

Western Regional Panel Member Reports 2022

WRP Annual Meeting
September 21st and 22nd, 2022
Anchorage, AK

Federal Member Reports:

Organization: US Fish and Wildlife Service, Headquarters

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Zebra Mussel Contaminated Moss Balls: In response to the invasive mussel risk associated with moss balls, US Fish and Wildlife Service's Fish and Aquatic Conservation (FAC) program, and the Office of Law Enforcement (OLE) continue to meet regularly with the U.S. Department of Agriculture and Customs and Border Protection to coordinate and share information. We are working with the U.S. Geological Survey to develop and validate protocols for screening moss balls for zebra mussels using eDNA and train Wildlife Inspectors in use of the technique. Funding has been awarded to Oregon State University 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.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. ***Aquatic Nuisance Species Task Force.*** The ANS Task Force held a virtual meeting on May 24-26, 2021. The meeting included several informational sessions, including informational updates from the U.S. Geological Survey, Department of the Interior, National Invasive Species Council, U.S. Army Corps of Engineers, and the five standing subcommittees of the ANS Task Force. Also on the agenda were presentations regarding ballast water management, eCommerce, climate change, range expansion of Prussian carp, and the figurative language used for invasive species communications. The final day of the meeting focused on recent successes and emerging issues from the regional panels. During the meeting the ANS Task Force members unanimously approved the

revised Minnesota Aquatic Nuisance Species Management Plan. There were several action items identified during the meeting including developing a webinar recording on the National Early Detection Rapid Response Framework that can be shared with the regional panels and other interested audiences, distributing the Framework for Determining the Need for an Aquatic Invasive Species Control and Management Plan for comment, planning a session on stony coral tissue loss disease for the next ANS Task Force meeting, and facilitating discussions on wildland fire operations and the evolution of boat design within the Prevention subcommittee. The next ANS Task Force is being planned for January 11-12, 2022 as an in-person meeting, with a virtual option.

2. ***Salamander rule.*** The Service's Branch of Aquatic Species (BAIS) is finalizing the 2016 Interim rule that listed 20 genera of salamanders as injurious due to the risk they carry the lethal fungus *Batrachochytrium salamandrivorans* (or Bsal). The final rule will affirm the 20 genera as justified for listing. In the same document, BAIS plans to publish a second interim rule that would add more genera to the list of injurious amphibians based on more recent independent studies. Please note that these plans are subject to change before publication in the Federal Register. We plan to have the rule package in surname to the Director's Office later this year, followed by review by DOI and OMB and publication next year.
3. ***American Rescue Plan Act.*** In the American Rescue Plan Act (ARPA), Congress instructed the Service to strengthen inspections and interdictions of risky animal imports and to use title 18 of the Lacey Act to prohibit the importation of species that pose a risk to human health. It also appropriated \$10 million to leverage this authority as an important step in preventing the next pandemic. FAC received \$6.5M of this funding. FAC funded the Smithsonian Institution to conduct a global horizon scan and risk analysis of foreign wildlife species that may carry zoonotic pathogens and parasites. Smithsonian will focus on zoonoses not yet found in the United States, and evaluate both risk and management options to mitigate risk. We expect to obtain a prioritized list of host wild mammals and wild birds in calendar year 2022, and a prioritized list of host fishes, mollusks, crustaceans, reptiles, and amphibians in calendar year 2023. Because title 18 does not authorize USFWS to list pathogens and parasites as injurious, these prioritized lists will serve as the basis for listing carrier species as injurious wildlife, thus prohibiting their importation, and reducing the risk of a future pandemic.
4. ***Climate Change Action Plan.*** The USFWS released its [Climate Change Action Program Framework in 2021](#), and recently updated [056 FW 1: Climate Change Action](#). A team of FAC staff are drafting a step-down of the Framework specific to FAC. The team is focusing on activities that can be accomplished within headquarters.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. **Prevention Request for Proposals.** FAC has completed its annual call for AIS Prevention proposals. This year, projects oriented towards implementing a national Early Detection and Rapid Response (EDRR) framework were a high priority for this funding. The following 10 projects were chosen for funding this year:

- Expanding regional horizon scans for aquatic invasive species prevention (NE and Upper Miss.)
- Filling genetic data gaps for AIS early detection and monitoring
- Continuing a sea grant national federal partnership liaison to advance ANS Task Force outreach objectives (over 2 years)
- Enhancing HACCP (Hazard Analysis and Critical Control Point) training and prevention resources for Service staff and partners
- Developing sustainable risk screening capacity within Fish and Aquatic Conservation
- European green crab early detection and rapid response in Alaska - a proactive approach
- Collaboration with the pet industry to prevent the release of invasive species: creating standard aquatic invasive species training and outreach materials for pet retailers
- Lake Champlain EDRR (Early Detection Rapid Response) framework
- Economic return on investment of policies to address aquatic invasive species infestations
- Preventing the establishment of Arapaima in North America

Using appropriations to the Infrastructure Investment and Jobs Act (also referred to as the Bipartisan Infrastructure Law), the Service, in collaboration with other Department of the Interior bureaus, requested proposals that advance strategic, ecologically-based, landscape-level prevention measures. Landscape-level approaches are those that bring together multiple geographies, sectors, and stakeholders to protect and conserve natural resources on a larger scale. The following projects were selected for funding:

- An Action Plan to Mitigate the Risks of Aquatic Invasive Species Trade and Transport through Commerce (Conservation Collaborations LLC; co-led with Creative Resource Strategies LLC and the National Sea Grant Law Center)
- Preventing the Introduction and Spread of Invasive Species through NAISMA's Strategic International Prevention Programs (North American Invasive Species Management Association)
- Rapid Deployment of Watercraft Cleaning Stations (wildlife Forever)
- Strengthening the California Islands Biosecurity program to leverage outcomes for biosecurity on US Department of the Interior Islands (The Nature Conservancy)

2. **Early Detection/Rapid Response Framework.** Ops Plan : BAIS continues to move forward with the development of its Early Detection and Rapid Response (EDRR)

Framework and Operational Plan. Earlier this year BAIS staff held two separate virtual meetings with the Regional AIS Coordinators as part of the development process.

3. **Rapid Response Fund:** With the anticipation of funding through either appropriations or BIL funding, FAC is proceeding to develop a Rapid Response Fund Administration and Decision-making Document under the auspices of the Aquatic Nuisance Species Task Force.
4. **Molecular Lab Network:** A laboratory network will be needed to process molecular surveillance data from an EDRR framework. DOI molecular labs interested in supporting the EDRR Framework were asked to complete a questionnaire to inventorying DOI capability, capacity, and funding levels. Input was received from FAC (8 labs), USGS (9 labs), and Bureau of Reclamation (2 labs). A plan for how a molecular network becomes operational is being initiated.

Organization: US Fish and Wildlife Service, Pacific Region

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

In FY22, certified trainers from the U.S. Fish and Wildlife Service and the National Park Service from multiple regions provided Hazard Analysis Critical Control Point (HACCP) certification courses to partner agencies and staff across the country. In addition to in-person training, the certification course was also offered as an online course. As curriculum is updated in FY23, be on the lookout for HACCP-related training opportunities to prevent and mitigate the risk of unintentionally spreading invasive species.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. 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 2022 included removing over 1,800 resident brook trout followed by stocking approximately 2,000 PIT tagged YY male brook trout in Tye Springs on August 16th. We use population demographic information collected during annual fish removal efforts to revise a population simulation model that is used 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.

2. The CRFWCO is conducting annual AIS monitoring at six lower Columbia National Fish hatcheries using eDNA and visual surveys. Although the primary focus of visual surveys is New Zealand mudsnail, all eDNA samples are tested for New Zealand mudsnail, 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.
3. 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, Largemouth Bass, Smallmouth Bass, Black Crappie, and Rock Bass) on ESA listed Chinook salmon in the Lake Washington Basin. In addition to examining predation, we are continuing to monitor the movements of Yellow Perch that were tagged last year. WWFWCO staff also assisted with European Green Crab trapping efforts in Grays Harbor and staff serve on the Washington Invasive Species Council.
4. The Pacific Islands Fish and Wildlife Office (PIFWO) continues to work with the State of Hawaii and non-governmental partners to identify and strengthen biosecurity actions within the State of Hawaii and Pacific Island Region. PIFWO staff have been working with partners on early detection and rapid response (EDRR) planning for the potential introduction of stony coral tissue loss disease (SCTLD) into the Pacific region.
5. PIFWO staff coordinate 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. In FY22, the Honolulu-based BTS position led a small group of BTS TWG agency representatives in developing Key Performance Indicators (KPIs) from the goals, objectives and key actions in the 2020-2025 BTS TWG Strategic Plan. PIFWO staff are also representing the Department of Interior on a recently formed Steering Committee to plan and implement eradication activities for the incipient population of BTS on Islan Dãno' (Cocos Island) to protect the endangered native Ko'ko birds (Guam Rail) and Slevin's skinks (*Emoia slevini*), as well as other native skinks, seabirds, and Micronesian Starling populations.
6. Service 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 FY22.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Provide Hazard Analysis Critical Control Point (HACCP) certification courses to partner agencies and staff across the country. The certification course will be offered in-person and online. The goal: to prevent and mitigate the risk of unintentionally spreading invasive species.
2. Work with tribes, states, and other partners to implement a Nationally Coordinated Early Detection and Rapid Response Framework for aquatic invasive species and pathways.
3. Work with entities responsible for key pathways (and associated vectors) to proactively reduce the risk of introduction of invasive species.

