS) re Asian Clam infestations. Provided personal written comments in November 2020 on risks and problems with the proposed US EPA rules for ballast and ship management, Vessel Incidental Discharge National Standards (VIDA).
2. Support for regional AIS management needs. Continued participation in the Columbia Basin Team, and Oregon Invasive Species Council. In Oregon provided support and leadership for legislative committee, and outreach.
3. WRP Coastal Committee. Distributed recreational biofouling rack cards. Provided photos of commercial vessels used in most recent rack card effort.
4. Member of graduate faculty. Continued to serve on PhD committee of student modeling HAB in reservoir and lake systems.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Continue outreach and communication work with relevant regional groups as needed.
2. Working on comments to NOAA regarding The Strategic Plan to Enhance Regulatory Efficiency and the Strategic Plan for Federal Aquaculture Research.
3. Working with group of scientists on preparing a publication to call attention to managers and researchers regarding the unnecessary racial references in common names of nuisance species.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

Organization: U.S. Fish and Wildlife Service

Prepared by: Region 2 Regional AIS Coordinator

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USFWS Headquarters: Susan Pasko, U.S. Fish and Wildlife Service ANSTF Executive Secretary
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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. USFWS Branch of Aquatic Invasive Species (BAIS), National Invasive Species Council (NISC), and U.S. Geological Survey (USGS) are working through the ANSTF's Early Detection and Rapid Response Subcommittee to identify advancements in developing a national EDRR framework for aquatic invasive species. Among those being accomplished in FY21 include horizon scanning, identification of invasion hotspots, risk screening, development of genetic markers, considerations in a rapid response fund, and defining Federal roles and responsibilities in rapid response. Additional discussions are planned for the Aquatic Nuisance Species Task Force in December.
2. Decisions were made to commit funding for the following projects addressing priority prevention and early detection and response projects:
 - Expanding Regional Transportation Horizon Scans for IS Prevention
 - Filling Genetic Data Gaps for AIS Early Detection and Monitoring
 - Don't Let it Loose – Manufacturer and Classroom Expansion
 - AIS Early Detection Monitoring and Containment of Chinese Mystery Snail (*Cipangopaludina chinensis*) in the Sacramento River system
 - Preventing the spread of warm-water invasive fish in arid stream ecosystems
 - Floatplane risk analysis: Evaluating the risk of aquatic invasive species introduction and spread
 - Organisms in Trade Global Horizon Scan
 - Predicting Invasion Hotspots

BAIS issued its 5th call for proposals on 18 February 2021. Thus far, eight projects have been selected for funding; which are:

- Moss Ball eDNA Work
- Listing high-risk species as Injurious Wildlife as an effective and cost-effective way to prevent U.S. introductions
- Conducting a gap analysis for invasive species pathways to determine where prevention measures may be lacking.
- Assessing risk communication in the pet trade: An analysis of outreach and engagement efforts
- Updating the Risk Assessment Mapping Program (RAMP) Data and Platform
- Expanding Regional Transportation Horizon Scans For Invasive Species Prevention - Great Basin
- Contaminated Marimo Moss Ball Incident – National-Scope After Action Report

