



WESTERN REGIONAL PANEL
ON AQUATIC NUISANCE SPECIES

Building Consensus in the West Workgroup

**Final Activity
Report 2011-2019**



April 2019

The Western Regional Panel on Aquatic Nuisance Species

The Western Regional Panel (WRP) on Aquatic Nuisance Species (ANS) was formed in 1997 by a provision in the National Invasive Species Act of 1996 (P.L. 101-636), the amendment to the Nonindigenous Aquatic Nuisance Control and Prevention Act (NANCPA) of 1990. The WRP is an advisory group to the Aquatic Nuisance Species Task Force (ANSTF) and is one of six Regional Panels. The WRP is composed of representatives from 19 western states, four Canadian provinces, federal agencies, tribes, private industries and non-governmental organizations. The purpose of the WRP is to coordinate ANS efforts in western North America to help limit the introduction, spread and impacts. The spread of invasive species has caused significant economic and ecological problems throughout North America raising concerns for western aquatic ecosystems and water delivery systems.

WRP Executive Committee Members 2019

Elizabeth Brown

WRP Chair and Invasive Species Program Manager, Colorado Parks and Wildlife

Glenn Dolphin

Aquatic Invasive Species Program and Clean Marinas Program Coordinator, Oregon State Marine Board

Leah Elwell

WRP Coordinator and Executive Director, Invasive Species Action Network

Joanne Grady

Aquatic Invasive Species Coordinator, US Fish & Wildlife Service, Region 6

Nathan Owens

Aquatic Invasive Species Coordinator, Utah Division of Wildlife Resources

Stephen Phillips

Senior Program Manager, Pacific States Marine Fisheries Commission

Erin Raney

Aquatic Invasive Species Coordinator, Arizona Game and Fish Department

Martha Volkoff

Aquatic Invasive Species Coordinator, California Department of Fish and Game

John Wullschleger

Fish Program Lead, National Park Service

Dennis Zabaglo

WRP Vice-Chair and Aquatic Resources Programs Manager, Tahoe Regional Planning Agency

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Introduction

The Western Regional Panel on Aquatic Nuisance Species (WRP) was established by Congress in the Nonindigenous Aquatic Nuisance Prevention and Control Act (NANCPA) of 1990. However, the WRP was formed after NANCPA was reauthorized as the National Invasive Species Act (NISA) in 1997. The WRP is an advisory panel to the Aquatic Nuisance Species Task Force (ANSTF) and is charged with coordinating aquatic nuisance species (ANS) activities in western North America. The goal of WRP is to protect limited western aquatic resources by preventing the introduction and spread of non-native nuisance species into western marine and freshwater systems through the coordinated management and research activities of state, tribal, federal, provincial, commercial, environmental, research agencies and other panels.

Over the last decade, the WRP has prioritized communication and collaboration between jurisdictions to improve management of invasive zebra and quagga mussels (ZQM). Following the discovery of quagga mussels in Lake Mead in 2007, western states and local governments began establishing mandatory or voluntary watercraft inspection and decontamination (WID) stations to prevent further mussel spread in the West. The WRP authored the Quagga Zebra Action Plan for Western Waters (QZAP) which was approved by the ANSTF in February 2010.

As WRP members worked to implement the QZAP, questions arose regarding the state and federal authorities necessary to stop, inspect, decontaminate and quarantine watercraft. This was particularly true of trailered and motorized watercraft exiting federally managed waters in the Lower Colorado River that are infested with quagga mussels. The need for a unified approach among states to improve cross-boundary collaboration focused on implementing mandatory WID programs on federally infested waters led the State ANS Coordinators to create the Western Invasive Species Coordinating Effort (WISCE) in 2011.

That same year, the National Sea Grant Law Center (NSGLC) at the University of Mississippi School of Law and the National Association of Attorneys General (NAAG) held a workshop for assistant attorneys general on invasive species in Washington, D.C. in May 2011. The workshop was designed to educate assistant attorneys general and state agency counsel on the invasive species problem in the Chesapeake Bay and provide opportunities for networking

and sharing lessons learned. Intrigued by this collaborative learning model, the WRP approached the NSGLC to host a similar workshop in the West to increase the ability of states to answer the legal questions that arose related to WID. In 2012, Oregon Sea Grant, in partnership with the NSGLC, U.S. Fish and Wildlife Service (USFWS) and the WRP, secured funding from the National Sea Grant College Program to support a “Collaborative Learning Workshop for Assistant Attorneys General, Aquatic Invasive Species Coordinators, and Law Enforcement Officials” in Phoenix, Arizona.

Following the 2012 workshop, the WRP established a Building Consensus in the West Workgroup (BC), which provided a forum for facilitated dialogue between state and federal jurisdictions conducting watercraft inspection and decontamination programs. Building Consensus working sessions included western State and Provincial ANS Coordinators, assistant attorneys generals, law enforcement officials, and federal representatives from the National Park Service. Facilitated dialogue resulted in the creation of science based standards for preventing and containing the spread of mussels overland by recreational watercraft and early detection sampling and monitoring, in addition to the development of a model legal framework for state watercraft inspection and decontamination programs. WRP workgroups and WISCE worked collaboratively to develop protocols, standards and training requirements for watercraft inspection and decontamination programs and early detection monitoring. This document provides a summary of the collective efforts of BC and its partners to protect western waters from ZQM.

Purpose of Building Consensus in the West

The WRP’s Building Consensus in the West Workgroup was a multi-year process to facilitate an ongoing discussion among State ANS Coordinators and the National Park Service to produce science-based standard protocols and procedures for preventing the further spread of zebra and quagga mussels in the west via recreational watercraft, in tandem with the development of a legal framework for watercraft inspection and decontamination programs. The overarching purpose of BC, and the resulting actions and work products, was to achieve greater consistency among western state agencies implementing watercraft inspection and decontamination for zebra and quagga mussels both in management practices and with respect to legal parameters. The idealized target was to have common capabilities among and between

managing entities to accomplish the overarching objectives of (1) achieving maximum resource protection against ZQM and other ANS, (2) providing optimal customer service to outdoor recreationists by gaining consistency in requirements across the west for the boating public, and (3) increasing efficiencies and effectiveness of ANS programs. Although BC discussions took place in several forums and different venues over the years, the dialogue focused primarily on coordination and collaboration among states and NPS. Participants recognized the importance of other federal and state coordination and cooperation interests, as well as working with local governments, tribes, and private industry to achieve these broad objectives.

The Problem: Zebra and Quagga Mussels

The quagga mussel (*Dreissena rostriformis bugensis*) and zebra mussel (*Dreissena polymorpha*), collectively referred to as dreissenids, are among the most devastating ANS to invade North American fresh waters. The first zebra mussel detection within the WRP boundary was in Oklahoma in 1993, before the WRP was formed in 1997. Kansas detected zebra mussels in the Missouri River in 2001 and then in 2003, the West started taking notice when El Dorado Reservoir in Kansas was determined to have a zebra mussel infestation.

The first coordinated western efforts to prevent ZQM fell under the 100th Meridian Initiative. Select watershed level basin teams were established which included state, federal and university partners. The Colorado River Basin Team was first to form in 2001 but was not supported and is not active today. The Columbia River Basin Team was established in 2003 and the Missouri River Basin Team was established in 2004, and are both still active today. Pacific States Marine Fisheries Commission (PSMFC) and USFWS coordinate basin team meetings.