Organization: US Fish and Wildlife Service, Southwest Region

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Region 2 will be awarding approximately \$2.25M in grant awards to address QZAP 2.0 priorities in western waters. These projects have been selected by a team of AIS Specialist from multiple federal agencies. Additionally, Region 2 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.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. The Arizona Fish and Wildlife Conservation Office hired 21 seasonal staff, including 11 local tribal members, to assist the White Mountain Apache Tribe Game and Fish Department (WMATGFD) with Apache Trout recovery efforts during 2022. Nonnative trout removal is a significant focus of recovery work and 5,532 Brook Trout and 315 Brown Trout have been removed so far this season during Apache Trout monitoring and nonnative trout removal surveys on tribal lands.
2. Region 2 also worked with partners (WMATGFD and U.S. Bureau of Reclamation) to install two permeable barriers to aid Brook Trout removal from upper Thompson Creek

and upper West Fork Black River. Although both barriers were damaged during high stream and debris flows associated with monsoon rains, we think these devices will be useful (following modifications) for future AIS management projects.

3. Region New Mexico Fish and Conservation Office assists the Mescalero Apache Tribe with mechanical removal of Common Carp from Mescalero Lake. In 2022, we initiated discussions to establish a workgroup of interested parties including the Mescalero Apache Tribe's Conservation and Natural Resources departments and the Bureau of Indian Affairs. The goal of the workgroup is to discuss the Common Carp issue, identify management goals (i.e., suppression vs eradication), and develop a long-term Common Carp removal workplan including strategies, implementation schedule, cost estimates, and agency responsibilities. Additionally, we researched and evaluated potential capture gears including electrofishing, gill nets, fyke nets and hoop nets as well as the use of baits to increase captures. In 2022, we implemented a mark-recapture study to estimate Carp abundance and biomass.
4. Region AZFWCO staff continued monitoring the New Zealand Mud Snail population adjacent to the Alchesay National Fish Hatchery and developing control and risk-reduction options. Monitoring included eDNA and quantitative surveys of the population.
5. Abundance and Distribution of Early Life Stages of Asian Carp in the Red River Basin: Region OKFWCO's commitment to assessing spawning and recruitment of invasive carp in FY2022 continued to include conducting ichthyoplankton tows and light trapping for larval fish in the Red River mainstem and tributaries, such as the Kiamichi River, Choctaw Creek, and Muddy Boggy Creek. Larval fish were sampled May–August, and larval fish are currently being sorted, identified, and genetically analyzed for species confirmation. The OKFWCO has expanded its working relationships to aid in rapid detection and positive identification of larval fish. Recently the OKFWCO has collaborated with the Southwestern Native Aquatic Resources and Recovery Center, the Whitney Genetics Lab and the Missouri State University. These partnerships have agreed to aid the OKFWCO with genetic confirmation of eggs or larval fishes, ethanol screening to determine whether carp DNA is present in the sample and, additional hands to sort through samples to locate and identify eggs and larval fish.
6. To date no larval bigheaded carp have been detected and efforts have continued and collection sites continue to extended further downstream of the Denison and Hugo Dams

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward

1. Early Detection of invasive carp with Acoustic Telemetry on Arkansas River.
2. Distribution and Population Demographics on Invasive Carp on the Red River
3. Continue to provide HACCP trainings across the country to assist internal and external partners with a prevention planning process.

4. Work with our Fish Technology Centers and Hatcheries to explore the application of the eDNA tracker (real-time eDNA machine) and develop/execute research examining the effectiveness of control measures for QZ.
5. Continue assisting with the implementation of the national EDRR framework.

Organization: US Fish and Wildlife Service, Mountain-Prairie Region

Name: JoAnne Grady- USFWS Mountain-Prairie Region (Region 6)

Title: Regional Aquatic Invasive Species Coordinator

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Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. 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.
2. Participate in DOI Committees for Safeguarding the West Initiative and DOI funding.
3. 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.
4. 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.
5. 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

Organization: US Fish and Wildlife Service, Alaska Region

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Taylor Cabbage, a U.S. Fish and Wildlife Service (Service) sponsored graduate student at the University of Alaska Fairbanks, recently completed a project assessing the physiological limitations of Northern Pike. The project used leaping experiments to determine how physical (abiotic) factors and individual biological traits influenced the maximum leaping ability of Northern Pike and developed a model to characterize these relationships. Leaping experiments proved that Northern Pike could ascend barrier heights four-times greater than previously assumed; pool depth, body size, and standardized growth rate also influenced individual leap success. Northern Pike leaping ability was significantly lower than salmonids. However, model predictions suggest that faster growth rates of invasive Northern Pike in Alaska may marginally enhance their leaping ability, and barriers should be tested in-situ before implementation. Publications are in development.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. The Service led watercraft inspection and decontamination at the Alcan Port of Entry (POE) with Canada from May to the end of August 2022. Compared to the station's inaugural season in 2021, watercraft traffic tripled in 2022. The 2021 season was largely overshadowed by COVID-19 travel restrictions on land traffic transiting from Canada into the United States. The 2022 season had a total of 676 watercraft or an average of 6.56 watercraft per day. The weekly average amount of watercraft fluctuated throughout the season with June and early July, containing the highest averages of watercraft. The overall distribution of risk level remained heavily in the low category with 93% low risk, 6% medium risk, and 1% high risk. One infested pontoon boat did come through the Alcan POE with invasive mussels attached to the underside of the engine and hull; the vessel was decontaminated on site.
2. The Service finished a research project and publication (in-press) with the University of Alaska that assessed the risk of freshwater invasive species introductions into Alaska through marine transporters (e.g., ferries and barges) and land-based transport. We estimate at least 74 motorized watercraft enter Alaska annually from Dreissenid-infested regions. These watercraft are entering Alaska through the road system, marine highway system, and via marine barge traffic. Our conclusions point toward the need for a collaborative response among state, federal, tribal, and local agencies and watercraft owners to devise effective means to prevent new introductions. Response opportunities include inspections and decontamination at critical control points, and an increased outreach and education campaign for watercraft users. In the publication we discuss implications, costs, and the long-term sustainability of such a program. Thank you to the technical support from the Alaska Department of Fish and Game.
3. Elodea is the first submerged aquatic invasive plant in Alaska. The Service provides technical and financial support to state and tribal agencies to increase early detection

and rapid response for Elodea through Alaska. In 2022, the Service conducted Elodea early detection surveys in 72 waterbodies on and off Service lands. We also neared completing an eradication effort an Elodea infestation on the Kenai National Wildlife Refuge that was found in 2019; no Elodea was found in 2022.

4. The Alaska Region's Invasive Species Outreach and Education Coordinator provided support or lead efforts with the Western Regional Panel, Aquatic Nuisance Species Task Force, and the Alaska Invasive Species Partnership. We published three medium articles, directly interacted with over 1,000 people during 12 outreach events and developed and sponsored summerlong public service announcements on local radios about Clean Drain Dry and Play Clean Go principles.
5. The Service is working with the State of Alaska, NOAA, and Alaska Native organizations, to plan a European Green Crab (EGC) survey that will be conducted in 2023. The Service has secured ~\$70,000 to fund a facilitator for the drill. We completed EGC surveys in three priority locations in Southwestern Alaska and provided resources to the Metlakatla Indian Community to help them increase their early detection surveys in the area that EGC were found in Alaska for the first time in July 2022.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Collaborate with the State of Alaska and University of Alaska system to conduct a multi-year economic risk assessment of Dreissenid mussel establishment to salmon fisheries in Southcentral Alaska.
2. Collaborate with partners to enhance early detection and outreach efforts in Southeast Alaska for European Green Crabs. Will also be assessing/collating information that have help prioritize these efforts and inform us on potential impacts on sea otters and sea ducks.
3. Continue watercraft inspections at the US/CAN Port of Entry.
4. Continue Elodea surveys through Alaska
5. Verify Dreissenid mussel eDNA assays and cross-reference with native mussel specimen through the Service's Conservation Genetics Laboratory.