- Early detection, assessment, prevention and control for an invasive Gastropod (New Zealand Mudsail), and develop rapid response plans with broad applicability to tribes and hatcheries nationwide
3. Zebra Mussel Contaminated Moss Balls: In response to the invasion mussel risk associated with moss balls, FAC and Office of Law Enforcement (OLE) continue to meet regularly with USDA and Customs and Border Protection to coordinate and share information. We are working with USGS to develop protocols for screening moss balls for zebra mussels using eDNA. USGS is currently refining the technique to make it easier and quicker for Service Wildlife Inspectors to implement at inspection stations. FAC is working through DOI to obtain water samples from the source of the contaminated moss balls for USGS to validate the sample method.
 4. The Ecological Risk Screening Summary (ERSS) webpage is being updated as part of the Service move to a new content management system. We have taken advantage of this opportunity to consolidate the ERSS information on one webpage, increase transparency about the ERSS process in response to National Aquaculture Association letters, and reflect how ERSS are being used by partners.
 5. In December 2019, USFWS signed an MOU with NAISMA, Wildlife Forever and National Park Service to strengthen invasive species prevention activities on the parties' lands and waters, elevate cooperation, increase public awareness through education, and create clear calls-to-action that empower people to prevent the spread of invasive species. The first project under the MOU was partially funded by BAIS in September of 2020, to assess, evaluate, and pilot installation of cleaning stations and outreach materials at priority water access points on the Black Bayou National Wildlife Refuge Complex in Louisiana. A Refuge Access Guide will also be developed to assist managers in choosing the most appropriate tools and access resources for AIS prevention. . A second project is under development for increased community engagement in aquatic prevention activities surrounding Shiawassee NWR.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Zebra Mussel Contaminated Moss Balls After Action Report: Funding has been secured to draft an after-action report to evaluate the manner and timing of actions that occurred and identify potential strengths, gaps, challenges, and limitations of the response. Multiple scales of activity will be evaluated, including Federal, State, local, and industry responses as well as a review of: potential regulatory hurdles; available decontamination techniques; and internal and external communication methods. This information will be used to develop recommendations around authorities, resources, communications, and logistics to improve measures used for invasive species prevention as well as next steps to increase response preparedness.
2. Multi-species injurious wildlife rule: FAC is planning a set of species for the next proposed rule to amend the injurious wildlife list under 18 USC 42 of the Lacey Act. The proposal for initiating rulemaking for a multispecies injurious wildlife rule under 18 U.S.C. 42 was accepted as one of the prevention funding projects. The rule will be led by BAIS. The species being evaluated are expected to include invasive freshwater fishes, mollusks, and crustaceans. We expect to need assistance from Regional biologists who are experts in these taxa to contribute to the biology sections of the rule. Details are not decided yet and will be forthcoming.
3. Implementation of an Early Detection/Rapid Response Framework within the USFWS Fish and Aquatic Conservation Program: Implementation of a truly comprehensive national EDRR framework, building on the work the FWS is doing in individual basins and with species-specific approaches, will help ensure that invasive species are detected and responded to at the earliest point possible within the invasion

process. The AIS Program proposes to refine this framework during its upcoming virtual Regional AIS Coordinator's National meeting, scheduled for the first week of October 2021.

USFWS Region 1 (WA, OR, ID, HI, Pacific Islands) – Theresa Thom, AIS Coordinator
(theresa_thom@fws.gov)

Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

- Zebra Mussel Contaminated Moss Balls: (<https://www.westernais.org/rapid-response>)
An international invasive dreissenid mussel incident associated with algae “moss balls” occurred in early March 2021. Contaminated products were imported into and distributed across the U.S. and Canada. Efforts associated with this incident included coordinating with federal, state, provincial, and partner entities across North America and within the Columbia River Basin at local, regional, and national levels. The Columbia River Basin Interagency Invasive Species Response Plan (CRB Plan) entities used processes and planning from previous rapid response trainings to navigate this incident. A summary report including lessons learned on the CRB response was completed in July 2021. The Service will fund a national level report in FY22 through a competitive notice of funding opportunity.
- Regional Horizon Scan: Starting in November 2020, the U.S. Fish and Wildlife Service (USFWS) worked with more than twenty federal, State, Tribal, University, local, and industry partners to provide input and expertise for a transportation pathway horizon scanning risk screen for the Pacific Northwest region. Based on that input, the scope of this initial effort focused on identifying potentially harmful submergent and floating aquatic plants that could be introduced to the region via movement of recreational watercraft. Full results of the project will be presented to the Western Region Panel in September 2021 and species-specific risk screening summaries will be posted on the USFWS website for AIS risk screening: (https://www.fws.gov/fisheries/ANS/species_erss.html). The results of this project and related horizon scanning efforts can be used to inform regulatory decision-making, improve training, and refine detection tools and strategies at local, regional, and national levels.
- FWS staff at the Western Washington Fish and Wildlife Conservation Office (WWFWCO) continued a research study with WDFW, King County, and the Muckleshoot Tribe to examine predation by non-native fishes (yellow perch, smallmouth bass) in the Lake Washington basin on ESA listed Chinook Salmon. Accomplishments in FY21 included sampling in Lake Sammamish shortly after Chinook salmon were released from the hatchery and sampling in the Ship Canal (lower end of basin) as Chinook salmon migrate to sea. In the Ship Canal, 27 yellow perch were implanted with acoustic tags to better understand their seasonal movement patterns. WWFWCO staff also assisted with European Green Crab trapping efforts in Grays Harbor and staff serve on the Washington Invasive Species Council.
- The Columbia River Fish and Wildlife Conservation Office (CRFWO) is implementing an ongoing project to stock male brook trout with two Y chromosomes to eradicate a population of nonnative brook trout in Tye Springs above Carson National Fish Hatchery. Project activities in 2021 included removing over 2,400 resident brook trout in anticipation of stocking 2,000 YY male brook trout in late September. Annual fish removal efforts will update population simulation modeling to guide future fish suppression and YY stocking efforts in Tye Springs. For more information about this project see https://www.fws.gov/CRFWCO/publications/Poirier_2020_YYMale_Progress_Report.pdf.

