

Rapid Response Plan Following Detection of Dreissenid Mussels in Fontenelle Reservoir, Wyoming

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SUMMARY

Fontenelle Reservoir is an 8,800 acre reservoir, located in southwest Wyoming near the town of LaBarge. The reservoir was created by the inundation of the Green River and is located entirely within Bureau of Reclamation (BOR) administered lands. The boating season on the reservoir begins in early April or May when ice leaves the surface and continues through the fall. Peak use typically occurs in May through September and the majority of users are anglers. There are two developed boat ramps on the west side of the reservoir just off of Highway 189 and very little other launching occurs, including shore launching.

The initial response if dreissenid mussels are detected is to minimize the risk of spreading mussels to other waters while awaiting follow up sampling results. To prevent the spread of mussels, a mandatory exit inspection of all conveyances will occur at Fontenelle Reservoir. During the initial six weeks, regional personnel will staff the check station located at the Lower boat ramp. The Upper boat ramp will be closed during this and all other status levels. The check station will be open from sunrise to 1/2 hour after sunset, April through November. Following the initial six week period, the check station will be staffed by a Crew Lead (Biologist I-level position) who supervises multiple inspectors (technician-level positions) and oversees check station operations. The number of personnel required to staff the check stations will range from four to six, depending on the month and status. A local boater program will be tested during Long-term Suspect Status and implemented at Positive and Infested status if it is deemed successful. The initiation of the rapid response activities would range in cost from approximately \$52,000 (not including regional personnel time) during the first six weeks to \$580,000 for the initial year at Infested Status. After the initial year, annual operating expenses for containment of a dreissenid mussel infestation at Fontenelle Reservoir are estimated to cost approximately \$242,000.

INTRODUCTION

Zebra (*Dreissena polymorpha*) and quagga (*Dreissena bugensis*) mussels are aquatic invasive species (AIS) that have far-reaching negative impacts on natural resources, water infrastructure, recreation, and can attribute to significant economic loss. Zebra mussels are native to the Black and Caspian seas and were first discovered in the Great Lakes in 1988. Quagga mussels are native to the Dnieper River Drainage in Ukraine and were first found in the Great Lakes in 1989. Since their initial introductions, these species have spread across most of the United States, and have been detected in Wyoming's neighboring states of Nebraska, South Dakota, Montana, Colorado, and Utah. The presence of zebra and quagga mussels in close proximity to Wyoming elevates the threat of introduction and increases the need for plans that can be rapidly implemented to contain them if detected.

Currently, Wyoming's AIS program is focused on outreach, watercraft inspection and monitoring, with the overall goal of keeping invasive species such as zebra and quagga mussels out of the state. Wyoming law requires inspection of all watercraft entering the state and the Wyoming Game and Fish Department (WGFD) currently maintains 14 inspection stations (primarily at Department of Transportation Ports of Entry) that intercept incoming watercraft and inspect them for the presence of AIS. The WGFD AIS program also conducts inspections at various waters by roving personnel and at regional offices. Annual monitoring for a variety of AIS, including zebra and quagga mussels, is conducted on priority waters throughout Wyoming and an outreach program is in place to educate the public about the threats of AIS and what they can do to prevent their spread. However, the focus of this plan is detection and response to dreissenid invasive species within the state of Wyoming.

If zebra or quagga mussels are detected in a Wyoming water, immediate action will be necessary to prevent their spread to other waters. This rapid response plan is a water-specific plan that outlines the steps needed to quickly mobilize personnel and equipment to provide exit inspections and, if necessary, decontaminations of all boats leaving the affected water. This plan will be initiated when zebra or quagga mussel veligers (larvae) or adults are detected in a sample from Fontenelle Reservoir and are verified by independent experts and genetic analysis. At that point, the lake will enter Short-term Suspect Status. This coincides with the period of time necessary to conduct additional sampling and testing necessary to verify whether zebra or quagga mussels are present (up to six weeks). If follow-up sampling does not detect zebra or quagga mussels, the water will enter Long-term Suspect Status and monthly monitoring will be initiated. If zebra or quagga mussels are not detected for three years, the water will once again be considered negative. Conversely, if two sampling events within a 12-month period detect zebra or quagga mussels, the water will enter Positive Status and will not be considered negative again unless mussels are not detected in monthly monitoring for five years. Finally, a water will enter Infested Status when evidence shows a recruiting and reproducing population of zebra or quagga mussels has been established. At this point, eradication of mussels is highly unlikely and containment efforts will be necessary for the foreseeable future.