Organization: US Fish and Wildlife Service, California-Great Basin Region

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

The USFWS Pacific Southwest Region received \$3.4 million in BIL funding to enhance its efforts towards prevention, EDRR and control/eradication of AIS in Lake Tahoe.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

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

Question 3: Outline your priorities for the upcoming year (up to 5). 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. Phase II - EDRR of Large-Scale Loach in the San Joaquin River Basin
3. EDRR of *Caulerpa* in Newport Bay and proximate Seal Beach NWR continues
4. Alligator weed coordination for containment purposes
5. CA-GB Regional Transportation Horizon Scan Report submitted to R8 stakeholders

Organization: US Army Corps of Engineers-NWD-NWW

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

NWW and USACE HQ is working with ERDC to assess and develop eRNA detection to assist in the detection and spread prevention of invasive species, currently specific to zebra and quagga mussels. Status of research and technology development is showing promise and resulting in potential further applications of this technology.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Walla Walla District treated four large monoculture stands (range from 1.5 to 4.25 acres) of Flowering Rush locations in McNary Reservoir with ERDC assistance and funding.
2. Maintained APC Cost shares for Watercraft Inspection station and Monitoring for 2022 for protection of the CRB.
3. Still finalizing CRB cost-share expansion and working to finalize Upper Missouri, South Platte, and Upper Colorado (in-progress)
4. Flowering Rush cost share with participating states is in place and preparing for CY23 actions within this program.
5. Harmful Algal Blooms (HABs) ERDC research on maintenance and control techniques in progress nationwide. With this research USACE-ERDC hopes to provide and develop management/solution alternatives to this developing issue.

Question 3: Outline your priorities for the upcoming year (up to 5). 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. Further development of Flowering Rush control measures in the sensitive and critical environment of the Northwest.
4. Further expand Walla Walla District and potential Northwestern Division of USACE in aquatic invasive species management through ERDC research and control assistance.

Organization: US Bureau of Reclamation

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Reclamation's primary focus for the past year has been the implementation of the Fiscal Year 2022 Mussels Spend Plan. Throughout 2022 Reclamation provided approximately \$2.6 million to support various mussel management activities across the West including support for watercraft inspection and decontamination in Colorado, Montana, Nevada, North Dakota, South Dakota, Utah, Washington, and Wyoming.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Reclamation's Science and Technology Program is currently funding 24 invasive species research projects, 21 of which are projects focused on invasive mussels. Eight mussel research projects are concluding this year, and 2 mussel research proposals were submitted for funding consideration in FY23. The titles of the 8 concluding projects are listed below.
 - Development and field research on next generation coatings for mussel mitigation on Infrastructure.
 - Alternate control strategy for dreissenids using electrical methods
 - Eradication of invasive quagga and zebra mussels using engineered disseminated neoplasia (continuing)
 - Development of field sampling protocol standards for environmental DNA (eDNA) monitoring of dreissenid mussels
 - Survey and evaluation of dive and aquatic field gear decontamination protocols for preventing the spread of quagga/zebra mussels and other aquatic invasive species
 - Innovative methods for invasive mussel detection (continuing)
 - Evaluation of preservation methods for veliger detection field samples
 - Analysis of environmental DNA from sediments for detection of invasive dreissenid mussels
2. The Reclamation Ecological Research Laboratory at the Technical Service Center in Denver, Colorado, has received and analyzed 1,118 invasive mussel samples from 167 water bodies between October 2021 and August 2022.
3. The CPN Regional Laboratory in Boise Idaho collected 62 samples, 3-5 tows per sample at 32 water bodies across the Columbia River Basin in accordance with the TSC sample protocol.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. The implementation of Reclamation's Fiscal Year 2023 Spend Plan to support various mussel management activities across the West
2. Continued implementation of previous years spend plan multi-year activities and projects.
3. Continued mussel monitoring
4. Continued research on control technologies and early detection methodologies for mussels

Organization: National Parks Service

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Competitive funding for Dreissenid mussel prevention and containment increased from \$1 million to \$3 million in federal fiscal year 2022. Eligibility to compete for funding was expanded beyond western parks.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Through an agreement with the State of Utah provided funding for a pilot project to develop and evaluate an automated check-in / check-out system for recreational watercraft at Lake Powell.
2. Through an agreement with the State of Colorado, expanded watercraft / inspection efforts to Lake San Cristobal, upstream from Blue Mesa Reservoir on the Gunnison River.
3. Expanded the capacity of the AIS program at Amistad NRA, including additional use of Detection dogs and deployment of additional CD3 stations on remote boat ramps.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Expand Dreissenid mussel / containment effort to additional parks, inside and outside western U.S.
2. Continue to increase the efficiency / effectiveness of existing WID / AIS prevention efforts.
3. As possible expand NPS AIS prevention efforts to other high risk taxa.

Organization: US Forest Service: Region 2

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

An emergency strike team was sent to the Black Hills in South Dakota to take over from SDGFP boat inspections and decontaminations for a 2-week period including the Labor Day Holiday. Employees, from the Arapaho/Roosevelt, Pike San Isabel, and Nebraska NF's all joined me to man the Pactola boat ramps during the Labor Day weekend and stayed on site for 2 weeks.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. USFS has a Cost Share Agreement with Colorado Parks and Wildlife (CPW) as well as other partnerships for boat inspection and decontamination programs on 10 reservoirs across 5 National Forests in the Region. In FY 2020, the FS cost-shared a total of \$154,000 with CPW for boat inspections and decontaminations on NFS waters across Colorado:
 - San Juan NF – McPhee Reservoir. 4-way partnership with CPW, FS, BOR, and Delores Water Users. FS Share = \$25,000K
 - Grand Mesa/Uncompahgre/Gunnison NF – Taylor Park Reservoir. FS share = \$25,000K
 - Pike/San Isabel NF – Turquoise and Twin Lakes. FS Share = \$10,000K
 - White River NF – Green Mountain and Ruedi Reservoirs. FS Share = \$25,000K
 - Arapaho Roosevelt NF – Colorado Big-Thompson System of Grand Lake, Shadow Mountain and Lake Granby. FS Share = \$75,000 of the \$100,000K needed with partners making up for FS deficit in cost share.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Try to get the Black Hills National Forest to hire an aquatics person to assist SDGFP with the recent zebra mussel infestation in the Black Hills.
2. Continue to try and get RO Leadership to give me \$150K towards ANS activities in CO to maintain our Challenge Cost Share Agreement with Colorado Parks and Wildlife.
3. Be better prepared for the next infestation that is likely to come from the Black Hills whether it is in SD, NE, or WY, it is going to happen.

Organization: US Geological Survey

Name: Adam Sepulveda

Title: Research Zoologist

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Phone: (406) 404-9155

Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Bipartisan Infrastructure Law (BIL) funding to develop and support an early detection rapid response network for the Department of the Interior. This includes funding to support the 'Rapid eDNA assessment and deployment initiative and network' (READI-Net), which links the development of eDNA robotic samplers to actionable science that informs invasive species management by USGS partners. It also includes the 'Manager's eDNA Toolbox', which will allow managers to assess the available approaches, markers, validation techniques and communication strategies when interested in molecular tools in resource management.

Contacts: Adam Sepulveda, asepulveda@usgs.gov, and John Amberg, jamberg@usgs.gov

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Convened a workshop that included 40 scientists from across the U.S. to develop research priorities that addresses management actions described in the latest version of the Western Regional Panel's Quagga and Zebra Mussel Action Plan. Contact: Tim Counihan, tcounihan@usgs.gov
2. Completed a study at a USBOR hydropower facility on the Colorado River to determine minimum CO₂ treatments (concentration and delivery period) for quagga mussel settlement in raw water cooling lines. The outcome of this project will also demonstrate the application of CO₂ in other industrial/municipal water settings. Contact: Diane Waller, dwaller@usgs.gov
3. USGS and federal collaborators looked at three possible strategies for controlling invasive common carp in Malheur Lake, Oregon: No carp removal, carp removal during low water years, and carp removal during all years. The researchers found that removing carp only during low water years—when fish were concentrated into a smaller area-- was almost as effective as removing carp every year. [<https://doi.org/10.1002/ecs2.3985>] Contact: Jason B. Dunham, jdunham@usgs.gov
4. Worked with USBOR to model estimates of plankton tow detection probabilities of dreissenid mussels in the central and western United States and to identify protocol changes needed to improve model estimates. [https://reabic.net/journals/mbi/2022/Accepted/MBI_2022_Winder_etal_correctedproof.pdf] Contact: Adam Sepulveda, asepulveda@usgs.gov
5. Completed multi-year QZAP project to evaluate the added value of eDNA robotic samplers for surveillance of invasive dreissenid mussels in the upper Snake River Basin. Over 525 eDNA water samplers were analyzed at two locations, from July – September in 2019 - 2022. Contacts: Adam Sepulveda, asepulveda@usgs.gov, and Elliott Barnhart, ebarnhart@usgs.gov

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Supporting QZAP priorities, especially research to develop control tools that build on previous USGS research.
2. Invasive Green crab in the Pacific Northwest shoreline.
3. Invasive northern pike in the Pacific Northwest and Alaska.