The CRFWCO is conducting annual AIS monitoring at six lower Columbia National Fish hatcheries using eDNA and visual surveys. Past surveys have focused on the early detection of New Zealand mudsnail but in 2021, eDNA samples will test for zebra mussels, quagga mussels, northern pike and common carp. The purpose of this ongoing study is to evaluate the effectiveness of visual surveys and eDNA sampling including the benefits and limitations of each approach as an AIS early detection monitoring tool for Lower Columbia National Fish Hatcheries.

FWS staff based in Idaho participated in the Idaho Invasive Species Council. Staff conducted monthly AIS surveys for invasive species and pathogens at National Fish Hatcheries in the state. Biosecurity training and HACCP training was also provided to FWS, state, and tribal hatchery and field staff in FY21.

The Pacific Islands Fish and Wildlife Office works with the State and partners to identify and strengthen biosecurity actions within the State of Hawaii and Pacific Island Region. The Hawaii Interagency BioSecurity Plan 2017-2027 continues to guide actions on minimizing new ANS introductions. Financial assistance through the ANS State Management Plan and AIS Prevention and Control Projects leverages critical support for State efforts related to Ballast Water and Biofouling, and coordination with other Western Coastal States on pathways of ANS introduction and spread. PIFWO staff continue to provide technical assistance to support these efforts where appropriate, including work on ballast water, VIDA, and biosecurity.

- Invasive Species Program staff also provide coordination for multi-agency Brown treesnake control efforts, regionally and nationally, through the legislatively mandated Brown Treesnake Working Group. The brown treesnake (BTS; *Boiga irregularis*) is an invasive species that has resulted in significant environmental and economic impacts to the U.S. Territory of Guam including extirpation or extinction of nearly all native vertebrates. Numerous Federal and Territorial agencies work together to plan, fund, and implement BTS interdiction, control, and eradication efforts. Final approval and adoption of the 2020 BTS Technical Working Group Strategic Plan occurred on June 30, 2021.

USFWS Region 2 (Southwest Region), Barak Shemai, Regional AIS Coordinator,
barak_shemai@fws.gov

- Region 2 will be awarding approximately \$2.25M in grant awards to address QZAP priorities in western waters.
- Continued execution of an Interagency Agreement with BLM, BOR, NPS, and FWS to collectively support two Quagga/Zebra projects that benefit the greater western US including local governments, states, tribes and other federal agencies. These projects include watercraft inspection training, and watercraft inspection database.
- Implemented the install of the newly developed DNA Tracker, which is real-time eDNA machine, at our Inks Dam National Fish Hatchery in Marble Falls, Texas. This will serve as a demonstration of an early detection tool that can be used in concert with AIS control measures and sport fish production.
- Region 2 and Region 4 awarded a grant to Oklahoma Department of Wildlife and Conservation for an extensive interstate project looking at the Distribution and Population Demographics of Asian Carp.
- Partnered with USGS to develop and implement eDNA monitoring at Arizona hatchery to determine population range of New Zealand Mudsnail. This monitoring will guide a response plan and serve as a future model for EDRR at hatcheries.

USFWS Region 6 (CO, KS, MT, ND, NE, SD, UT, WY) – Joanne Grady, AIS Coordinator
(joanne_grady@fws.gov)

- Leads FWS HACCP Committee. In person courses on hold due to COVID-19.
- Second year of funding for Asian carp in the Missouri River. Coordinating internal programs for three FWS stations and grants to Kansas, Nebraska and South Dakota.
- Participate in DOI Committees for Safeguarding the West Initiative and DOI funding.
- R6 dive team supports state partners in diving for invasive mussels. Dive team diving fall 2021 as part of Missouri River rapid response exercise and to check settlement samplers in Fort Peck Reservoir.
- Represent FWS and provide funding support to the 100th Meridian Initiative Columbia River Basin and Missouri River Basin Teams. 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.
- Project funding and oversight for the following projects:
 - Don't Let it Loose pet store outreach program – Invasive Species Action Network
 - Watercraft Inspection and Decontamination outreach – Pacific States Marine Fisheries Commission
 - Economic impacts of mussels – ground truthing estimates in Kansas and South Dakota – University of Montana In situ quagga detector – EQO
 - Industry AIS outreach and marketing – American Boat and Yacht Council