When quagga mussels were found in Lake Mead in 2007, the West united and mobilized to protect our precious limited water resources. The arrival of dreissenids in Lake Mead and the Lower Colorado River extended their range significantly and has caused significant ecological and economic impacts to a region already challenged with water management issues. ANS can result in severe impacts to water supply and distribution infrastructure for municipal, industrial and agricultural uses. These invasive mussels negatively impact a broad range of natural resources uses including fisheries and impairing all forms of water-based recreation, particularly boating and fishing

interests. Once established, these mussels can clog water intake and delivery pipes, infest hydropower infrastructure, adhere to watercraft and pilings, foul recreational beaches, and cause many other costly problems.

It is almost certain that dreissenids do pose similar threats in the West, putting the long list of imperiled fish and other aquatic life at an even greater risk. Invasive mussels have not been detected in the vast majority of Western waters, presenting tremendous opportunities to prevent significant damage if coordinated and extensive action is taken immediately.

"Without increased and immediate action, quagga and zebra mussels will cause irreparable ecological damage to western waters and long-term costs will be in the billions."

—QZAP, 2010



Preventing the spread of zebra and quagga mussels and other aquatic nuisance species requires a high level of cooperation and coordination between federal, state, tribal, county and municipal agencies, marina operators, private entities and recreationists.

Due to the multi-jurisdictional nature of western waters, the QZAP and BC information may apply to numerous partners; as no single entity is responsible for, or capable of, implementing all of the necessary actions needed to protect our waters from invasive mussels and other ANS.

The Quagga Zebra Action Plan for Western Waters

In 2008, Senator Feinstein requested that an action plan be drafted to stop the spread of invasive mussels from Lake Mead and the Lower Colorado River into new western waters. This request was discussed at the Fall 2008 ANSTF meeting and was delegated to the WRP. The WRP formed two committees to develop the document over the next year and the Quagga Zebra Action Plan for Western Waters (QZAP) was approved by the ANS Task Force in February 2010.

The goal of the QZAP is to summarize current strategies to address the invasion of zebra and quagga mussels in the West, and to identify and prioritize the specific actions that are needed to comprehensively prevent the further spread of these mussels, respond to new infestations, and manage existing infestations. QZAP was intended to serve as a common ‘road map’ of priorities for any water or recreational management entity and their partners.

While the QZAP provided a common set of priorities for ZQM management, it is very general and in the immediate time following the document publication there was a lack of agreement among western partners as to the standards by which containment and prevention programs should be operating, and the priorities for limited federal funding for implementation. This became the main driving force for the creation of the WISCE and later BC.

The WRP did a review of the QZAP in 2013 in anticipation of updating the document upon its five-year anniversary. Members indicated that the priorities in the original document continued to be the highest priorities, so no revision was done at that time.

The WRP published a QZAP Status Update Report in 2019 to provide an update on original action items.

The Western Invasive Species Coordinating Effort (WISCE)

The Western State ANS Programs formed the Western Invasive Species Coordinating Effort (WISCE) in 2011. The purpose of WISCE is to provide an open dialogue among Western State ANS Coordinators with respect to ANS management and state program implementation. This professional group coordinates through monthly conference calls, webinars and at least one in person meeting a year. The group recognized that boaters move between states and if western states collaborated, they could provide better resource protection and improve customer service and program efficiencies.

Originally, the focus was on engaging and encouraging the federal government to implement mandatory inspections and decontamination to contain the quagga mussels at Lake Mead National Recreation Area, in the Lower Colorado River, and at Lake Pleasant in Arizona. This remains a primary focus today, but now includes the entire Lower Colorado River, Lake Havasu, Lake Powell and Tonto National Forest, as well as infestations in eastern states.

The group also spent considerable time working with the U.S. Bureau of Reclamation (Reclamation) to improve standards and enhance communication related to monitoring results and lab quality control, which resulted in the currently used Reclamation SharePoint results website.

A large focus of WISCE is on data sharing and resulted in the establishment of the Western Regional WID Data Sharing System. This System is owned and managed by Colorado Parks and Wildlife (CPW), funded by numerous agencies, and used by all western states and provinces performing WID to receive infested watercraft movement notices. There are ten western states, plus select National Parks, private industry locations and local governments using the system for all of their WID data management needs at the time of publication. WISCE continues to be a positive and continuous group that solves common problems, supports and helps each other, and facilitates solutions between states and federal agencies.

The Building Consensus Workgroup of the WRP essentially provided facilitation and travel support for four in-person meetings of State ANS Coordinators and the National Park Service to provide input into the development of a legal framework by National Sea Grant Law Center and the Association of Fish and Wildlife Agencies, in addition to developing scientifically-based programmatic standards and best management practices to enable states and their partners to implement the QZAP consistently and efficiently across the Western USA. During the five-year period described in this report, WISCE met a total of 54 times (not including other workgroup, committee or subcommittee meetings) either via conference call, webinar or in person to further the objectives of QZAP, Phoenix Action Plan and BC.



A New Idea and Partnership

In 2010, the National Sea Grant Law Center (NSGLC) and the National Association of Attorney Generals (NAAG) began collaborating to deliver much needed training on invasive species management to state Attorneys General across the country. On May 10, 2011, NSGLC and NAAG piloted their workshop format in Washington D.C. covering Chesapeake Bay issues. Fifteen individuals from five states (Delaware, Maryland, New York, Pennsylvania, and Virginia) and the District of Columbia attended the workshop. Of the fifteen attendees, ten were assistant attorneys general, two were attorneys with state agencies, two were agency personnel, and one was with a non-governmental organization. Attorneys received continuing legal education credits for attending. Following the workshop, the USFWS encouraged NSGLC and NAAG to approach the regional panels of the Aquatic Nuisance Species Task Force about expanding the program to their regions.

The WRP was one of the first regional panels to express an interest in hosting a workshop. Oregon Sea Grant (OSG) and the USFWS believed the NSGLC workshop format would be an ideal way to address the questions about WID authorities in the west and to increase trust among WRP member agencies. OSG won National Sea Grant College Program funding through a prestigious national competition to co-coordinate a western workshop with NSGLC and NAAG leadership. USFWS had coordinated the 100th Meridian Initiative and provided funding to basin teams and projects to prevent spread of invasive mussels past the 100th Meridian. Through the 100th Meridian Initiative USFWS provided matching funds and time to support the workshop and coordinated a planning team. As a suite of agencies without watercraft inspection and decontamination programs NSGLC, OSG and USFWS provided a neutral core to develop a workshop that would help partner agencies resolve questions about watercraft movements and regulations.