This plan provides guidance for the initial response to detection of dreissenid mussels at each of these four status levels and is intended to be implemented quickly and act as the guiding document for initial decision making following detection. It is not intended as a long-term containment plan, but will outline the action necessary to provide short-term containment while a long-term containment and monitoring plan is developed.

CONFIRMATION OF DREISSENIID MUSSELS

Sampling of Wyoming waters is conducted annually in accordance with the “Wyoming Game and Fish Department Aquatic Invasive Species Sampling and Monitoring Manual” (WGFD 2019). High priority waters are sampled twice per season (June or July, and September or October), and lower priority waters are sampled once per season in September or October. To determine whether Wyoming waters contain evidence of AIS, specimens of adult or juvenile crayfish, snails, mollusks, plants, etc. are collected during routine sampling and any specimen suspected of being AIS must be positively identified by at least two independent experts. Only samples collected by the WGFD may be used to change the classification of a water. Samples collected by a third party will be used as a notification of a possible detection which must be confirmed by a WGFD sample.

To meet the minimum criteria for detection of dreissenid mussels, an adult or juvenile specimen must be verified by two independent experts and confirmed by DNA, or a veliger (larval form) must be identified and verified using cross-polarized light microscopy by two independent experts and confirmed by DNA analysis (PCR and gene sequencing).

Based on sampling results, waters are given certain classifications related to their dreissenid mussel status:

A water body that has not been sampled for aquatic invasive species is classified as *Unknown/Not Tested*. A water body at which sampling is ongoing and nothing has been detected (or nothing has been detected within the time frames for de-listing) is classified as *Negative*. As of January, 2020, all waters in Wyoming are classified as either *Unknown/Not Tested*, or *Negative*.

A water body classified as *Inconclusive* has not met the minimum criteria for detection but evidence of dreissenids has been documented. For example, evidence of a mussel veliger is detected via microscopy but cannot be confirmed by DNA analysis. This is a temporary classification and additional sampling of this water will be conducted to determine whether the water body is classified as negative (no detections in subsequent sample) or suspect (verified detection in subsequent sample).

A water body classified as *Suspect* indicates a water at which one sample has been verified by visual confirmation (visual identification of adult or microscopy identification of veliger) and this sample was confirmed as dreissenid by DNA analysis (PCR and gene sequencing). In this scenario, additional sampling will be conducted to determine whether another sample taken within 12 months detects evidence of dreissenids. If a subsequent sample does detect dreissenids, this water will then be classified as *Positive*.

A water body classified as *Positive* indicates a water at which two or more sampling events within a 12-month period meet the minimum criteria for detection. For example, samples from two different sampling events are verified by both visual identification (including microscopy) and DNA confirmation (PCR and gene sequencing).

In many cases, a water classified as *Positive* will ultimately become *Infested* which is a water body with an established (recruiting and reproducing) population of dreissenid mussels. For example, lakes Mead and Powell are considered infested waters as they have large populations of reproducing dreissenids and mussels are readily evident on the shoreline and submerged materials such as docks, buoys, etc.

In some instances, the classification of a water body can be downgraded over time. The exact reasons why dreissenids are detected at a water once, then not again in subsequent

sampling, or are detected in a water classified as *Positive* but never establish a population, remains largely unknown.