USFWS Region 7 Aaron Martin, US Fish and Wildlife Service – Alaska Region, Regional Invasive Species Program Coordinator, aaron_e_martin@fws.gov

Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Coordinated with State of Alaska agencies on response actions to the marimo moss ball-zebra mussel incident. The US Fish and Wildlife Service provided outreach support and led collection and disposal efforts of the products from stores statewide.
2. Conducted watercraft inspections at the US/CAN border from the beginning of May to the end of August 2021. No live mussels were detected and no decontaminations were needed. Overall traffic into the US from Canada was significantly reduced in 2021 due to COVID-19 travel restrictions.
3. Collaborated with Alaska Department of Fish and Game and the Kenai Watershed Forum on an eradication project to remove invasive northern pike from the Kenai Wilderness within the Kenai National Wildlife Refuge.
4. Coordinated with statewide partners to conduct early detection surveys for the invasive submerged aquatic plant Elodea in southcentral, southwestern, and interior Alaska.
5. Collaborated with the University of Alaska and State of Alaska agencies on vector analyses to understand in-state watercraft movements and the number and level of risk of watercraft entering Alaska via marine pathways (e.g., ferries, barges).

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Collaborate with the State of Alaska and other statewide partners on completing an invasive species strategic plan and renew the partnerships memorandum of understanding.

2. Finalizing AIS ranking and habitat suitability modeling project with USGS, Alaska Department of Fish and Game, and the University of Alaska.
3. Conduct watercraft inspections at the US/CAN border from the beginning of May to the end of August 2022.
4. Finalize graduate student research project assessing the physiological limitations (e.g., jump height, swimming velocity) in collaboration with Alaska Department of Fish and Game, University of Alaska, and the USFWS's Bozeman Fish Technology Center.
5. Collaborate on the development of Alaska AIS data portal and expansion of capacity to the Alaska Exotic Plant Information Clearinghouse.

USFWS Region 8, Cesar C. Blanco, Ph.D., California Great Basin (CA-GB) Region Regional Aquatic Invasive Species Coordinator, cesar_blanco@fws.gov

Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Zebra/Quagga prevention in the Tahoe Basin and containment where present in the CA-GB
2. EDRR of Large-Scale Loach in the San Joaquin River Basin
3. EDRR of Chinese Mystery Snail in the Sacramento River Basin
4. EDRR of *Caulerpa* in Newport Bay and proximate Seal Beach NWR
5. Alligator weed coordination for containment purposes

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Zebra/Quagga prevention in the Tahoe Basin and containment where present in the CA-GB
2. EDRR of Large-Scale Loach in the San Joaquin River Basin
3. EDRR of Chinese Mystery Snail in the Sacramento River Basin
4. EDRR of *Caulerpa* in Newport Bay and proximate Seal Beach NWR
5. Alligator weed coordination for containment purposes
6. CA-GB Regional Transportation Horizon Scans For Invasive Species Prevention

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting

September 21-24, 2021

Virtual Meeting

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

- 1. Integration of environmental DNA (eDNA) data into the USGS Nonindigenous Aquatic Species database.** Environmental DNA (eDNA) has proved a valuable technique for performing high sensitivity monitoring efforts of cryptic species by testing water, soil, or even air samples for DNA. This project will allow researchers to incorporate their environmental DNA (eDNA) data into the USGS Nonindigenous Aquatic Species (NAS) database. Already heavily relied upon by managers for biosurveillance via visual detection of aquatic invasive species (AIS), the addition of eDNA data to NAS will advance research and decision-making by becoming a centralized source for AIS data. By working with the eDNA community to gain consensus on standards, controls, and best practices to format the new eDNA Application, we are facilitating high-quality data submission to maintain manager confidence. The NAS Database will start integrating eDNA data alongside the traditional specimen records beginning in January 2022.
- 2. Global horizon scan for high-risk organisms in trade.** USGS, with support from USFWS, is leading a global horizon scan to help identify exotic terrestrial and aquatic vertebrate species within the Organisms in Trade (OIT) pathway at greatest risk of entering the contiguous U.S., Alaska, Hawaii, and island territories, establishing populations, and becoming invasive. Nineteen thousand OIT have been screened to categorize around 700 species that could be risky in the U.S. By starting with a larger pool of species, there is a great opportunity to recognize new species with no known invasion history. Through a rapid screening process, our taxonomic experts are currently conducting the horizon scan to identify which of those 700 species could be invasive both nationally and regionally in the U.S. At the completion of the horizon scan in November of 2021, the team will deliver watch lists for the highest risk species for each U.S. region and territory.
- 3. Dreissenid invasion risk, Missouri River Basin.** The USGS Western Fisheries Research Center, Wetlands and Aquatic Research Center (Nonindigenous Aquatic Species Database), Grand Canyon Research and Monitoring Center, and the University of California – Davis are collaborating to develop a tool that integrates dreissenid mussel risk assessment and bioeconomic models for the Missouri River Basin. The tool will allow the allocation of Early Detection and Rapid Response financial resources to be placed in a decision framework that considers the biological requirements of invasive mussels and socioeconomic values. The project leverages a collaborative multi-year effort to assess dreissenid mussel invasion risk in the Columbia River Basin.