4. Potential spread of Prussian carp into Montana.
5. Support of DOI's Invasive Species Task Force's BIL funded early detection rapid response network projects.

US State Government Agency Member Reports:

Organization: Alaska Department of Fish and Game

Name: Tammy Davis

Title: Statewide Invasive Species Program Coordinator

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

ADF&G expanded early detection monitoring in Southcentral, Alaska lakes and southern Southeast marine waters. A pilot project of sampling for dreissenid mussels and collecting water samples targeted 42 water bodies in Anchorage, Matanuska-Susitna Valley and Kenai Peninsula. Eelgrass habitat near Ketchikan and the Alaska-Canada border were surveyed for European green crab presence and observations of molted carapaces.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. ADF&G's invasive species program works hard to establish and foster strong partnerships across Alaska and the west. The Alaska Invasive Species Partnership (AKISP) and its committees provide opportunities to share knowledge, leverage capacity, and expand public awareness about aquatic invasive species. ADF&G continues to be an active member of AKISP, and values the engagement by a wide diversity of entities. The department is engaged in many standing and ad hoc committees, and co-led drafting a five-year strategic plan to be finalized this fall.
2. Northern pike are native to most of Alaska, however, in Southcentral they are invasive and have had significant negative impacts on important Pacific salmon fisheries. ADF&G continues to be the lead agency for pike management, suppression, containment and eradication. Utilizing and expanding partnerships with consortium of collaborators, ADF&G prepared a comprehensive pike management plan for Alaska. After a difficult remote eradication project in 2021, we are hopeful the Kenai Peninsula is pike-free after over a decade of eradication projects. Suppression and eradication projects continue in the Mat-Su Valley. ADF&G Southcentral aquatic invasive species program staff will

provide greater details about pike management during a presentation at the meeting and during the field trip.

3. Prevention and early detection continue to be primary areas of focus as Alaska has comparatively few aquatic invasive species. Communication and outreach efforts are focused on raising awareness about species of concern and their negative impacts, as well as providing clear practices to guide preventative behaviors and reporting. ADF&G has increased signage statewide to alert stakeholders about specific AIS and new regulations pertaining to possession and transport of banned invasive species.
4. Early detection protocols are implemented by ADF&G and partners. Surveys for detection of northern pike, European green crabs, marine invasive colonial tunicates and other invertebrates, as well as the Elodea occur in state waters statewide. New projects include dreissenid mussel sampling.
5. With the detection of European green crabs from Annette Islands Reserve in southern Southeast Alaska, ADF&G has collaborated with Metlakatla Indian Community and NOAA Fisheries to raise awareness about these invasive crabs, and has begun early detection monitoring near Ketchikan and locations near the Alaska-Canada border. Coastal Alaska provides countless miles of suitable habitat for invasive green crabs. There is still much to learn before we can adequately prioritize locations for early detection monitoring beyond habitat suitability, and planning for future efforts is underway.

Organization: Arizona Game and Fish Department

Name: Kate Dukette

Title: Aquatic Invasive Species Coordinator

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

The Arizona Game and Fish Department (AZGFD) AIS Program implemented its monitoring program statewide in Spring 2022. Stocked waters in Arizona were prioritized for 2022. Efforts will be expanded next season as resources allow.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. AZGFD has continued staffing launch ramps at Lake Powell (AZ) with contractor provided inspectors. 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 despite changing lake conditions.

2. Continued operating Watercraft Inspection and Decontamination Station (WID) on I-40 westbound just east of the CA border. This is the only roadside station in Arizona and provides boaters leaving the Lake Havasu area WID.
3. Implemented AIS monitoring program statewide in Spring 2022.
4. Developed a risk assessment for New Zealand mudsnails for stocked waters in AZ.
5. AZGFD and partners have performed over 6600 inspections and 360 decontaminations since October 2021. Boater usage patterns have changed and number of ramps in operation has decreased since 2021, which likely attributes to the decrease in inspections.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. AZGFD will continue to operate current watercraft inspections and decontamination stations.
2. Expand prevention capacity at non-AIS listed waters.
3. Provide outreach and ensuring AIS compliance.
4. Expand monitoring program as resources allow.

Organization: California Department of Fish and Wildlife

Name: Martha Volkoff

Title: Environmental Program Manager

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Despite the ongoing challenges and uncertainty brought by the pandemic, agency staff and partners throughout California have maintained unwavering dedication, and throughout have continued efforts to address invasive species issues across the state.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. **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, early-detection monitoring,

support to responsible parties implementing containment at infested waters, and prevention at uninfested waters.

2. **Nutria Eradication** (Lead Agency – Fish and Wildlife Nutria Eradication Program): March 2018 through August 24, 2022, the nutria eradication efforts in California have:
 - Completed full and/or rapid assessments on over 1.8 M acres
 - Executed entry permits with >4,500 landowners for over 9,300 parcels in 14 counties
 - Set up 6,595 camera stations (1,106 currently active)
 - Conducted 59,868 camera checks
 - Detected nutria within nearly 700 sites
 - Deployed 7,251 trap sets for a total of 90,924 trap nights
 - Taken or accounted for the take of 3,068 nutria from six Central Valley counties
 - Merced- 1,974; Stanislaus- 913; San Joaquin- 110; Fresno- 58; Mariposa- 12; Madera- 1 (San Joaquin River; Fresno County line)
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 2022 QZ Grant cycle, DBW awarded funding for all 10 applications received, though some for partial funding. All grants are for implementation projects which began on August 29, 2022, with a two-year expiration.
 - Since the first grant cycle in 2014/15 - the current 2022 Grant cycle, approximately \$22 million has been awarded statewide to reservoir owners and managers for the prevention of quagga and zebra mussel infestation at uninfested publicly accessible reservoirs. 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 2023, is anticipated to kick off in the spring of 2023. 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 – 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. The eradication and surveys continue and additional locations have been detected.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Coordinate with state, federal, and stakeholders through the California Invasive Species Advisory Committee.
2. Conduct statewide surveys for New Zealand mudsnails for better resolution of their range.
3. Continue eradications of two populations of *Nerodia* watersnakes in Sacramento and Placer counties.

Organization: Marine Invasive Species Program, California Lands Commission

Name: Chris Scianni

Title: Environmental Program Manager

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

We have adopted, implemented, and are enforcing ballast water discharge performance standards as of January 1, 2022. We have been working towards performance standards implementation since 2006 and we are now inspecting and enforcing them.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Adopted and implemented regulations setting performance standards for ballast water discharges.

2. Settled two enforcement actions for violations of the Marine Invasive Species Act, with two more currently in settlement proceedings.
3. Early detection and prevention of 68,793 metric tons of potential noncompliant ballast water intended for discharge.
4. Published research with New Zealand's Ministry for Primary Industries and Cawthron Institute on biofouling in ships' internal seawater systems:
<https://www.frontiersin.org/articles/10.3389/fmars.2021.761531/full>
5. Published research with the Alliance for Coastal Technologies on technical considerations for development of policy and approvals for in-water cleaning of ship biofouling: <https://www.frontiersin.org/articles/10.3389/fmars.2021.804766/full>

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Complete and submit the 2023 Biennial Report on California's Marine Invasive Species Program
2. Complete and publish in a peer-reviewed journal a pre-arrival risk assessment that assigns scores for ballast water and biofouling to prioritize vessel inspections
3. Initiate and complete regulatory amendments to incorporate biofouling and ballast water performance standards violations into the Commission's enforcement regulations to provide transparent penalties for each type of violation.

Organization: Colorado Parks and Wildlife

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Title: Invasive Species Program Manager

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

CPW manages the Regional WID Data Collection System. The workflow is based on Uniform Minimum Protocols and Standards (UMPS) and the Watercraft Inspection Training (WIT) Procedures. The system continues to be improved each year by the agencies utilizing the system. CPW encourages all entities performing WID to explore adoption of this system, which is free to use.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. In 2021 the Colorado State Legislature authorized CPW to implement a pilot roadside watercraft inspection & decontamination program at Ports of Entry. During the 2022

season, CPW collaborated with Colorado State Patrol, Colorado Department of Transportation and Port of Entry staff to operate a station at the Loma Port of Entry. Over the course of three days, CPW intercepted 26 boats with mussels, all of which originated from Lake Powell.

