





















Quagga Zebra Action Plan Progress Assessment 2024




Status Key:





Completed = Action Item Addressed 	In Progress = Elements of Action Item Addressed and On Track for Completion 	Planning = Elements of Action Item in Discussion 	Evaluating = Elements of Action Plan Targeted for Future Planning 	No Progress = Action has not been Addressed 
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Strategy A – Increase Capacity to Prevent and Manage Invasive Mussels		
Action Item	Evaluation Measure	Status
A.1 Increase funding for the Western Regional Panel on ANS to serve as the main coordinating body for quagga and zebra mussel communication, collaboration, and management in the West; and to create a full-time position to coordinate the implementation of QZAP 2.0.	Annual funding in FY22 and beyond = \$150,000	Planning  Detail: <u>WRP submits recommendation to ANSTF annually</u>
A.2 Establish long-term stable sources of multi-year funding to support the implementation of these recommendations in QZAP 2.0.	Legislative language or agency policy establishing multi-year agreements to support ongoing operations related to the implementation of QZAP 2.0	Planning  Detail: NISAW legislative and agency education meetings occur regularly
A.3 States should maintain, increase, and/or establish authorities for mandatory WID through the passage of laws and regulations to fill gaps per the Model Legal Framework and associated Building Consensus agreements, operational procedures, protocols, and standards.	An increase in the number of states with the authorities outlined in the Building Consensus Model Legal Framework.	Evaluating 
A.4 States should establish or increase capacity for the implementation of WID and the associated Building Consensus operational procedures, protocols and standards.	An increase in the number of permanent employees dedicated to ANS, including law enforcement. Increased state budget allocations for WID stations and monitoring with the ability to match federal grants	Evaluating 
A.5 Federal agencies should resolve gaps in legal authority and consider options to more effectively reduce the movement of aquatic invasive species onto	Congress passes the Stop the Spread of Invasive Mussels Act or other relevant legislation, regulation, policy, or MOU implemented by the federal	No Progress 





and off of federal water and to more effectively coordinate with state programs.	government.	
A.6 Develop a strategic federal funding system (subject to appropriate authorities and appropriations) in coordination with state agencies to ensure resources are being leveraged efficiently and address the highest priorities.	An established federal funding system developed and implemented cooperatively with states.	No Progress 
A.7 Engage with tribal resource managers to build capacity for ZQM management and collaborate with tribes on the implementation of QZAP 2.0.	An increase in the number of engagement activities with tribes and the number of established partnerships.	Planning  Detail: WRP Membership Committee engaging in methods to improve tribal participation in WRP
A.8 Continue to support and coordinate the Columbia River Basin Team and the Missouri River Basin Team to further the multi-jurisdictional implementation of the QZAP 2.0 in those basins.	Continuous annual funding of at least \$100,000 per basin team to support a minimum of two meetings a year (with full travel support for state participants) and including a monitoring forum. An increase in the number of rapid response exercises.	In Progress  Detail: Base funding has been maintained, and both basin teams meet annually
A.9 Establish, support, and coordinate new basin teams and plans focused on cross-jurisdictional prevention and containment strategies for the implementation QZAP 2.0.	Increased number of basin teams and basin plans (up to the eight major basins). Continuous annual funding of \$100,000 per basin team to support coordination, communications, at least one meeting per year, a monitoring forum, rapid response exercises, with full travel support for state participants.	No Progress 
A.10 Develop a process and/or mechanism to evaluate and test new technologies related to watercraft inspection and decontamination, boat movement, data sharing, communications, reporting, early detection, control, and management. Create a formalized process for methodologies to gain approval for use.	Established processes and a formal partnership with a third-party independent testing and certification entity, which includes evaluation criteria and approval mechanisms for broad adoption, evaluation, and improvement over time.	No Progress 