Legal and Regulatory Efforts to Minimize Expansion of Invasive Mussels through Watercraft Movements—A Co-Learning Workshop (The Phoenix Workshop)

To enhance collaborative learning during the Phoenix workshop, and to answer many of the questions state agencies and ANS Coordinators had about authorities

for watercraft inspections, decontaminations and quarantine, a team of NSGLC staff and law students identified several key legal issues that needed to be addressed in the region. Background papers were drafted for workshop attendees, which were further developed into five articles published in the Arizona Journal of Environmental Law and Policy and available at www.ajelp.com/seasons/spring-2013. The proceedings consist of the following articles:

- Legislative and Regulatory Efforts to Minimize Expansion of Invasive Mussels through Watercraft Movements
- Preventing the Spread of Zebra and Quagga Mussels: The Role of the Lacey Act
- Are State Watercraft Inspections Constitutionally Permissible Searches?
- Assessing the Viability of Zebra and Quagga Mussels: Legal & Enforcement Challenges
- Privacy Issues Surrounding the Tracking and Sharing of Boat Movement Information as Part of Invasive Species Prevention Programs

On August 22-23, 2012, a workshop was hosted by the Arizona Department of Game and Fish and convened in Phoenix, Arizona, by the USFWS, NAAG, OSG, NSGLC, and WRP. The purpose of the workshop was to engage Assistant Attorneys Generals (AAG), natural resource agency attorneys, law enforcement supervisors, policy makers, and ANS Coordinators from the 19 western states, interstate organizations, and federal agencies to establish clear legal and regulatory approaches and opportunities for ANS abatement and reform. Similar to the Chesapeake Bay workshop, AAGs received continuing education credits from their professional society for their participation in Phoenix. Travel support was offered for an ANS Coordinator, AAG, and law enforcement officer from each of the 19 western states to attend. OSG also broadcast the event with live opportunities for remote commenting and questions to further participation.

Day one of the Phoenix workshop consisted primarily of invasive species specialists, marina operators and law enforcement specialists educating the AAGs about invasive mussels. Day two was led primarily by the legal community. Several facilitated working sessions occurred. Facilitated group discussion focused on (1) state authorities to stop boats to inspect for invasives, (2) identifying when boats could be seized, quarantined, or decontaminated, and (3) determining how interstate cooperation could be fostered. While the aquatic invasives community met and collaborated frequently through

WRP, WISCE and 100th Meridian Initiative Teams, the involvement of the legal and law enforcement communities was unprecedented.

One clear deliverable from this workshop was the creation of the Phoenix Action Plan that articulated 26 goals with detailed needs at the national, regional, state, and local levels to minimize the expansion of invasive mussels through watercraft movements in the western United States. While QZAP listed higher level goals, the Phoenix Action Plan included group-identified obstacles largely specific to addressing watercraft at a regional scale. Action Plan goals were developed and prioritized actions that could lead to a clear legal and regulatory path to minimize expansion of invasive mussels through watercraft movements.

Meeting Phoenix Action Plan Legal Goals

Following the Phoenix workshop, the NSGLC invited the Association of Fish and Wildlife Agencies (AFWA) to the partnership. In March 2011, the AFWA Invasive Species Committee recognized a need to understand existing laws and regulations in state fish and wildlife agencies across the United States that govern the possession, movement, and other potential pathways of introduction and spread of invasive species. A draft report was created later that year, and included initial information for 20 states as of April 2012. AFWA had participated in the Chesapeake pilot workshop and it was a natural next step to merge

efforts to examine regulatory authorities to address the spread of ZQM. AFWA became a co-chair of the BC Legal Subcommittee with NSGLC adding another national leader to the team. Together they compiled existing WID laws and regulations from all fifty states.

NSGLC confirmed a dedicated interest and funding to continue to work with WRP on meeting Phoenix Action Plan Goals. Additional USFWS grant funding provided support for law students, NSGLC and AFWA staff time, and travel. NSGLC and AFWA committed to a multiple phase project: development of a model legal framework for state WID programs that would include a model law, model regulation, and model Memorandum of Understanding.

NSGLC also developed a scoring system to determine how closely individual states met the models. Western states subsequently saw a suite of changes in their WID laws, regulations and protocols that were previously unprecedented in the realm of natural resources law. In addition to the efforts described below in WRP committees, NSGLC worked with NAAG and AFWA to ensure that all model documents were written with legal and law enforcement participation from western states. AAGs from all fifty states were invited to review the model documents to ensure they were applicable across the country. Finally, model documents were vetted and approved through the AFWA invasive species and law enforcement committees.

Several ANSTF panels are working with NSGLC using the education and consensus building format, but WRP has engaged in the longest and most complex project partnership with NSGLC to date.



WRP's Building Consensus in the West Workgroup (BC)

To continue collaboration and improve dialogue related to QZAP and the Phoenix Action Plan, the WRP created the BC Workgroup. Conversations occurred in several venues or formats to meet the goals. BC workshops were developed by a core planning team and facilitated by neutral third parties. When looking towards development of model legal documents, parity of participating agencies was key to the consensus building concept. OSG made a clicker 'vote counting' system available twice to ensure that all agencies' voices were heard.

State ANS Coordinators, AAGs, law enforcement officers, NPS, USFWS, OSG, NSGLC and AFWA convened on August 13-15, 2013, in Denver Colorado for a workshop titled, "Building Consensus in the West—A Multi-State Vision for Watercraft Inspection Programs." This meeting was hosted by USFWS, OSG and NSGLC and was a joint effort between Assistant Attorney Generals and ANS Coordinators.

As had been identified earlier, one hurdle to a regional approach was that each jurisdiction used their own terminology for things like waterbody classification. The ANS Coordinators worked diligently to create a common language and define key terms and processes, that the Assistant Attorney Generals would then work into the legal framework in the next room.

One month later, on September 10, 2013, the State ANS Coordinators met in Portland, Oregon in advance of the WRP's annual meeting. The WISCE team gathered together and reviewed the meeting results from August. This facilitated session provided the ANS Coordinators an opportunity to share feedback gained from supervisors, staff and partners after the Denver meeting, and further solidify the definitions. It also provided an opportunity for states that were unable to attend

the Denver workshop, to join in the collective conversation. WISCE agreed to then dedicated its monthly meeting time to advance BC topics moving forward. The continued discussion through WISCE helped to provide a solid platform for advancing consensus.

The second BC meeting was held on February 11-13, 2014 in Denver, Colorado. Similar to the first meeting, the participant group consisted of ANS Coordinators from States, NPS, PSMFC, OSG and USFWS with NSGLC and AWFA leading a few law enforcement and legal representatives for the legal team. The goal of this meeting was to further define and reach consensus on WID training, water body definitions and classifications, as well as to discuss the model legislation, WID quality control and other pressing issues. CPW provided binders with various state WID protocol documents for discussion and analysis. The meeting was formatted in small group concurrent sessions and several deliverables were assigned to WRP sub-committees to complete.

The next in person meeting was Houston, Texas on September 16, 2014 in advance of the WRP Annual Meeting. The meeting in Houston was primarily a reporting out from the legal team and WRP sub-committees largely focused on education and outreach. For example, a WRP WID Workgroup under BC worked for almost two years to modify the CPW WID Training Curriculum as the western training standard, which was approved by WRP in 2015.

WRP's BC sub-committees and WISCE continued to meet and make progress in the upcoming years. The group joined together again prior to the WRP's Annual Meeting in Lake Tahoe on September 1, 2015.



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This meeting was generally a reporting out of sub-committee work, such as discussing the legal team's Gap Analysis, draft Model Regulations and the WID Training Manuals.

On April 19-20, 2016 BC met together again formally in Denver, Colorado. This meeting was quite different than the first two Denver meetings, in that there was only one local Assistant Attorney General present to represent the legal team, and there was much less discussion and more reporting out from WRP sub-committees. Several new WRP sub-committees were formed including field sampling, laboratory standards, industry engagement, inreach and education/outreach. CPW reported out on regional WID data sharing. The group discussed dry time, quality control, and a number of other topics.

WRP and WISCE continued to work to advance BC objectives primarily through the WRP sub-committee structure and WISCE's conference calls.