4. **Dreissenid invasion risk, Columbia River Basin and Greater Yellowstone.** Regional (Columbia River Basin and Greater Yellowstone Area) risk assessment data visualization for dreissenid mussel establishment risk based on water chemistry
 - <https://aiswaterquality.net/aiswq/index.html#crb>
 - <https://aiswaterquality.net/aiswq/index.html#gye>
5. **Structured decision making tool for eDNA detections of AIS.** USGS, with support from Utah DWR, USBR, and Central Utah Water Conservancy District, has developed a structured decision making approach to evaluate response reactions to eDNA detections of dreissenid mussels in a Utah reservoir.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Development of a structured decision making general framework and Shiny app that can be used to evaluate response reactions to eDNA detections for most AIS in most water body types.
2. Review and update of dreissenid mussel research priorities, as it relates to QZAP (i.e., the West) and the Invasive Mussel Collaborative (i.e., Great Lakes Region).
3. Conduct research to improve the biosurveillance of Invasive Species in the western U.S and scaling up robotic biosurveillance for dreissenid mussels.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Construction, installation, and operation of the nation's first hot water decontamination dip tank for watercraft. This pilot program was implemented at the Stateline launch ramp at Lake Powell at the beginning of May 2021. Operation continued throughout the summer, allowing UDWR staff to decontaminate complex watercraft in a fraction of the time required by other decontamination methods. Efforts have already begun to expand this program to other locations around the state in 2022.
2. Development and rollout of the Port Passport camera program, utilizing high-speed cameras at the Wahweap launch ramp at Lake Powell to auto-capture bow numbers of boats launched and retrieved at that ramp. Records are generated 24/7, allowing for the recording of boats retrieved outside of watercraft inspection hours. All records are input into the regional WID database so they can be accessed by other users of the database. UDWR has received funding to expand this program statewide in 2022.
3. Completion of an eDNA Structured Decision-Making exercise with USGS, BOR, and Central Utah Water Conservancy District to determine an appropriate response to multiple eDNA detections at Jordanelle Reservoir based on mutual identification of objectives, prioritization and weighting of those objectives, and risk/benefit analysis. While specific in scope to one reservoir, UDWR believes this is an appropriate and suitable way to engage stakeholders at other waterbodies to further expand eDNA analysis in early detection monitoring.
4. Establishment of a new mandatory watercraft inspection station on Highway 191 north of Vernal that allows for more effective and efficient interdiction of boats destined for Flaming Gorge Reservoir, Steinaker Reservoir, and Red Fleet Reservoir.
5. Purchase of land outside of Kanab, Utah, for future establishment of a mandatory watercraft inspection station in 2022 to allow for additional capacity and capability to interdict boats leaving Lake Powell and boats being transported into Utah from infested regions in Arizona.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Expansion of hot water decontamination dip tank program to 1-2 additional locations in Utah.
2. Expansion of an automated data collection/camera system to other high priority locations around Utah outside of Lake Powell.
3. Complete construction and site improvements at new mandatory watercraft inspection station in Kanab and begin operations there in spring 2022.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting September 21-24, 2021 Virtual Meeting