2. CPW installed 27 tankless water heater based decontamination systems across the state of during 2022. When compared to power washer based systems these tankless water heaters provide a more efficient & effective means of decontamination and a significantly improved experience for both decontaminators and the public.
3. CPW hosted a first of its kind Advanced Decontamination workshop focused entirely on ballasted boats. Five different watercraft dealers, each representing a different manufacturer, provided different ballasted boats. Attendees were able to ask industry experts questions regarding each of the boats and were able to get hands-on experience decontaminating these highly complex vessels. The workshop was well attended by CPW staff, partner organizations and two specialist from Wyoming Game & Fish. CPW hopes to host similar workshops in the future.
4. Following a detection of New Zealand Mudsnaills in a private fish hatchery in October of 2021, CPW worked with facility staff to implement the guidance set forth in the draft WISCE Guidelines for Delisting a Facility Following the Detection of AIS. This decontamination and subsequent inspection effort proved to be very effective and in April of 2022 CPW staff performed a follow up inspection of the facility in alignment with the Aquatic Invasive Species Sampling Guidelines for Hatcheries which showed no evidence of NZMS. CPW will be performing a second follow up inspection of the facility in October of 2022.
5. CPW Leadership approved a new full time Invasive Species Specialist position that will be based in Grand Junction Colorado. This new full time position will allow the CPW ANS Program to respond more effectively to ANS related issues on the Western Slope of Colorado.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. In 2023 CPW will be implementing the second year of the roadside watercraft inspection & decontamination pilot program. The implementation of this program at the Loma Port of Entry was extremely successful in 2022 and CPW will be looking to expand the effort to other ports of entry in 2023 to better inform the potential future long term implementation of the program.
2. CPW will be collaborating with other western states to develop a standardized web based course for AIS Hatchery Inspections. The primary goal of this course is to provide a consistent baseline knowledge for those that are inspecting hatcheries for AIS.
3. CPW will be onboarding their new Invasive Species Specialist that was approved by their leadership during the upcoming year.

Organization: Idaho State Department of Agriculture (ISDA)

Name: Nic Zurfluh

Title: Section Manager- Invasive Species Outreach & Coordination

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

The largest highlight to report on this year is our dedicated program staff and partners working around the state on invasive species and noxious weed issues. ISDA was fortunate to be approved by the Idaho Legislature for five additional full time permanent staff for the Noxious Weed and Invasive Species Program. The additional staff will be located in Post Falls, Idaho Falls and Pocatello. The Program also relies on a robust seasonal workforce of hard driven roadside watercraft inspectors, roving inspection crews and survey crews. These dedicated individuals are often found out in the field during the busy summer months performing everything from watercraft inspection decontamination, aquatic plant survey or removal to public outreach and education. Most of this work involves overnight trips away from home, long workdays in treacherous conditions. Lastly, but not least, we have a wide network of partners and collaborators across the state who help ensure the success of the program.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. **Watercraft Inspection Station Operation.** Idaho operated 19 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 (9/8/2022): Total watercraft Inspections: 92,000. Hotwashes (140F) performed: 596. Weeds on boat: 466. Q/Z Fouled watercraft: 30. Idaho continued the expanded nighttime operations at Idaho stations which consisted of 24-hour operations at Cotterell (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.

2. **Monitoring Operations:** ISDA performs annual early detection monitoring at 80 waterbodies throughout Idaho utilizing over 1,600 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. **2022 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 FY22. This funding has made it possible to extend inspection station season duration and hours of operation. Idaho was also provided an additional \$600K in Idaho General Fund to be utilized on watercraft inspection long term site improvement projects across the state. Overall program funding also includes \$1 M from federal funds to enhance operations or equip watercraft inspection stations. The watercraft inspection budget for FY22 is \$1.4 M from the dedicated Watercraft Inspection Fund, \$3.14 M from the General Fund, \$600K for watercraft inspection site improvements and \$1.0 million from federal funds. 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 \$90K in federal funds for the statewide outreach program. 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.

Organization: Kansas Department of Wildlife and Parks

Name: Chris Steffen

Title: ANS Coordinator

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Greatly expanded the capacity of the Kansas ANS program. Funds were secured through the State Water Plan for implementation of a WID program and several grant were received from USFWS for our invasive carp management efforts. These funds, along with existing funds and support from our administration, allowed us to hire 3 more ANS-dedicated full-time employees:

- ANS Biologist
- Invasive Carp Biologist
- Invasive Carp Technician

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. **Initiated contract removal of invasive carps from the Kansas River below the Bowersock dam** - In addition to the upstream barrier (Bowersock Dam), there is a downstream semi-passable barrier (WaterOne Dam at Edwardsville, KS) that limits upstream movement of invasive carps into the Kansas River from the Missouri River. Microchemistry data from a 2018-2019 study found that the invasive carp in this section of the Kansas River are predominantly resident fish. KDWP believes that removing invasive carp downstream from the Bowersock Dam could reduce the number of fish that may attempt to pass over the Bowersock Dam during a high flow event, decreasing the potential for a breeding population to establish upstream of the dam. To meet the objective of reduction of this resident population, KDWP has contracted with a commercial fisherman to remove carp in this section of the Kansas River. The commercial fisherman has been working intermittently for 6 months, experimented with several methods of removal (seining, gill nets, trap nets, acoustically herding fish into nets, etc.), and has removed approximately 15,000lbs of invasive carps.
2. **Completed a feasibility study for an invasive carp deterrent on the Kansas River** – A feasibility study (funded in part by FWS) was conducted to determine which current deterrent technologies could be integrated into the Bowersock Dam in the Kansas River 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. They produced a report which concluded that an acoustic deterrent would be the best option and could prevent upstream spread of bigheaded carps. The report also includes an analysis of dam design river flows to inform when to activate a future acoustic deterrent and approximate installation and maintenance costs.
3. **Continued 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.

One year of field sampling has been completed and the second season is ongoing. Field data collection will conclude fall of 2022 and a thesis and final report will be completed in the first half of 2023.

4. **Continued 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. 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
5. **Rusty crayfish detected for the first time in Kansas in 2022** – During the crayfish research project described in the bullet below, rusty crayfish were encountered in McPherson State Fishing Lake. This is the first time this species of crayfish has been documented in the wild in Kansas. The population appears established (adults and juveniles found) and eradication appears to be unfeasible. KDWP has undertaken extensive outreach to notify the public of the situation and to discourage movement of crayfish and other aquatic species.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Expansion of WID activities in Kansas.
2. Increased removal of invasive carp from the Kansas and Neosho Rivers and continue coordination of efforts to install an invasive carp deterrent at Bowersock Dam.
3. Increased ANS education and outreach, specifically targeting organisms-in-trade and coordination with law enforcement officers.

Organization: Montana Fish, Wildlife & Parks

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Title: AIS Bureau Chief

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Removed the “mussel positive” status from Tiber Reservoir in 2022.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Continue to build and strengthen partnerships working with AIS prevention, early detection and outreach.
2. In 2022, the AIS program in Montana inspected over 90,000 watercraft; intercepted over 48 mussel fouled vessels; identified over 300 transporting aquatic weeds; collected and analyzed over 2,000 AIS early detection samples; and engaged over 50 partner groups and small businesses in AIS outreach.
3. Ongoing work to address quality control at watercraft inspection stations to improve accuracy and consistency.
4. Possibly eradicated corbicula clams from the state of Montana.
5. Conducted the second year of a state-wide crayfish survey.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Expand partnerships and partner involvement with watercraft inspection stations, AIS early detection survey and outreach.
2. Adjust watercraft inspection station operations to address boat traffic from the Black Hills.
3. Conduct site improvements to improve inspection station work environment.
4. Expand the use of eDNA for *Dreissenid* mussel early detection at high-risk waterbodies.
5. Expand the Don't Let It Loose program to provide partners materials to deliver in local communities and events.