In July 2016, the WRP requested that the Western Association of Fish and Wildlife Agencies (WAFWA) support the WRP's efforts by passing a Resolution that would enable all western states to pass similar regulations which require watercraft operators to remove all water drain plugs and aquatic vegetation from watercraft, trailers and conveyances prior to leaving the water body and to prohibit the transport of watercraft overland with aquatic vegetation on board or water drain plugs in place. In support of this effort, the NSGLC inventoried state drain plug laws in January 2016 and prepared a memo on state "Clean, Drain, and Dry" provisions and related requirements in July 2016 to inform WAFWA discussions. This resolution was passed by WAFWA

and western states began adopting the regulations almost immediately.

A few months later in September 2016, at the WRP's Annual Meeting in Jackson Hole, WY, the BC participants met with the WAFWA ANS Committee, primarily composed of Western State Fish Chiefs. The joint meeting focused on educating WAFWA about the BC accomplishments to date, discussing how states can adopt the model law and regulations provisions, along with the new WAFWA Resolution, in addition to discussing ZQM prevention and containment priorities throughout the West. Many of the State Fish Chiefs stayed for the entire WRP meeting and dialogue continued on throughout the week.

Throughout 2017, many members of WRP and WISCE engaged with the U.S. Department of the Interior (DOI) on their Safeguarding the West Initiative. This effort was aimed at providing further federal support and highlighting areas in which improvement is needed from DOI Bureaus related to implementing the QZAP.

The BC workgroup met for the fourth and final facilitated meeting in New Mexico on April 4-6, 2017. There were no AAGs present, and law enforcement was represented by one officer from Utah Division of Wildlife Resources. The goals of the meeting were to advance increased economies and efficiencies for agencies administering watercraft inspection and decontamination programs, consistencies in messaging and experiences for recreational boaters, and standard protocols and definitions for waterbody classification, monitoring and regulations among western states.

Later in the year, there was a 'strategic pause' of the federal ANS Task Force which inhibited the WRP's ability to meet formally. The WISCE team met in San Diego, CA on September 12, 2017 to continue advancing regional objectives of QZAP and BC.

Under the leadership of the WRP Chair, Vice-Chair, Coordinator, and Executive Committee, the BC subcommittees continued to work through 2017-2018 to complete their objectives. The WRP published the Sampling Field Protocol and Lab Standards in October 2018. The NSGLC published the Model MOU and final Gap Analysis in December 2018. The WRP Executive Committee voted on October 23, 2018 to produce this BC Activity Report, along with the QZAP Status Update Report. These decisions were communicated to, and supported by, the WRP membership at the business meeting on October 25, 2018 in Tacoma, Washington.



Zebra Mussels

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Funding Building Consensus in the West

A tremendous amount of time and in-kind contributions have been made by State ANS Programs, USFWS, NPS, NSGLC, OSG and AFWA to achieve the accomplishments outlined in this report. A grant from USFWS to the OSG provided funding to pay for a professional facilitator, and travel support for participants and presenters. Another grant was provided for legal services from NSGLC, which complemented funding provided by the National Sea Grant program. Finally, grant funding was provided by USFWS to WRP's Coordinator, the Invasive Species Action Network, and PSMFC to provide facilitation services for in-person BC meetings. Additionally, PSMFC received USFWS grant funding to teach WID training, and to support the westernais.org website which houses training materials and documentation from BC.

Process for the BC Activity Report 2011–2019

Following the WRP Annual Meeting in Tacoma, WA in October 2018, and at the direction of the Executive Committee and Membership, the WRP Chair updated an ongoing BC decision items spreadsheet which was compiled from each individual BC workshop

report (Denver I, II, III and New Mexico IV), organized by category and subsequently copied the original report decision item text into this document by category. The only changes that were made to the text in the following sections was to correct grammatical errors in the meeting reports. No content changes were made in transferring information from BC meeting reports to this summary document. The WRP Chair drafted the supporting text and the WRP Executive Committee, WISCE and NSGLC reviewed the entire document.

In early 2019, the WRP conducted a survey of State ANS Coordinators which inquired about implementation of QZAP and BC accomplishments. The survey results, and this document were then routed through

WRP Executive Committee members and State ANS Coordinators for additional feedback.

WISCE met in person on January 29–31, 2019 in Denver, Colorado to further discuss this BC Activity Report, as well as to refine BC decision items and discuss QZAP implementation priorities for the future. The draft report was then circulated through USFWS, OSG and NSGLC for input, and a final draft was then circulated to BC participants. The WRP discussed this report on its all member teleconference on April 9, 2019 and subsequently approved it as final on the Executive Committee call on April 15, 2019.

The WRP Chair presented this Building Consensus Activity Report at the following events:

- **Association of Fish and Wildlife Agencies**—March 2019
- **WRP All Member Call**—April 2019
- **ANSTF Spring Meeting**—Hosted by WRP at Lake Tahoe—May 2019
- **Western Governors Association Annual Meeting**—June 2019
- **Western Association of Fish and Wildlife Agencies (WAFWA)**—July 2019
- **WGA Invasive Mussel Forum**—August 2019
- **WRP Annual Meeting**—October 2019
- **Colorado River Fish and Wildlife Council**—November 2019
- Other appropriate partner events as opportunities arise

Consensus Items

The following pages document the collective agreements of BC participants in relation to water body monitoring, and watercraft inspection and decontamination. The consensus items listed in this document are derived from the documentation from each BC meeting that has been reviewed and agreed upon by western State ANS Coordinators and participating partners. These include definitions, protocols, standards and guidance for those agencies working to prevent or contain the spread of invasive zebra or quagga mussels, and other ANS.

Water Body Sampling and Monitoring

The following definitions, water body classifications, protocols, standards and guidance were documented through the BC process by participants related to sampling and monitoring of waters for invasive zebra and quagga mussels.

Definitions

- **Verification**—The scientifically-based process to confirm the presence of ANS.
- **Detection, detect or detected**—The verified presence of ANS.
- **Minimum to verify detection and the identity of a given suspect organism:**—
The scientifically based process to confirm the presence of ANS which must include two independent results from the same sample using scientifically accepted techniques. Scientifically accepted techniques may be cross polarized microscopy, PCR or gene sequencing on the organism tissue.



BC Meeting IV Participants—April 2017



- Currently, eDNA is not a scientifically accepted technique to verify a dreissenid mussel detection.
- **Sampling event**—Samples collected on one day in a unique water body—each sample has a unique identifier/label, and all equipment must be decontaminated between sampling events.
- **Subsequent**—Any positive results should require additional sampling events to verify the initial detection (because of potential contamination). Subsequent means samples taken on different days, or another sample not taken on the same day after the previous sampling event using decontaminated equipment. Dedicated nets should be used for any water bodies categorized as inconclusive, suspect, positive or infested.

Waterbody Classifications

- **Not Sampled**—Waters that have not been monitored.
- **Undetected/Negative**—Sampling/testing is ongoing and nothing has been detected or nothing has been detected within the time frames for delisting.
- **Inconclusive** (temporary status)—Water body has not met the minimum criteria for detection.
- **Suspect**—Water body that has met the minimum criteria for detection.
 - Trigger for Management Action
- **Positive**—A minimum of one subsequent sampling event that meets the minimum criteria for detection. Positive must include the initial detection plus at least one subsequent detection for a total of 2 verified detections.
- **Infested**—A water body that has an established (recruiting or reproducing) population of ANS.