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. Received \$6 million in new AIS funding from state legislature to enhance zebra/quagga mussel early detection monitoring, watercraft pathway, European green crab, Northern pike, ballast water, and pet/aquarium industry pathway management.
2. Zebra/Quagga mussel early detection monitoring and watercraft check station operations. Adding new monitoring sites and new watercraft check stations as a result of new legislative funding and USBOR grants.
3. European green crab management. Working on extensive Salish Sea (interior marine waters) and coastal trapping actions with broad spectrum of state, federal, Canadian, tribal and local stakeholders. Successful to date in preventing EGC from becoming established in Salish Sea.
4. Northern Pike suppression. Regional offices working closely with tribes to suppress pike populations and prevent them from establishing in anadromous part of Columbia River system.
5. Vessel Incidental Discharge Act (VIDA) – part of successful regional opposition to EPA national discharge standards rulemaking.
6. Marimo Moss Ball incident rapid response. Provided key leadership in early stages of verifying Seattle store with zebra mussels in aquarium “moss balls” (freshwater algae species) and implementing regional rapid response actions.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Continued focus on top AIS including zebra/quagga mussels, European green crabs and Northern pike management.
2. Continued work to establish reasonable national discharge standards under VIDA.
3. Developing more outreach on internal agency and external decontamination training.

Member Update Reports for the Western Regional Panel Meeting

Annual Meeting

September 21-24, 2021

Virtual Meeting

Name: Josh Leonard

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Please provide a description of your top five AIS activities/accomplishments/priorities for the past year:

1. In 2021, watercraft check stations began operation in late March and will remain open into October at fifteen permanent check stations at port of entry, rest area, and other locations to intercept watercraft entering the state. Roving crews focused on inspections at major waters throughout the state to contact resident boaters. Through the end of July, a total of 48,882 inspections have been conducted, an increase of 15% thus far compared to the increase we witnessed in 2020. Of these, 3,005 were high risk watercraft and 703 were decontaminated for water onboard or suspect AIS, already surpassing 2020 decontamination totals by the end of July. Thus far, thirty-eight boats have been intercepted with mussels attached or in compartments, two of which were harboring live mussels. A boat last used in Texas destined for Washington State was quarantined in Laramie, WY after decontamination to ensure mussels were no longer viable. Through the end of July, Wyoming has already intercepted twice as many mussels infested boats compared to 2020 totals.
2. The Wyoming Game and Fish Department (WGFD) responded to the moss ball incident quickly by coordinating with the WY Dept. of Agriculture to implement the first quarantine of the product into Wyoming. In addition to supporting the federal investigation, Wyoming is still monitoring water treatment facilities for the presence of mussel DNA in response to the likelihood veligers were introduced to these systems in cities where mussels were found in stores. This effort would not have been possible without the coordination with WY Dept. of Health by tapping into their already existing infrastructure to monitor water treatment facilities for COVID-19 spikes. Thus far all samples have come back negative for mussel DNA.
3. This year the WGFD completed an intensive two year project on developing water specific rapid response plans for the 23 highest at risk waters for mussel invasion. For more information and access to these plans, please visit: <https://wgfd.wyo.gov/Fishing-and-Boating/Aquatic-Invasive-Species-Prevention/AIS-Rapid-Response-Plans>.

4. In 2021, the WGFD hired an additional FTE AIS Specialist located in our Cheyenne Headquarters, to help oversee operations at both of our I-25 and I-80 interstate check stations. Wyoming now has five FTE employees (1 AIS Coordinator and 4 AIS Specialists), four contract AIS Specialists, and 51 seasonal AIS technicians.
5. The WGFD is now wrapping up regulation changes to further protect our state from AIS in regards to Private Hatchery importation, which will be implemented in 2022. The AIS program has now adopted the AIS Hatchery Inspection obligations and will begin their sampling of hatcheries in the coming weeks.

Please outline your priorities for the upcoming year. This will help identify coordination opportunities moving forward.

1. Continue efforts to move towards live inspections with mobile printers for receipts. The goal for WGFD is to have 75% of our operations using tablets and Bluetooth printers by the middle of the 2022 boating season.
2. The WGFD is currently processing a request for proposals to move a portion of their AIS Inspector training to an online at-home format, similar to most Hunter Education Classes, so inspectors can complete this at their leisure and attend an in-person field day to gain the experience on proper inspection and decontamination protocols.
3. The WGFD will be transitioning some office decontamination units to on-demand units, to help deliver more reliable temperatures when performing decontaminations.
4. Continue ongoing coordination efforts with PSMFC to acquire WRDA funds to help fund expansion efforts and upgrades to existing infrastructure at check stations.