Organization: Nevada Department of Wildlife

Name: Kevin Netcher

Title: Aquatic Invasive Species Coordinator

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

NDOW's AIS program was able to add 3 FTE positions in southern Nevada, 2 at LMNRA/Las Vegas and 1 located in Alamo. The positions at LMNRA will assist with the operation of the already existing WID stations as well as growing NDOW's in-town presence in Las Vegas. With the continued decline of Lake Mead, many boat owners are choosing to sell their boats on consignment. The new positions allow NDOW to visit every boat dealer and auction house in the greater Las Vegas area on a monthly basis to ensure no mussel boats are being sold and

transported across state lines. Additionally, the positions are growing the “Don’t Let it Loose” program in southern Nevada. The position in Alamo is ensuring that that the roadside WID station is permanently staffed and intercepting north bound traffic on U.S. Hwy 93.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Working with the Nevada Department of Transportation, NDOW was able to permanently move the roadside Alamo WID station. The station is now located at the intersection of U.S. Hwy 93 and S.R. 318 and is better situated to intercept traffic from multiple directions. Additionally, the station is in a slower speed zone and is safer for motorists and NDOW staff. With the addition of the FTE employee the Alamo Roadside station is better equipped to intercept any potential mussel boats.
2. There was a significant increase in collaboration between tribal nations in Nevada and NDOW’s AIS program over the last year. NDOW and the Pyramid Lake Paiute Tribe collaboratively surveyed the Truckee River for New Zealand Mudsnaills and Asian Clams. NDOW staff was also able to assist at the tribes WID station during the opener of the fishing season at Pyramid Lake when a high volume of boats were expected. Additionally, the Shoshone-Paiute Tribes of Duck Valley Indian Reservation are a vital partner in planning the upcoming Rapid Response exercise at Wildhorse Reservoir.
3. Topaz Reservoir is an interstate reservoir on the Nevada/California border. New fishing regulations at Topaz Reservoir we’re recently changed to allow for year around fishing and boating. The main boat ramp is located in Nevada, with assistance from Douglas County Park Department, NDOW was able to operate the WID station for 12 months last year and will continue to do so.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Work towards establishing a Nevada Interagency AIS Implementation team.
2. Continued improvement to WID stations throughout the state.
3. Develop a centralized georeferenced AIS database for Nevada. Currently site locations for species such as American Bullfrog, Asian clam and common carp are spread throughout the state among respective field biologists.

Organization: North Dakota Game and Fish Department

Name: Ben Holen

Title: Aquatic Nuisance Species Coordinator

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

North Dakota's ANS awareness week continues to grow. Governor Doug Burgum proclaimed May 15th-21st ANS awareness week in North Dakota. We worked with Water Resources, the Departments of Agriculture, Commerce, Environmental Quality, and many other federal, state, tribal, and private partners to raise ANS awareness. Partners utilized press releases, social media, television, radio, and special events to educate the public.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. **Watercraft and equipment inspection-** In 2022, we inspected over 5,000 watercraft and nearly 100 pieces of large commercial equipment (barges, tugboats, etc.)
2. **Outreach-** We hired a new marketing professional that assists with the planning and implementation of the ANS education/outreach program. The state continued to use a diverse combination of billboards, radio, television, social media, digital marketing, and personal contacts to raise ANS awareness at a regional level. The Department partnered with Midco, a regional TV/internet provider, to develop and disseminate ANS commercials. These new commercials played during prominent sporting events throughout the summer that Midco carried. So far, North Dakota's ANS digital media campaign has generated over 3 million impressions.
3. **Prevention Devices-** We maintain/support a dozen ANS prevention devices, including CD3s, ILIDS, and free boat wash stations. ILIDS are remote inspection cameras that encourage boaters to comply with AIS regulations. In 2022, we installed two new ILIDS at Lake Elsie and Government Bay, Lake Sakakawea.
4. **Significant findings and response-** We sample 140+ waters every year using plankton tow nets for the early detection of zebra mussels. We deploy substrate samplers and conduct snorkeling surveys at high-use recreational waters. We continue to monitor waters for invasive vegetation, invertebrates, and carp. So far, there have been no new detections of ANS in 2022.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Continue to improve the ND WID program
2. Engage local entities and grow the ANS community in North Dakota.
3. Expand ANS education/outreach strategies
4. Employ/evaluate eDNA as an early detection tool

Organization: Oregon Department of Fish and Wildlife

Name: Rick Boatner

Title: Invasive Species, Wildlife Integrity Supervisor

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Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Watercraft inspection program. As to the date this report was submitted the watercraft inspection program inspected 11,654, intercepted 6 with quagga or zebra mussels and 214 with other types of aquatic biofouling. Due to lack of staffing Oregon only open four of the six stations and we are down about 33% on number of inspections perform compared to 2021.
2. Discovered populations of the invasive Northern Crayfish (*Faxonius virilis*) in the Ashland and Medford area of SW Oregon. Oregon now has four species of invasive crayfish established in the state: Red Swamp crayfish (*Procambarus clarkii*), Rusty crayfish (*Orconectes rusticus*), Ringed crayfish (*Faxonius neglectus*) and now the Northern crayfish (*Faxonius virilis*)
3. The population of Rusty crayfish (*Orconectes rusticus*) located in an isolated pond in the headwaters of the Malheur River Basin is almost eliminated and the presents of Rusty crayfish have not been observed in nearby streams.
4. The Common snapping turtle and Red eared slider turtle are well established in the Willamette Valley and we now have confirmed reproducing populations. Turtles are being removed during various surveys, sighting reports are being followed up by ODFW staff and many turtles are being turned in by the public.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. The top priorities for 2023 is to fully staff all six of our inspection station and develop a roving inspection team that would focus more on outreach and education.
2. Address housing needs of seasonal employees.
3. Conduct more Northern crayfish surveys and use eDNA to determine the extent of the Northern crayfish population in SW Oregon.
4. Move more funding for zebra and quagga mussels monitoring efforts to PSU Center for Lakes and Reservoirs.

Organization: Oregon State Marine Board

Name: Glenn Dolphin

Title: Environmental Programs Coordinator

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

In Oregon the AIS Prevention Program is implemented by both my agency (boat permit sales and overall program funding) and the State Fish and Wildlife Department (field operations for boat inspections and waterbody monitoring/management activities). Both agencies conduct education and outreach activities and with increased boat permit sales during 2021 and into 2022, the base state funding for ODFW was increased by \$140,000 to bring their biennium state funding up to 1.1 million.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Next month in October it will be the 10th year that a three-part AIS guest presentation series has been implemented in coordination with a local community college and their fisheries management class (presentations are held during three different lab class days). My agency along with ODFW and the USGS all present different aspects of the state AIS Prevention Program, along with AIS species biology and how to decontaminate scientific field gear to prevent any unintentional spread of AIS to other waterbodies.
2. During 2022 Oregon AIS partner agencies are undertaking a comprehensive update to our state-wide ANS plan (our state plan was first approved back in 2001) that was approved by the ANSTF for our portion of federal funding for the implementation of these management plans. This has been a large undertaking over the last six months as a lot has changed in Oregon over the past 20 years for us to update and strategize on what the priorities will be moving forward.
3. I continue to participate on the WRP coastal committee and will wrap-up my fourth year on the executive committee.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

The biggest priority for my agency next year is to increase the amount of state funding that is available to monitor Oregon waterbodies for AIS. Currently a basic EDRR monitoring

program is implemented and with additional state funds from my agency, we look forward to helping our partner agencies conduct more monitoring that will be better in-line with our neighboring states efforts.

Organization: Texas Parks and Wildlife

Name: Monica McGarrity

Title: Senior Scientist for Aquatic Invasive Species

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Aquatic invasive vegetation management has been highly successful at reducing infestation acreage and ensuring no water bodies are impaired for boater access.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. **Aquatic 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. Giant salvinia integrated pest management strategy includes a variety of control methods including salvinia weevil introductions as biological controls.
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, with over 150 private landowners participating and over 20,000 acres treated to date. The Healthy Creeks Initiative has partnered with more than 450 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, Nueces, and Llano river and San Felipe Creek watersheds of the Texas Hill Country in Central Texas.
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 second year and has received funding for an additional year of population monitoring and two years of telemetry. Invasive carp have

been detected in all studied Texas tributaries of the Red River, and TPWD changes to regulations to prevent the transfer of invasive carp have been expanded to include these waters, effective September 2022.

4. Zebra/Quagga Mussel Early Detection/Population Monitoring: A group of 11 partner agencies and 2 universities conduct zebra mussel early detection monitoring at 173 sites on 44 water bodies and population monitoring on 28 water bodies. This partner approach to monitoring significantly increases the number of water bodies that can be monitored and coordination prevents duplication of efforts. In the past year, there have only been two new detections of invasive mussels in Texas—quagga mussel larvae in Lake Amistad on the Rio Grande and zebra mussels in private-access only Diversion Lake in Central Texas (the latter due to downstream dispersal). Additionally, Lake Walter E. Long was upgraded from positive to fully infested status after detection of settled adult zebra mussels.
5. 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; and print ads in outlets such as the Outdoor Annual, Texas Parks & Wildlife magazine, and the Marina Association of Texas newsletter. Outreach this year also included focus on the Never Dump Your Tank campaign and direct, targeted angler outreach to prevent the spread of invasive carp.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Aquatic & Riparian Invasive Plant Management
2. Zebra/Quagga Mussel Monitoring and Outreach/Prevention
3. Invasive Carp Population Assessment and Movement

Organization: Utah Division of Wildlife Resources

Name: Bruce Johnson and JoLeisa Cramer

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

UDWR has received additional funds from the Utah Legislature to install 3-4 more decontamination dip tanks for watercraft statewide in 2022 and 2023. Installation and

operation of these additional dip tanks will allow UDWR staff to decontaminate complex watercraft statewide, and not just at Lake Powell.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Operation and improvement 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 2022, 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 2023.
2. Development and rollout of a new 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 2023.
3. Establishment and operation 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.
4. Purchase of land outside of Kanab, Utah, for future establishment of a mandatory watercraft inspection station in 2023 to allow for additional capacity and capability to interdict boats leaving Lake Powell and boats being transported into Utah from infested regions in Arizona.
5. Continued improvement and updating of mobile decontamination units across the state of Utah. 2-4 mobile decontamination units with 8gpm pump capacity/flow purchased to aid in interdiction efforts across the state at UDWR mandatory check stations.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Expansion of hot water decontamination dip tank program to 1-2 additional locations in Utah in 2023.
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 2023.