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Strategy B – Prevention and Containment		
Action Item	Evaluation Measure	Status
B.1 Implement or continue implementing mandatory WID for watercraft exiting positive and infested waters following the WRP inspection protocols for containment.	An increase in mandatory WID programs at infested waters; an increase in the number of agencies utilizing the Building Consensus guidance; an increase in the number of agencies following the Regional WID Student Curriculum and approved WRP inspection and decontamination procedures; an increase in the number of agencies following the Regional WID Trainer’s Manual; an increase in the number of boats being entered into the Regional WID Data Sharing System from infested waters; an increase in the number of law enforcement contacts at infested waters; and a reduction in the number of mussel-impacted watercraft intercepted at other locations.	In Progress  Detail: WISCE and others are compiling information
B.2 Establish new or continue existing WID stations on highways to provide a layer of protection between infested waters in the Colorado River Basin and the Uninfested West.	An increase in the number of roadside WID stations in the Colorado River Basin; an increase in the number of boats being entered into the Regional WID Data Sharing System; an increase in the number of inspections, decontaminations, and interceptions leaving infested waters; and an increase in the number of law enforcement contacts.	In Progress  Detail: <u>WRP submitted recommendation to ANSTF in 2021</u> WISCE compiling information
B.3 Continue and potentially expand upon the WID strategy in place to protect the Columbia River Basin.	WID station network remains in place at 2020 levels or expanded as directed by the states.	In Progress 






<p>B.4 Protect the uninfested West through the coordinated implementation of WIDS on highways and at high priority prevention water bodies across the West.</p>	<p>An increase in the number of mandatory WID programs; an increase in the number of agencies utilizing the Building Consensus guidance; an increase in the number of agencies following the Regional WID Student Curriculum and approved WRP inspection and decontamination procedures; an increase in the number of agencies following the Regional WID Trainer’s Manual; an increase in the number of boats being entered into the Regional WID Data Sharing System; an increase in the number of law enforcement contacts at infested waters; and a reduction of the number of mussel-impacted watercraft intercepted at other locations.</p>	<p>Evaluating </p>
<p>B.5 Implement mandatory WID at the main points of entry (land, sea, and air) into Alaska as a first line of defense to protect waters in the state.</p>	<p>An increase in the number of WID stations, inspections, decontaminations, and interceptions entering Alaska. An increase in agencies in Alaska using the Regional WID Data Sharing System.</p>	<p>Planning </p>
<p>B.6 Promote consistent use of the Regional WID Data Sharing System by all jurisdictions for data collection and communication between WID stations and ANS managers.</p>	<p>Maintain continued funding and uninterrupted operations over time. Increase in the number of users until all WID stations fully use the system regardless of jurisdiction.</p>	<p>In Progress </p>
<p>B.7 Upgrade decontamination units to on-demand hot water systems where appropriate per the approved WRP specifications.</p>	<p>An increase in the number of hot water decontamination units upgraded or purchased new in accordance with WRP decontamination unit specifications (2019).</p>	<p>In Progress </p>
<p>B.8 Adopt the WRP standard watercraft inspection and decontamination protocols among western agencies.</p>	<p>An increased number of agencies conducting WID following WRP standards and the regional training program.</p>	<p>In Progress </p>
<p>B.9 Refine existing watercraft and equipment inspection and decontamination protocols and standards, as</p>	<p>The WRP maintains an engaged and active Decon Think Tank committee for discussions on new</p>	<p>In Progress Detail: </p>





needed.	watercraft and refinement of procedures as needed.	WRP Think Tank regularly meets and conduct updates and review of protocols ANSTF approved multiple protocols in 2023
B.10 Implement compatible law enforcement approaches across state, federal, tribal, and local jurisdictions that support mandatory WID and other ANS management efforts.	An increase in the number of citations issued; an increase in the number of warnings issued; an increase in the number of law enforcement hours spent on ANS; an increase in the number of law enforcement contacts with members of the public regarding ANS.	Evaluating 
B.11 Develop and implement programs to inspect, decontaminate, and intercept contaminated equipment (e.g. barges, dam repair equipment, construction equipment).	The development of programming intended to intercept contaminated equipment. An increase in the number of outreach events to related industries. Increased numbers of equipment inspected and/or decontaminated.	Planning  Detail: WRP Think Tank developing (2024)
B.12 Develop and implement programs to inspect, decontaminate, and intercept commercially hauled watercraft or conveyances.	The development of programming intended to intercept commercially hauled conveyances. Increased number of commercially hauled craft intercepted, inspected, and/or decontamination; increased number of outreach events to commercial haulers and related industries; the creation and implementation of training for commercial haulers; an increase in the number of certified inspectors working on commercially hauled conveyances.	Planning  Detail: Call Before You Haul success, and transition to next phase
B.13 Ensure quality control at WID stations in accordance with Building Consensus.	The number of quality control evaluations conducted and subsequent corrective actions or training as appropriate.	Evaluating 
B.14 Support the Regional WID Training Program administered by the Pacific States Marine Fisheries Commission.	Maintain and/or increase the number of courses taught; the number of students certified at each level. Maintain stable funding annually.	In Progress  Detail: Base funding has been maintained and training continues
B.15 Adopt and implement the National Wildfire Coordinating Group protocols within the Guide to	An increase in the number of entities that adopt and implement the protocol. Completion of the WRP Fire	