De-listing a Water Body for Zebra or Quagga Mussels

- **Inconclusive**—1 year of negative testing including at least one sample taken in the same month of subsequent year as the positive sample (accounting for seasonal environment variability) to get to undetected/negative.
- **Suspect**—3 years of negative testing to get to undetected/negative.
- **Positive**—5 years of negative testing to get to undetected/negative.
- **Infested**—Following a successful eradication or extirpation event including a minimum of 5 years post-event testing and monitoring with negative results.

Communications

- **Not Sampled**—As necessary, communications about which water bodies are not monitored.
- **Undetected/Negative**—As necessary, communications about which water bodies are monitored.
- **Inconclusive**—ANS coordinator notifies key individuals within region (need to know basis, ANS coordinators).
- **Suspect**—Informal or formal notification within region (western ANS coordinators, public).
- **Positive**—Formal notification system (ANS coordinators, USGS NAS, public).
- **Infested**—Formal notification system (ANS coordinators, USGS NAS, public)

Frequency, Quantity, and Quality of Sampling and Monitoring

Monitoring sites should be concentrated at locations with the highest risk of introduction potential from watercraft and risk of establishment based on habitat suitability. Frequency of sampling should be based on a risk assessment that includes risk of introduction from watercraft and risk of establishment based on habitat suitability values. The scale could be basin-wide, statewide, lake or reservoir specific.

When monitoring a water body, both plankton tows and settlement traps or substrate sampling will be the minimum standardized methods. A substrate check is defined as physically and visually examining natural or artificial surfaces already in the water, versus hanging a settlement trap.

Minimum for Undetected/Negative

- Frequency = One sampling event per year that includes plankton tows, to be taken within the temperature range suitable for spawning.
- Procedure—Look for veligers (plankton tows) and attached mussels (artificial substrate, natural substrate and shoreline surveys).
- Can't skip years—must sample annually.
- If not sampled, then goes into the not sampled category.
- Quantity should be based on water body size (need metric to standardize).
- Shoreline surveys required once per year.
- Setting artificial substrates is not required.



Inconclusive

- Frequency = Monthly plankton tows based on spawning temperature range.
- Quantity = Number of sampling sites should be based on the water body's size.
- Substrates deployed and checked monthly.
- Shorelines surveys performed monthly.

Suspect or Positive

- Frequency = Monthly plankton tows based on spawning temperature range.
- Substrates deployed and checked monthly.
- Shoreline surveys performed monthly.

Infested

- One sampling event with multiple age classes = infested listing.
- Substrates and Shorelines required.
- Plankton tows are optional once reproducing population has been confirmed.

Third Party Testing for Sampling and Monitoring

ANS coordinators were asked if they would change the classification of a water body based on results from a third party sampling the water body and that other entity finding veligers or eDNA. All responded that they would not change the classification, but that they would likely respond by increasing state sampling efforts. The group achieved consensus on the following language: *“At the Department’s discretion, third party or other entity sampling may be considered if that sampling follows the protocols of the Department.”*

It is recommended that if third party field monitoring and/or lab testing is taking place, the third party enters into a formal MOU or agreement with the state to clarify roles and responsibilities for verification of detections, communications and dissemination of information and/or results to staff, partners and the public. State ANS Management Plans and rapid response plans should also clearly detail management actions, authorities, roles and responsibilities should a detection be verified.

WRP Monitoring and Lab Publications

Several WRP sub-committees or workgroups were formed to create and finalize field and lab protocol documents. Workgroups were volunteers that were subject matter experts, including Lab Managers from universities, private industry, federal and state labs; Field Sampling Program Leads; and ANS Coordinators.

1.) *Dreissenid Mussels Sampling and Monitoring Protocol (WRP, 2018)*

2.) *Laboratory Standards for Dreissena Veliger Analysis (WRP, 2018)*



Checking rope and artificial substrates for juvenile “settler” mussels.



A plankton tow for the initial life stage of invasive mussels known as veligers.

Watercraft Inspection and Decontamination

The following definitions, protocols, standards and guidance was documented through the BC process by participants in relation to watercraft inspection and decontamination to prevent and/or contain the spread of invasive zebra and quagga mussels.

Definitions

Prevention

To stop or attempt to stop the introduction of ANS.

Containment

To stop or attempt to stop ANS from spreading.

Watercraft Inspection and Decontamination (WID)

Any program which seeks to prevent the spread of ANS on a conveyance by requiring that the conveyance be inspected and potentially decontaminated.

Watercraft Interdiction Program (WIP)

Any program which seeks to prevent the spread of ANS on a conveyance by requiring that the conveyance be clean, and to the extent practicable, drained and dried prior to launching or upon exit.

Authorized WID or WIP Location

A location or an address where an authorized inspector may be available to conduct an inspection and/or decontamination.

Authorized Inspector

One who has a valid certification for aquatic invasive species inspections and decontaminations that meets the minimum standards established by the most current *Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination for Dreissenid Mussels in the United States* (UMPS).

Self-inspection (voluntary or mandatory)

An inspection conducted by a conveyance owner, operator or transporter in which the individual cleans, drains and dries their own conveyance.

- In some cases, information may be collected about the conveyance and may be accompanied by a state issued document.
- **Note:** Self-inspection is not decontamination.

Self-certification

Boater conducts “Clean, Drain, and Dry” pre-launch

- **Note:** Self-certification is not decontamination.

Inspector

An individual that is certified to perform watercraft inspections for ANS.
(See *Authorized Inspector*)

- Level I—certification in inspection only

Inspector and Decontaminator

An individual that is certified to perform inspections and decontaminations for ANS.

- Level II—certification in both inspection and decontamination



Trainer

An individual that is certified to train others to perform watercraft inspections and decontaminations for ANS.

- Level III—certification to train others in inspection and decontamination.

Inspection

Process to determine whether a conveyance presents an ANS risk.

Inspection Screening Interview

Asking a conveyance operator a series of questions prior to launching or entry that are designed to determine the level of risk based on the recent history of use. This should be an element of every inspection program.

Seal

A tamper-proof device that locks the watercraft to the trailer when affixed to a conveyance to indicate that the watercraft has not been launched since it was inspected and/or decontaminated, and is accompanied by a valid seal receipt.

Valid Seal Receipt

A document issued by an authorized inspector in conjunction with a seal that contains a number matching the serial number on the seal, and information regarding the status of the conveyance relative to absence of ANS (e.g. date, location and type of last inspection or decontamination).

Decontamination

A treatment with the intent to kill, destroy, and remove ANS, to the extent technically and measurably possible;

- *Full Decontamination*—Applied to watercraft with suspected mussels, mussels attached, or other ANS suspected. Flush engine with hot water as defined in UMPS, internal compartments and equipment that may have come in contact with water. Hot water rinse of the hull and use of high pressure to remove attached mussels or other ANS. Physical removal of adult mussels or suspect mussels/ANS.
- *Standing Water Decontamination*—Hot water flush or rinse/spray as defined in UMPS of compartments with standing water and/or exterior.
 - A hot water wash is considered a standing water decontamination.

- *Plant Decontamination (and other suspected aquatic invasive species)*—Apply hot water as defined in UMPS to kill plants that can't be physically removed by hand during inspection.

Documentation (watercraft certification)

A process whereby conveyances are determined to present minimal risk based on inspection, decontamination or drying time and receive some visible form of certification of that fact (e.g., tag/seal, band, paper certificate, receipt, etc.).