Organization: Washington Department of Fish and Wildlife

Name: Allen Pleus

Organization: Washington Dept of Fish & Wildlife (WDFW)

Title: AIS Unit Manager

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Highlight from our AIS program.

- Brought in more than \$14.5 million in state ongoing funding for AIS programs including European green crab, zebra/quagga mussels, Northern pike, and ballast water/biofouling.

Description of our top three AIS activities/accomplishments/priorities for the past year.

1. European green crabs (EGC): EGC detections and populations continued to increase this year, especially in the Lummi Nation sea pond and along the coast at Makah Bay, Willapa Bay and Gray's Harbor. WDFW manages \$10.9 million in EGC emergency funding to coordinate an effective response among tribal co-managers, NGOs, shellfish growers and many other local, state and federal entities. Of those funds, over \$5 million is designated as pass-through funding to support tribal co-managers and other EGC partners.
2. Zebra/quagga mussels (ZQM): WDFW's AIS Prevention Unit leads the early detection monitoring program, which is one of the best in Western states and is also used for early detection of Northern Pike and New Zealand mudsnails. WDFW's AIS Enforcement Unit leads an increasingly robust watercraft inspection program that are models of efficiency and reliability.
3. Vessel Incidental Discharge Act (VIDA): In coordination with the Washington Department of Ecology, WDFW led the state review, comments and ultimately objection to the U.S. Environmental Protection Agency's (EPA) national vessel discharge standards rulemaking under the VIDA. WDFW also provided strong leadership among other Pacific and Great Lakes states to promote consistency in concerns and objections to this rulemaking. Consultation with EPA is ongoing.

Priorities for the upcoming year to help identify coordination opportunities moving forward.

1. European green crab (EGC): Continue implementation of emergency measures and work towards long-term local management.
2. Zebra/quagga mussels (ZQM): Continue maintaining and improving as resources allow early detection monitoring and watercraft check station activities.
3. Vessel Incidental Discharge Act (VIDA): Continue state/federal consultations on setting effective national discharge standards and compliance requirements.

Organization: Wyoming Game and Fish Department

Name: Josh Leonard

Organization: Wyoming Game and Fish Department

Title: Aquatic Invasive Species Coordinator

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

The Wyoming Game and Fish Department (WGFD) completed multiple rigorous regulation changes to further protect our state from AIS in regards to Private Hatchery fish importation, which will be implemented in 2023. This will include a mandatory AIS Hatchery Inspection between June 15th and October 15th annually and will be required for any hatchery applying to import fish into the state. The AIS program adopted the AIS Hatchery Inspection obligations in 2021 and will continue their annual monitoring of hatcheries into perpetuity. If interested in this regulatory language, please reach out to Josh as they are still being finalized with the Governor's office.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. The WGFD responded to the mussel infestation detected in Pactola Lake, South Dakota mid-July. This infested water is only 27 miles from the Wyoming border, increasing the threat to Wyoming significantly. As a result, Wyoming has closed watercraft access to LAK Reservoir in northeastern Wyoming for the remainder of 2022, as infrastructure and personnel are not available to effectively protect this water. Additionally, Wyoming has increased staffing and hours of our check station bordering South Dakota to ensure watercraft entering the state are clean, drained and dried before launching. WGFD will possibly be constructing a new AIS check station located near Lusk, WY in response to this detection.
2. In 2022, Wyoming initiated the roll out of tablets and wireless printers for all AIS inspections at our permanent check stations, in an effort to cut back on data entry and interact with surrounding states real-time. Additionally, this has allowed Wyoming to intercept high risk boats that may have been overlooked in years pasting trusting watercrafts users in where they said they boated last.
3. The WGFD increased seasonal personnel hiring in 2022 to combat the increased workload our inspectors endured in 2020 and 2021. The program now operates with 5 FTE personnel, four 10-12 month contract Specialists, one crew lead and 51 seasonal inspectors.
4. In 2022, 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 August 31st, a total of 56,807 inspections have been conducted, a slight decrease compared to the increased traffic witnessed in 2020 and 2021. Of these, 4,033 were high risk watercraft and 596 were decontaminated for water onboard or suspect AIS. Thus far, fifty-six boats have been intercepted with mussels attached or in compartments, two of which was harboring live mussels.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Along with many western states, hiring for seasonal positions in 2022 was extremely difficult and the WGFD was never 100% fully staffed. This fall/winter we will be exploring new ideas on how to recruit and retain AIS inspectors, especially in our more remote locations.
2. The WGFD will continue to upgrade utilities at check stations while transitioning mobile decontamination units to on-demand units, to help deliver more reliable temperatures when performing decontaminations.
3. The WGFD is in the processing of purchasing 10 acres of property in a prime location for a new AIS check station. Once this sale is complete in late September, the WGFD will begin the process for engineer design and hopefully construction in late 2023.

Canadian Provincial Government Member Reports:

Organization: Alberta Environment and Parks

Name: Nicole Kimmel & Cindy Sawchuk

Title: Aquatic Invasive Species Specialist & AIS operations and K9 lead

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Alberta remains invasive mussel free

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Alberta is working closely with British Columbia, Saskatchewan, Manitoba and Yukon through a provincial-territorial agreement on invasive species. The initial focus continues to be looking for ways to collaborate on invasive mussel prevention and being prepared for a response in western Canada.
2. For efficiency and to assist Montana with their program, Alberta inspects watercraft going both north and south at the Coutts international border. Completed through an international agreement signed in 2021 between the state and province, Montana

accepts Alberta inspections as part of their inspection requirement for out of state watercrafts prior to launching.

3. Alberta participates in many regional and/or national collaborative organizations including the Pacific NorthWest Economic Region (PNWER), Columbia River Basin Invasive Species Group/100th Meridian, the Western Regional Panel on Aquatic Nuisance Species, North America Invasive Species Management Association and the National Aquatic Invasive Species Committee.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

Alberta remains committed to supporting our five elements of programming:

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

Other Organization & Interests Member Reports:

Organization: Pacific States Marine Fisheries Commission

Name: Stephen Phillips

Title: Senior Program Manager

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Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. **Watercraft Inspection Training (WIT):** PSMFC contractor Quagga D continued watercraft inspection trainings in Fall 2021 and 2022. 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); PSMFC contractor Lisa DeBruyckere spearheaded the *Call Before You Haul* program (which is now active in 39 states); 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. Attended sport/commercial fishing shows with AIS booth in Seattle and Portland.
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 2022 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 and the states of Nevada and Wyoming were added in 2022.
4. **Coordination/Other:** We hosted meetings of the Columbia River Basin Team of the 100th Meridian Initiative in January and June (virtually) (<https://www.westernais.org/coordination>); a Columbia River Basin Monitoring Forum meetings were held January and in June and chaired by Tim Counihan, USGS, and Robyn Draheim, PSMFC; Held September 2021 rapid response exercise led by MTFWP in Fort Peck Reservoir, MT with USACE/USFWS/ISAN and others; Planned October 2022 for rapid response exercise in Wildhorse Reservoir to be led by NDOW (Kevin Netcher) and ISAN (Leah Elwell)

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Hold dreissenid rapid response exercise in Nevada 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.
4. Continue *Call Before You Haul* program.

Organization: Tahoe Regional Planning Authority

Name: Dennis Zabaglo

Organization: Tahoe Regional Planning Agency (TRPA)

Title: Aquatic Invasive Species Program Manager, & WRP Chair

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

TRPA approved and is overseeing an innovative test project investigating multiple invasive aquatic plant control techniques. This test is utilizing aquatic herbicides (first time in Lake Tahoe) and ultra-violet light, both independently and in combination, to provide an initial knockback in the first season, then maintain the knockback with all non-herbicidal methods for two subsequent seasons. The test is being implemented in an area of Lake Tahoe known as the Tahoe Keys, which consist of approximately 170 acres of waterways and lagoons connected to the lake, and represents the largest infestation in the lake, and the highest priority for control. Results of the test will inform what combination of techniques will likely be able to control the entire infestation for the long term, and eliminate the spread to other areas of the lake.