Preventing Aquatic Invasive Species Transport by Wildland Fire Operations.	Equipment Protocol to aid in the adoption of the national standard.	Evaluating 
B.16 Continue, expand, and promote partnerships between managing agencies and the marine industry, specifically the National Marine Manufacturers Association, American Boat and Yacht Council, Watersports Industry Association, and BoatUS, to implement the Technical Information Report (T-32) on AIS.	An increase in the number of engagements with the marine industry. A published ANS standard for all NMMA certified boats to prevent/eliminate the movement of ANS on watercraft and to improve decontamination efficacy and safety.	Evaluating  Detail: WRP made recommendation in 2022 to enhance relationships with industry
B.17 Alter and/or improve the design, engineering, and manufacturing of ballast tanks, inboard engines, inboard/outboard engines, and new watercraft to eliminate or reduce the probability of quagga or zebra mussels and other ANS from being transported in recreational watercraft, and to make it easier and safer to inspect and decontaminate watercraft compartments and propulsion systems.	Establish a process for new marine technologies to be tested by independent third-party vendors, approved, and released into manufacturing. An increase in the number of marine manufacturers actively engineering new boat designs to reduce the spread of ANS. Effective solutions for ballast tanks, engines, bilge, and other water-holding compartments to prevent ANS are industry standard in marine manufacturing.	Planning  Detail: PSMFC conducted analysis of design changes indicating minimal improvements
B.18 Continue, expand, and promote the use of Best Management Practices and Hazardous Analysis and Critical Control Point Planning to reduce the spread of ANS during natural resource management activities.	Maintain and/or increase the number of HACCP courses and corresponding numbers of certifications issued for trainers and students. An increase in the number of new organizations practicing HACCP in government and industry.	Completed  Detail: USFWS HACCP training program successfully expanding





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
Strategy C – Detection Monitoring for Zebra and Quagga Mussels




Action Item	Evaluation Measure	Status
C.1 Adopt the WRP Dreissenid Mussel Field Sampling and Monitoring Protocol and the Laboratory Standards for Dreissenid Veliger Analysis.	An increased number of organizations that are conducting early detection veliger monitoring and following the Building Consensus guidelines and the WRP field sampling and lab protocols.	In Progress  Detail: WRP Monitoring Committee reinvigorated (2023) and is currently updating the protocol (2024)
C.2. Expand early-detection monitoring programs to western waters at risk for zebra and quagga mussel introduction, following WRP protocols.	Increased number of unique water bodies monitored per the WRP field sampling protocol. Increased number of sampling locations. Increased number of plankton tows for veligers. Increased number of shoreline surveys for mussels. Increased number of artificial substrate deployments and checks for mussels. The number of sampling visits per site.	Evaluating 
C.3 Expand laboratory expertise and capacity to provide Dreissenid analytical services.	An increased number of laboratories that provide Dreissenid analytical services. An increase in the number of samples analyzed according to WRP lab protocols.	Completed  Detail: PSMFC houses lab list and updates annually, last update 2024
C.4 Develop field protocols, lab standards, and management support tools for early-detection monitoring using eDNA.	Published and accepted standards for eDNA field sampling protocol and eDNA lab protocol for early detection of zebra and quagga mussels with companion support tools for managers and decision makers.	No Progress  Detail: WRP will defer development to eDNA community
C.5 Develop and implement a standard training and certification program for field sampling and monitoring staff and laboratory technicians performing early	The development and implementation of two training certification programs - one program for field sampling and monitoring staff and one for laboratory staff - that	Evaluating 