- **Note:** It is important to note that is not possible to certify watercraft are “free of mussels or ANS free”, only that the most currently available and effective protocols and standards have been applied to inspect for, and/or kill and remove all visible mussels.

Dry

No standing water; opposite of wet; interior/ exterior; boater is exposing the watercraft to increase drying. A watercraft is completely dry if there is no detectable water on the exterior or interior surfaces of the watercraft, and no dampness can be felt on the interior of the watercraft; and water-related equipment is completely dry if there is no detectable water on the equipment and no dampness can be felt on the equipment.

Drying Time

The amount of time out of the water required to ensure all ANS are killed through desiccation.

- Drying time is not a substitute for decontamination.

Exclusion

A conveyance that has not been or cannot be decontaminated or meet the quarantined / drying time standard and may be excluded from launching.

Quarantine

The act of securing a watercraft for the purpose of ANS management or enforcement. This can be voluntary or mandatory act of securing a watercraft.

Impound

A law enforcement action to seize a watercraft and hold it to ensure the drying time is met and/or decontamination is performed.

Control

To mitigate against the effects of ANS through reductions in the species population size.

Reciprocity

The recognition of conveyance inspection and/or decontamination by several or all jurisdictions when similar protocols and standards are employed by similarly trained professionals for the purpose of increasing the efficacy of WID programs, enhancing resource protection, and improving boater experience and communication at the discretion of the states.

Low Risk Conveyance

The state or managing agency may use discretion to determine risk based on species of concern at that specific location or statewide.

- Conveyance with a valid seal and receipt from an undetected or negative water for all ANS, or returning to the same water body, or
- Cleaned, drained and dry, or
- Has been out of water for more than 60 days.

***Communication to the watercraft operator of a LOW RISK conveyance—seal and receipt MAY make a future inspection quicker.*

High Risk Conveyance

- Any conveyance or piece of equipment that has no seal and no receipt, or
- Any conveyance or piece of equipment is documented (with seal and receipt) and has operated on or in any suspect, positive, or infested water body, or
- Any conveyance that is suspected of having ANS, or
- Any conveyance that originates from outside the state, or
- Any watercraft or equipment that is not clean, drained and dry, or
- Any conveyance in which the operator or hauler is non-compliant, non-cooperative, or appears to be deceptive.

***Communication to the watercraft operator of a HIGH RISK conveyance—watercraft will likely be inspected and may require decontamination.*

Fouled Conveyance

- Any conveyance known to be contaminated or previously decontaminated for ANS.
- Notification of any fouled conveyance will occur among destinations or travel states.
 - **Note:** If the watercraft is destined for another state, the boater should be notified that the state will do a notification.

***Communication to watercraft operator or hauler of a fouled conveyance—watercraft will be inspected and potentially decontaminated (prior decontamination for fouled conveyances doesn't exempt watercraft from being re-inspected or re-decontaminated).*

Watercraft Inspection and Decontamination Protocol and Procedures

WID protocols and requirements are based on the *Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination for Dreissenid Mussels in the United States III (UMPS)*, and are documented and incorporated into the *Student Training Curriculum for Watercraft Inspectors and Decontaminators to Prevent and Contain the Spread of Aquatic Invasive Species*, *The Trainer Manual for Aquatic Invasive Species Inspection and Decontamination Courses*, and the Regional WID Data Sharing System. It is recommended that all western states follow the procedures described in the above documents in accordance with state laws and regulations.

Third Party Providers for Watercraft Inspection and Decontamination

The minimum protocols and standards each state should require for third party providers to ensure inspections meet some minimum standard (e.g., UMPS, agency training manual, etc.) as well as evaluation include:

- The *Student Training Curriculum for Watercraft Inspectors and Decontaminators to Prevent and Contain the Spread of Aquatic Invasive Species* or agency training manual will serve as the third party provider manual.
- Implement the same protocols as “state” certified inspectors.
- Seals and receipts from third party providers should allow state inspectors to identify them as such (i.e. different color or label).

- Third party providers (i.e., entities that inspect watercraft as contractors) should be differentiated from “state” inspectors (i.e., employees of state agencies that administer WID programs).
- Individuals inspecting their own watercraft [self-inspection] is not considered a third party provider

Seals and Receipts

States agreed that all watercraft inspected or decontaminated at suspect, positive or infested waters which are destined for a different state should be sealed and given a receipt. All seals should stay on watercraft until they reach their destination state, and receipts should be kept with the watercraft. The only exception might be a watercraft that has been re-inspected, re-decontaminated, and re-sealed.

All watercraft leaving positive or infested waters should have a seal and receipt following inspection or decontamination, if destined for another state. This is particularly important if it received no decontamination or anything other than a full decontamination as described in Umps. The receipt should note the partial decontamination or exactly what was and what was not done.

Day-use watercraft that are destined for out of state must be sealed and have accompanying paperwork or receipt information that will note the watercraft was not decontaminated.

The purpose of the receipt is a communication tool. The purpose of the seal is described below:

- The seal tells the next inspector that the watercraft has not launched since it left the inspection station, and the receipt provides information about the previous launch, inspection and/or decontamination.
- The color of the seal is irrelevant—the seal locks the watercraft to the trailer telling the next inspector it hasn’t launched since the seal was applied, and the receipt that conveys information about the last time the watercraft was in the water.
- Seals and receipts need to occur together for interstate communication purposes.
- **Note:** Some states issue receipts without applying seals (e.g., if the seal cannot be attached to the watercraft).



Drying Time

There is not consensus among western states regarding the use of drying time and therefore drying time will be implemented at the state’s discretion. The time requirement varies widely depending on temperature and humidity conditions for the specific geographic area the watercraft is being held out of the water. The most current published *Dry Time Calculator*, found at www.westernais.org, can be used as guidance to justify the length of time in impoundment or quarantine.

The minimum standard for watercraft moving between jurisdictions is based on the destination state standards, accounting for the time in transit. Boats with seals and receipts that requires quarantine in one state may be accepted for the tenure of the quarantine in the destination state, assuming the destination state permits the use of dry time.

States agreed to require a dry time after decontamination of a complex watercraft that has attached mussels from an infested water body. However, there are numerous legal and operational challenges with implementation of a mandatory dry time following decontamination.

There are two studies on veliger survivability that demonstrate they can survive in standing water.

- Heavily encrusted (groupings of species, three dimensional), large, complex watercraft from infested waters should require full decontamination followed by a minimum 30-day dry time.
- Simple watercraft with no attached mussels do not require mandatory dry times.
- Drying time is not decontamination.

Watercraft Inspection and Decontamination Training

Watercraft inspection training (WIT) began at Lake Mead in 2002 as an education and prevention program created and implemented originally by volunteers and later formalized by the PSMFC through the 100th Meridian Initiative within the USFWS. The training was expanded and was taught across the western US and evolved over time.

In 2009, Colorado Parks and Wildlife (CPW) published the *ANS Inspection Handbook* based on UMPS and WIT. Subsequently, CPW published the *Boat Compendium for ANS Inspectors*, *ANS Decontamination Manual*, and *Containment Manual for Zebra and Quagga Mussels*. These training documents were adopted and personalized by numerous western and eastern states. In 2012, CPW combined these resources into a comprehensive *ANS Curriculum for WID Inspectors and Decontaminators* (Student Manual) and in 2014, CPW released *The Trainer Manual for Aquatic Invasive Species Inspection and Decontamination Courses* (Trainer Manual).