<https://tahoekeysweeds.org/>

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Implementation of invasive aquatic plant control project in the largest functioning wetland in the Tahoe Basin, at the Taylor-Tallac Creeks and Marshes. It is the largest eradication project being implemented to date at over 17 acres infested with primarily Eurasian watermilfoil. Benthic bottom barriers is the primary tool being used for treatment, that is expected to last for three years.
2. "Cutting the Green Tape" - assessing projects to see where efficiencies can be made in getting important AIS control and restoration projects on the ground in a more timely manner.
3. Increasing pace and scale of projects with the hiring of new staff and additional funding- TRPA has welcomed Emily Frey to the agency in a new position as the AIS Project Coordinator. TRPA is also grateful for the continued support at the federal level receiving funds through the Lake Tahoe Restoration Act and the Bipartisan Infrastructure Law.
4. The Lake Tahoe Watercraft inspection Program continues to have remarkable success with no new invasions since the program began in 2008.
5. Implementation of the Tahoe Keys Lagoons Aquatic Weed Control Methods Test (mentioned in Question 1). This was a monumental effort that saw private and public partners come together to design a project based on sound science and significant public input. TRPA is providing independent monitoring for the project to ensure any potential impacts are detected and mitigated in accordance with the environmental analysis.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Permanent inspection stations- TRPA is working on developing two permanent, off-ramp inspection stations, one in CA and one in NV to improve efficiencies and provide a better customer experience and better facilities to perform inspections and decontaminations.
2. Conduct a feasibility study for marina redesign that would make these locations less likely to harbor AIS.
3. Develop Spanish language outreach and training materials for the AIS program.
4. Implementing AIS control projects to achieve a 90% reduction in AIS populations by 2031.

Organization: Center for Lakes and Reservoirs, Portland State University

Name: Catherine de Rivera

Organization: Center for Lakes & Reservoirs, Portland State University

Title: Professor

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

One key activity: PSU's Center for Lakes and Reservoirs Surveyed for zebra/quagga mussels and other freshwater ANS. We revised our prioritization list of waterbodies to sample, based on calcium and pH in the water and boat visitation rates, expanding the list to include more waterbodies. Following that prioritization Center for Lakes and Reservoirs sampled high risk reservoirs at least two times each (goal is 3x each) except ones that were already dry in May or were too cold for veligers in May then dry in June. We sampled 139 sites (including repeats) for an average of 2.4 hours per reservoir and we collected veliger samples. We didn't find any zebra or quagga mussel adults or, based on samples analyzed to date, veligers.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Surveyed for *Carcinus maenas* (5-spine shore crab, AKA green crab) in Oregon bays;
2. Participated in the Northwest Regional Invasive Species and Climate Change network advisory team and its first annual meeting, including giving a talk. "Management considerations for a marine invader given warming waters";

3. Participated in the Oregon Invasive Species Council, including the executive committee and in a working group on outreach about key invaders, our 'invasions hub';
4. Serving as PI for a grant, funded by Western IPM, on how biological invasions interact with climate change and with first foods;
5. Synthesized literature about the effects of climate change on *C. maenas* physiology, distribution, and impacts for a chapter in an upcoming book on *C. maenas* physiology.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Help create Oregon's plan for *Carcinus maenas* and help with the national plan, including adding elements about managing the species given concerns for first foods and for climate change;
2. Create a state plan (for Oregon) for non-native marine algae;
3. Finish revising Oregon's state management plan for aquatic invasive species;
4. Continue early detection surveys for zebra and quagga mussels and other ANS, including with eDNA and a citizen science program, should we receive funding for these expansions;
5. Develop outreach materials and help support structures for continued outreach and education.

Organization: Inland Academic Member

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

We need to prepare ourselves to expect surprises. The moss ball event this past year was something that emerged, and we were not prepared. Having a good well connected rapid response network is critical.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. I participated in the American Fisheries Society Annual meeting in Spokane and there were several days of sessions dealing with invasive fish and aquatic species. Of interest to many was a paper authored by Jon Amberg and others simulating the potential feasibility of the YY-male method for five aquatic invasive species that have different life histories: red swamp crayfish (*Procambarus clarkii*), zebra mussel (*Dreissena*

polymorpha), lake trout (*Salvelinus namaycush*), silver carp (*Hypophthalmichthys molitrix*), and Nile tilapia (*Oreochromis niloticus*). I would suggest that this topic be of importance for future meetings. Other symposia were titled: Detection, Control, and Eradication of Invasive Crayfishes, Invasive and Introduced Species: Negative impacts and unexpected opportunities; The decision process and techniques used for nuisance fish removal; Walleye Introductions in the West.

2. I have worked with the WRC Coastal Committee to highlight the risks associated with the development of offshore wind power development and potential for increased biofouling, numerous pathways for introduction from ships, equipment, and marine infrastructure associated with this rapidly emerging industry that will be coming from outside of our western Pacific region. (see photo of biofouling plate).
3. Agencies and organizations affected by Asian clam infestations continue to investigate potential control measures and there is concern regarding the expanded distribution of *Corbicula* in the Pend Oreille River in BC central Kootenay region. There are no simple tools, and clearly these infestations are needing more attention by researcher and managers to better understand their impacts and pursuit of control measures.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Continue to serve as a resource for managers and others regarding control measure for invasive mollusks.
2. Continue to collaborate with the Coastal Committee on their priority topics.

Organization: Taylor Shellfish

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Continued development of oyster broodstock with resistance to OshV-1 through broodstock testing and fitness trials.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Strict compliance with State regulations for Pacific oyster drill transfer to prevent further spread.
2. Implementation and continued use of a “High Health Program” in our hatcheries to test for and identify aquatic shellfish diseases and ensure that only disease-free shellfish are produced and shipped.
3. Protocols for the use of shellfish production equipment to prevent the spread of *Carcinus maenas*.
4. Partnering with Pacific Northwest National Laboratory to develop a nano technology antifouling to be used to prevent bivalve settlement.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Trapping to monitor and control *Carcinus maenas* (the crustacean formally known as the European Green Crab).
2. Continued development of oyster broodstock with resistance to OshV-1 through broodstock testing and fitness trials.
3. Further anti fouling trials.

Organization: Idaho Power Company

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Title: Resource Professional Leader

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Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Continued supporting Idaho Department of Agriculture’s dreissenid mussel early detection monitoring program by sampling on the Snake River in Hells Canyon.
2. Presented at Northwest Hydroelectric Association annual meeting in Portland in March 2022 to report on Idaho Power’s invasive species program.
3. Participated on WRP Planning committee for 2022 meeting.

Question 3: Outline your priorities for the upcoming year (up to 5). This will help identify coordination opportunities moving forward.

1. Keep supporting regional efforts to prevent aquatic invasive species.
2. Keep sampling to support Idaho’s early detection efforts.
3. Keep our customers informed on aquatic invasive species issues.

Organization: Invasive Species Action Network (ISAN)

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Question 1: Provide one achievement / highlight from your ANS program that you would like WRP to know about.

Don't Let it Loose took on a new level of engagement beyond independent pet stores in multiple areas of expansion; including state partnerships on signage, collaboration with other states to build rehoming capacity, connecting educators to responsible pet ownership lessons and resources, and forging new relationships with industry partners.

Question 2: Provide a description of your top five ANS activities/accomplishments/priorities (up to 5) for the past year:

1. Don't Let it Loose – Our efforts to promote responsible pet ownership expanded into Colorado pet stores reaching 25 new business partners on rehoming. The dontletitloose.com website has become more interactive for pet owners looking for options. New this year, ISAN was able to partner with several active state partners in DLIL to get signage at likely dumping locations for pets.
2. Forest Pest Outreach – ISAN completed a suite of invasive pest insect flies and accompanying instructional materials, including instructional videos (housed on ISAN's YouTube page). Species such as spotted lanternfly, murder hornet, marmorated stink bug, spongy moth and nun moth were the featured species in individual instructional videos.
3. Clean Drain Dry Non-Motorized – ISAN reached new partners in the recreation industry to bring the CDD message to boating customers when products are purchased. Several major manufacturers for non-motorized boats and equipment continue to help promote cleaning and stopping at inspection stations. New this year, ISAN pursued different media efforts tapping into online influencers and individual search generated CDD advertisements online to drive people to cleanboater.org.
4. Working with Pacific States Marine Fisheries Commission, and Montana Fish, Wildlife & Parks, ISAN conducted a rapid response exercise on Fort Peck Reservoir, MT last fall. This 2-day event was the first dreissenid based exercise in the Missouri River Basin.

Question 3: Outline your priorities for the upcoming year.

Don't let it Loose will continue to be a priority focus for ISAN. The pet trade is a very important pathway for invasive species prevention. Our current activities working with independent pet stores, state partners, and manufacturers will continue to be maintained and new opportunities for partnerships will be pursued.