detection analysis for invasive mussels and other ANS.	align with WRP standards.	
C.6 Report Dreissenid monitoring <i>detections</i> to the USGS NAS database for all agencies/entities collecting data. Note: word change for strategy made by Ex Comm removing results and replacing with detections.	An increase in the number of states reporting all stages of detection per Building Consensus guidelines.	Planning 
C.7 Create a western sampling location web map and database applicable to all western agencies to promote the coordination of monitoring efforts and early detection surveys.	The development and implementation of an online map and corresponding database is complete including query search functionality and reporting capacities for effective information sharing related to sampling and monitoring activities within the WRP.	In Progress  Detail: PSMFC maintains a monitoring map and database for 10 western states and updates annually, last update 2023
C.8 Host an annual monitoring coordination forum to communicate activities, results, and collaborate on priorities to leverage capacity and coverage and avoid duplication.	The annual monitoring forum is established and takes place each year with engagement from WRP membership, partners, and experts.	No Progress 
C.9 Establish an MOU which clarifies roles and responsibilities between state and federal agencies concerning early detection monitoring results for management; including communications, notifications, public release of information, and online databases, and distinguishes between collections for research versus management purposes.	The MOU is established.	Planning  Detail: Role for national EDRR Framework in laying the groundwork






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Strategy D – Rapid Response		
Action Item	Evaluation Measure	Status
D.1 Create and maintain a sustainable rapid response fund (subject to appropriate authorities and appropriations) for zebra and quagga mussels in western states.	Establishment of a stable fund for rapid response for zebra or quagga mussels in the West.	In Progress  Detail: USFWS launched a pilot \$1M fund source in 2023.
D.2 Develop and maintain rapid response plans for all western states and major basins.	An increase in the number of basin rapid response plans and an increase in the number of state, federal, local, or tribal rapid response plans for zebra and quagga mussels.	Planning 
D.3 Conduct rapid response training in the Arkansas, Upper Colorado, Lower Colorado, Upper Missouri, Platte, and Great Basins, and in Alaska, modeled after the CRB trainings.	Rapid Response training exercises are conducted with at least one exercise held in a new basin each year.	Evaluating 
D.4 Create an Endangered Species Act (ESA) manual for rapid response in the western basins named in D.3.; modeled after the CRB ESA Manual published in 2019.	ESA manual for rapid response published for each basin named in D.3.	Evaluating 




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Strategy E – Research for Control and Management		
Action Item	Evaluation Measure	Status
E.1 Develop a standardized risk assessment model for invasive mussels in western waters that takes into account both the risk of introduction by watercraft, as well as examines water quality to determine both the probability of establishment and reproduction within the water. Include a decision tree based on risk that helps direct financial resources for management and control.	Completion of a west-wide waterbody risk assessment with inclusion, at a minimum, of the risk of introduction by watercraft, the risk of establishment (chalk variables) and the risk of invasive reproduction (trophic variables) within the water plus a companion decision tree.	In Progress  Detail: USGS has completed Missouri River Basin RA
E.2 Conduct a western traffic assessment to determine the interstates, highways, roads, or travel corridors that are most commonly used by boaters traveling from infested areas into the uninfested West to inform the strategic placement of roadside WID stations in new basins or areas.	Completion of a west-wide traffic assessment that provides recommendations for the most effective placement of roadside WID stations to intercept watercraft moving from infested areas into the uninfested West.	In Progress  Detail: WRP submitted as a recommendation to ANSTF in 2021 USACE has initiated study (2024)
E.3 Conduct and support social science research to evaluate existing ANS educational campaigns and informational messaging currently in use across the West that target boaters (e.g., Stop Aquatic Hitchhikers, Play Clean Go, Clean Drain Dry, Pull the Plug, and state-specific campaigns) and clearly identify which campaigns, messages, and delivery methods are most effective in both raising initial awareness and achieving subsequent behavior change.	Published research that evaluates existing ANS educational campaigns and informational messaging related to changing the behavior of boaters and potentially other users to stop the spread of ZQM and other ANS.	Completed  Detail: WRP E&O Committee conducted a study with Texas A&M