In 2014, the WRP Building Consensus Workgroup reviewed the new CPW WID Student and Trainer Manual. The content was changed based on group consensus and was then taught by PSMFC at WIT training classes. A WRP BC sub-committee updated both the CPW WID Student and Trainer Manuals for west-wide use. The final documents were published in 2015 and updated in 2016.

During this period, the WRP workgroup contributed to and reviewed the updated *Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States* UMPS III which was published by PSMFC in 2016.

Most recently, a supplemental document to *UMPS III* was released by PSMFC and Invasive Species Action Network (ISAN) which reviewed the chemical use as a means for decontamination. At this time, chemicals are not recommended for WID. Decontamination of recreational watercraft should only consist of hot water.

Training Standards

The elements that should be included in the WID training include the following and should be provided by the states or managing agency. This information



is provided in greater detail with instruction in *The Trainer Manual for Aquatic Invasive Species Inspection and Decontamination Course*.

- *The Student Training Curriculum for Watercraft Inspectors and Decontaminators to Prevent and Contain the Spread of Aquatic Invasive Species.*
- Species Samples
 - Ensure a zebra and quagga mussel focus
 - Provide supplemental categorical aspects (e.g., bait) of different species
 - Species associated with particular habitats
 - Species listed in regulation as ANS
- Outreach materials
 - *Don't Move a Mussel II* (PSMFC, 2011)
 - Western States Rack Card (PSMFC, annually)

Training Components

- A standard training agenda.
- A standard set of PowerPoint slideshows that mirror the student manual chapters.
- The *Don't Move a Mussel II* video which explains the issues caused by invasive mussels.
- A hands-on training of watercraft anatomy.
- A hands-on training of inspections where the inspectors practice applying seals and receipts, recording data, and performing the step by step inspection procedure; including practice talking to 'boaters' to educate them how to inspect their own vessels and keep them clean, drained and dry.
- A hands-on training of decontamination procedures including standard operating procedures, practice using attachments, and

performing plant, standing water (engine flush, compartment flush and ballast tank flush), bait and full decontaminations.

- A standard exam.

Inspector—Level 1

Inspectors must complete a minimum of 8 hours of training, where they participate in practical inspections. All students must receive a passing score of 80% or better on the final written exam to pass the class. The training must include the five standard modules or chapters/slideshows.

- 1.) Introduction and Western State ANS Programs
- 2.) Biology (zebra and quagga mussels, and other ANS)
- 3.) Watercraft 101
- 4.) Inspection Procedures, including data collection
- 5.) Overview of Decontamination, including triggers for decontamination

Inspector—Level 2

Inspector and decontaminator certificates are often provided in a single 16-hour course. It is recommended that students be trained in both inspection and decontamination in the same two-day course, rather than different classes for each. In addition to inspection requirements, students being trained in decontamination must participate in all decontamination sessions (approximately 5 hours of training, including demonstration of practical knowledge by taking part in practical decontaminations). All students must receive a passing score of 80% or better on the final written exam to pass the class. The training must include additional inspection practice, along with standard decontamination modules or chapters/slideshows:

- 1.) Additional inspection practice
- 2.) Triggers for decontamination
- 3.) Types of decontamination and step-by-step decontamination procedures
- 4.) Working knowledge of watercraft anatomy, form and function

Inspector—Level 3

Inspector Level 3 trainers can train inspectors and decontaminators. It is recommended that personnel previously performing trainings for inspection or

decontamination attend a trainer's course to learn the most up to date regional WID training standards and materials. When attending a Level 3 course is not feasible, it is recommended that trainers use the newest WRP and PSMFC curriculum for students and follow the standard set forth in this document.

To be eligible for the trainer course, an individual must first pass the course(s) in inspection and decontamination. Requirements to become a trainer include:

- Current certification in inspection and decontamination (WID Level 2)
 - Must be able to demonstrate proficiency performing both inspection and decontaminations and have past experience doing so
 - Should have decontaminated at least 1 mussel infested watercraft or a surrogate
- Complete the ANS WID Trainer's course (Level 3)
 - Must have current knowledge of student curriculum and watercraft compendium
 - Must review the effective adult learning materials prior to attending class
 - Trainers must demonstrate the ability to effectively teach this course in both the classroom and practical sessions

All trainers must teach the current procedures and not procedures from former years. It is the responsibility of the trainer to obtain and use the latest training materials. These materials are available at www.westernais.org or from the managing agency.

Recertifying Inspectors, Decontaminators and Trainers

Minimum requirements for inspection and decontamination re-certification include at least 2 hours of training comprised of the following:

- 2 hours of in-class or online training covering four modules:
 - 1.) Program and/or regional ANS updates
 - 2.) Biology
 - 3.) Inspection
 - 4.) Decontamination
- Receive an 80% or better score on each training module exam

Watercraft Inspection and Decontamination Quality Control

Every WID program should have an element of Quality Assurance or Quality Control (QA/QC) and “secret shoppers” should be a part of that evaluation. QA/QC provides an assessment of WID program implementation. Different aspects of WID programs can be assessed and compared. For example, an assessment could indicate if there is something that needs to change programmatically or instructionally to improve program implementation.



The overall QA/QC program goal:

- Protect aquatic natural resources
- Further legitimize aquatic invasive species WID programs
- Incentivize model inspector behaviors
- Implement best management practices
- Implement consistent WID standards and protocols
- Treat the public with professionalism

Two key ways a QA/QC program could be used:

- 1.) Individual inspectors—To attain desired improvements and to correct deficiencies as program leaders work with individual inspectors.
 - a. Foster communication
 - b. Provide information to enhance understanding of standard protocols
 - c. Potential disciplinary action
- 2.) Program—To identify a gap or deficiency in the program or training.

The minimum components of an inspection on an undocumented conveyance (no seal/receipt) inspection station QA/QC evaluation:

- WID station location details (visibility, safety, signage, volume at time of visit)

- Initial contact (establishes authority, customer service elements, safety, program introduction)
- Interview (message consistency, history/use of conveyance, boater practices)
- Outreach (knowledge of Clean, Drain, Dry)
- Inspection elements (physical and visual inspection)
- Seal applied correctly and receipt filled out correctly
- Closeout (reinforce Clean, Drain Dry and drain plug transport rules)

There is still a need to develop guidelines and criteria for sharing QA/QC information. State ANS Coordinators acknowledged that each WID program is different, and that ongoing QA/QC will occur. All messaging about WID programs should acknowledge that imperfections exist, yet programs are successful despite them. For reciprocity purposes, ANS coordinators want to ensure they decontaminate when needed and they apply seals when needed. QA/QC demonstrates an evaluation component of a program to legislators and others, thus enhancing credibility. QA/QC should be used as a learning tool. Concern was expressed by some relative to outside contractors evaluating inspectors. It was noted that more discussion was needed relative to a western team evaluating all western state WID programs. On the following page is a summary of quality control methods and the purpose of utilizing each method.

QA/QC Method	QA/QC Purpose
Secret shopper	Follow-up for complaints in the field Improve efficacy of inspections/understand how the agency can help the inspectors Test attitude and competence Identify deficiencies
Phone calls (visitor centers/state park offices, certified inspectors)	Assess customer service being provided Assess comfort level of inspectors (only applies if the person being called is an inspector—in most cases this is to assess competency of those in visitors' centers or offices that are not part of the ANS program but answer a variety of questions on numerous topics as a customer service rep) Assess message uniformity Assess competence of hotline managers in answering questions
Announced site visits/ Visitor center drop-ins	Answer questions; assess crew needs; follow up on deficiencies Assess if people are following protocols (uniform compliance)
On the Job Training	Instruct individuals on how to do the job correctly and safely Convey acceptable standards while on the job
Unannounced site visits/ spot checks	When you don't have secret shopper program (or in conjunction with a secret shopper program) Improves inspector morale by acknowledging the importance of the program through quality checks
Actual Testing/Routine Quizzes	Must pass the test to be an inspector
Direct Mailing Boater Survey (return mailer or pass out card with link to survey)	For someone that received an inspection in the past to evaluate the experience
Cameras	Verify compliance following protocols
Boater interviews	Customer service and compliance



Legal Framework

Per QZAP Action Item 2.4, ANS programs need to have consistent legal provisions and guidance in order to effectively implement WID programs to prevent and contain ZQM and other ANS. As described previously, the NSGLC and AFWA provided technical legal guidance to western state ANS programs. Three publications resulted from this work (model legislative provisions, model regulations, and model MOU) and combined comprise the model legal framework for state watercraft inspection and decontamination programs. These legal pieces have been instrumental in gaining alliance between programs. Additionally, comparisons and gap analysis of state legislative provisions has defined and guided improvements that could be sought to strengthen programs and partnerships.

The NSGLC authored a law review article entitled “Working Together to Combat Invasive Species Threats: Strategies for Facilitating Collaboration between the National Park Service and the States” which highlighted, through the lens of invasive species management, the legal options available to facilitate federal-state cooperation across the National Park System boundaries. The article was published in a special issue of the Natural Resources Journal celebrating the National Parks Centennial. For more information, please visit <http://nsglc.olemiss.edu/projects/model-legal-framework/index.html>.

Parking Lot Action Items

State Wildlife Action Plans—AFWA recommended that states include ANS prevention, containment and monitoring in State Wildlife Action Plans (SWAP). As of January 2019, sixteen of nineteen western states reported describing ANS in the current SWAP plan.

Education and Outreach—A BC webinar on current education and outreach campaigns in the west was conducted in August 2014. The following year, an education sub-committee of BC was formed and worked to engage non-motorized guides and users to change behavior to clean, drain and dry. The sub-committee met from 2015–2016. While great learning was had, there were no deliverables from this committee and it was dissolved in 2017. BC education objectives align with QZAP in that the overarching goal is to gain broad public and political support to build capacity to implement programs

which encourage positive behavior change in recreational users. The WRP Education and Outreach Committee was formed in 2018 to continue on this path. A WRP webinar on outreach campaigns is scheduled for September 2019.

Inreach—An inreach sub-committee of BC was established in 2016 to draft a communications plan, which was subsequently edited by WISCE and the WRP Executive Committee in 2017–2018. A final draft was never approved due to a lack of clarity related to the responsibility and resources for implementation. The WRP Executive Committee is discussing developing a comprehensive communication plan for the Panel, which would include BC and other committee or workgroup efforts.

Industry Engagement at Infested Waters—An industry engagement sub-committee of BC was formed in 2017 with the goal of engaging marina owners and industry personnel at infested waters to implement WID and use the regional WID data sharing system. A secondary goal was to identify barriers to collaboration and communication in relation to making sure watercraft leave Clean, Drain, Dry, and lessening watercraft leaving with attached mussels. The sub-committee aimed to find new ways to incentivize voluntary participation in WID programs and to explore methods to require participation through permitting or other agreements for guides, concessionaires, and other businesses. The sub-committee met only once and had no deliverables. The WRP will consider similar strategies for engagement in future QZAP planning.

Law Enforcement—A law enforcement workgroup was discussed at the New Mexico BC Meeting in 2017 but no action was taken to create one following the meeting. This concept has also been discussed with WAFWA and AFWA ANS Committees.



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References and Products from Building Consensus in the West

An Action Plan to Implement Legal and Regulatory Efforts to Minimize Expansion of Invasive Mussels through Watercraft Movements in the Western United States (Phoenix Action Plan)

Building Consensus in the West: A Multi-State Vision for Watercraft Inspection Programs

- Meeting Summary: Denver I—August 13–15, 2013
- Meeting Summary: Denver II—February 11–13, 2014
- Meeting Summary: Denver III—April 19–20, 2016
- Meeting Summary: New Mexico IV—April 5–6, 2017

Legal Framework

- Preventing the Spread of Aquatic Invasive Species by Recreational Boats: Model Legislative Provisions & Guidance to Promote Reciprocity among State Watercraft Inspection and Decontamination Programs (Otts, S. and P. Nanjappa, eds. 2014)
- Model Regulation for State Watercraft Inspection and Decontamination Programs (Otts, S., and P. Nanjappa, eds 2016)

- Model Memorandum of Understanding for Watercraft Inspection and Decontamination Programs (Otts, S., 2018)
- From Theory to Practice: A Comparison of State Watercraft Inspection and Decontamination Programs to Model Legislative Provisions (Otts, S., 2018)

Monitoring

- Dreissenid Mussels Sampling and Monitoring Protocol (WRP, 2018)
- Laboratory Standards for Dreissena Veliger Analysis (WRP, 2018)

Watercraft Inspection and Decontamination Protocols and Procedural Standards

- Uniform Minimum Protocols and Standards for Watercraft Inspection and Decontamination Programs for Dreissenid Mussels in the Western United States (Phillips and Elwell, 2016)
- The Student Training Curriculum for Watercraft Inspectors and Decontaminators to Prevent and Contain the Spread of Aquatic Invasive Species (Brown, 2016)
- The Trainer Manual for Aquatic Invasive Species Inspection and Decontamination Courses (Brown, 2016)
- A Review of Chemical Use Associated with Watercraft Decontamination to Address Aquatic Invasive Species; a special supplement to UMPS (Phillips and Elwell, 2018)

Acronyms

AFWA—Association of Fish and Wildlife Agencies

ANS—Aquatic Nuisance Species

ANSTF—Aquatic Invasive Species Task Force

BC—Building Consensus in the West Workgroup

BOR—Bureau of Reclamation

CPW—Colorado Parks and Wildlife

DNA—Deoxyribonucleic acid

eDNA—Environmental deoxyribonucleic acid

DOI—Department of the Interior

ICS—Incident Command System

MOU—Memorandum of Understanding

NAAG—National Association of Attorney Generals

NPS—National Park Service

NSGLC—National Sea Grant Law Center

OSG—Oregon Sea Grant

PSMFC—Pacific States Marine Fisheries Commission

QZAP—Quagga Zebra Mussel Action Plan for Western Waters

SWAP—State Wildlife Action Plan

UMPS—Uniform Minimum Protocols and Standards

USFWS—US Fish and Wildlife Service

WAFWA—Western Association of Fish and Wildlife Agencies

WID—Watercraft Inspection and Decontamination

WIDS—Watercraft Inspection and Decontamination Station

WIDT—Watercraft Inspection and Decontamination Training

WIP—Watercraft Inspection Program or Watercraft Interdiction Program

WIS—Watercraft Inspection Station

WIT—Watercraft Inspection Training

WISCE—Western Invasive Species Coordinating Effort (a.k.a. Western State ANS Coordinators)

WRP—Western Regional Panel on Aquatic Nuisance Species

ZQM—Zebra and Quagga Mussels



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