<p>E.4 Continue to develop and evaluate environmentally friendly and cost-effective tools to manage invasive mussel infestations in open water systems, specifically large reservoirs.</p>	<p>Increased number of usable, proven, cost-effective, and environmentally friendly control method that are tested, approved, permitted as appropriate, and widely accepted for use.</p>	<p style="text-align: center;">Planning </p> <p>Detail: Two active eradication efforts in the West may provide insight in 2025</p>
<p>E.5 Update the research priorities list from Dreissenid Mussel Research Priorities Workshop (Portland State University, 2015).</p>	<p>The research priorities document is updated and published.</p>	<p style="text-align: center;">Completed </p> <p>Detail: USGS/PSMFC/USFWS updated and released in 2023</p>
<p>E.6 Continue to evaluate the impacts (acute and chronic) of control and management tools (e.g. chemical treatments, non-chemical treatments) on non-target organisms, in particular, those listed as threatened or endangered.</p>	<p>Increased number of evaluations of the impacts of control and management tools on non-target organisms.</p>	<p style="text-align: center;">Planning </p> <p>Detail: Two active eradication efforts in the West may provide insight in 2025</p>
<p>E.7 Conduct research to better understand human-induced vectors in the spread of mussels. Note: Ex Com revised to read as above, previous language removed: “how human behavior influences the spread of mussels and other invasive species”.</p>	<p>Increased number of published studies on human behavior related to preventing the spread of ZQM and other ANS.</p>	<p style="text-align: center;">Evaluating </p>
<p>E.8 Coordinate research, control, and management with the ANS Task Force and their Research Committee to meet western priorities.</p>	<p>An increase in the number of WRP members on the ANS Task Force Research Subcommittee. An increase in the number of western research priorities completed in partnership with the ANS Task Force.</p>	<p style="text-align: center;">No Progress </p> <p>Detail: ANSTF Research Committee is largely inactive</p>

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Strategy F – Outreach and Education		
Action Item	Evaluation Measure	Status
F.1 Following the completion of E.3, promote the use of consistent, effective messaging and enhance coordination of efforts to support the achievement of desired behavior change across the western region.	To be determined pending the results of E.2.	Completed  Detail: Promotion of the results has been conducted; materials are available on website
F.2 Following the completion of E.3 and E.7, develop (if necessary) or update outreach materials and delivery methods (e.g. print, social media, etc.) and make them available in digital formats that can be tailored to specific jurisdictions.	To be determined pending the results of E.2, E.6, and F.1.	In Progress  Detail: Toolkits are in development
F.3 Conduct a standardized, regional, multi-state, survey of motorized boaters in the West to determine if a correlation exists between current WID processes, compliance, and customer experience; make improvements, accordingly, evaluate and reassess compliance and customer experience to determine where improvements can be made to incentivize compliance.	Boater survey completed and report issued.	No Progress 
F.4 Develop messaging for states in other regions to communicate western WID requirements and procedures with boaters before they travel to western states.	An increase in partnerships east of the WRP; an increase in the number of engagement activities east of the WRP; an increase in the number of organizations east of the WRP distributing western information resources.	Planning  Details: Elements of Call Before you Haul and Protect the West address this need (2024)

<p>F.5 Effectively use and evaluate social and multi-media platforms to share consistent messaging campaigns.</p>	<p>Completion of a coordinated social media strategy and evaluation criteria. Increased number of organizations utilizing the social media strategy and implementing it. Increased number of social media posts and post engagement.</p>	<p style="text-align: center;">In Progress </p> <p style="text-align: center;">Detail: Toolkits are in development</p>
<p>F.6 Coordinate consistent implementation of the ANS Task Force Voluntary Guidelines to Prevent the Introduction and Spread of Aquatic Invasive Species: Recreational Activities.</p>	<p>An increase in the number of WRP members and partners utilizing and promoting the guidelines.</p>	<p style="text-align: center;">Evaluating </p>
<p>F.7 Coordinate information, education, and outreach with the ANS Task Force and their Education Committee to meet western priorities.</p>	<p>An increase in the number of WRP members on the ANS Task Force Education and Outreach Subcommittee. An increase in the number of recommended WRP priorities completed through the ANS Task Force.</p>	<p style="text-align: center;">In Progress </p> <p style="text-align: center;">Detail: WRP E&O Committee Chair serves on ANSTF Committee</p>