A water body initially classified as *Inconclusive* can be de-listed to *Negative* status after one year of negative testing results including at least one sample taken in the same month of the subsequent year as the initial positive sample (to account for seasonal environment variability). The time frame for de-listing a water body extends from there with a water body initially classified as *Suspect* requiring three years of negative testing to re-classify to *Negative*, a *Positive* water body requiring five years of negative testing to re-classify to *Negative*, and an *Infested* water body requiring a successful eradication or extirpation event and a minimum of five years of negative testing results post-eradication event to re-classify to *Negative*.

WATER DESCRIPTION

Fontenelle Reservoir is located in northwestern Sweetwater County, just south of the town of LaBarge, Wyoming. The reservoir was created following the construction of Fontenelle Dam in 1964 and holds 324,000 acre-feet of water at capacity. The 12 mile long reservoir has a mean depth of 41 ft and a maximum depth of 116 ft, and inundates the Green River approximately 77 miles upstream of Flaming Gorge Reservoir.

Fontenelle Creek and the Green River are the primary tributaries to the reservoir, with seasonal or intermittent flow coming from the arid washes to the east. The Green River, which provides the majority of water to the reservoir, originates in the Wind River Mountains and captures several tributaries flowing off the Wind River and Wyoming ranges. Bureau of Land Management (BLM) land dominates the Fontenelle Basin uplands, while the Green River Basin is made up of a mix of US Forest Service, BLM, private and State lands. The entire reservoir lies within BOR administered lands.

Unimproved roads provide access to all sides of the reservoir, however, there is no public vehicular access across the dam. Two improved boat ramps are located on the reservoir. One is located on the southwest side near the dam, and the other is located near the Fontenelle Creek inflow off of Highway 189. There is a developed campground with 55 units at Fontenelle Creek, adjacent to the upper ramp. There is also dispersed camping around the lake and boat and car camping is fairly common.

The boating season is generally April through November with the majority of use occurring from May through August. Angler use is highest in May and June, while recreational boating use is more common in July and August. Small, non-motorized craft can be launched along unimproved access points around the lake, though most of the motorized use occurs at the improved boat ramps, with few exceptions.

Use data for Fontenelle Reservoir was primarily collected at Evanston and Kemmerer AIS check stations. From May through July, 2018-2019, there were 599 boats inspected that were en route to Fontenelle Reservoir. Based on these inspections, the majority of boaters are from Wyoming (45%) or Utah (45%). However, the Evanston and Kemmerer AIS check stations primarily inspect non-resident watercraft that are entering the state. Therefore, this information underestimates the proportion of residents using Fontenelle Reservoir, particularly local boaters that travel to the reservoir from the north. The most common watercraft type used on Fontenelle Reservoir are motorized boats with outboard motors, followed by non-motorized boats. The use by complex watercraft (e.g., wakeboard boats with ballast tanks) on Fontenelle Reservoir is low.

RAPID RESPONSE – SHORT-TERM SUSPECT STATUS

In the event that a sample from Fontenelle Reservoir is confirmed positive for dreissenid mussels, the reservoir will be considered Short-term Suspect (defined above). After the initial detection, follow-up sampling will occur and results will take approximately six weeks to be reported. During that time, it will be necessary to minimize the risk of spreading mussels to other waters. Within one week, resources will need to be in place to perform required clean, drain, dry exit inspections of all boats leaving the reservoir and decontamination of undrainable areas, such as ballast tanks and motors. All watercraft leaving Fontenelle Reservoir will receive a red seal and seal receipt to verify the watercraft received an exit inspection. Red seals will designate use on a suspect, positive or infested water versus the brown seal currently used after a Wyoming AIS inspection.

At Short-term Suspect Status, there will not be time to hire personnel or purchase equipment. Therefore, the initial response will rely on existing personnel and equipment. Immediately after initial detection, job announcements and requisitions will be prepared so personnel can be hired and equipment can be purchased as quickly as possible once follow-up results are available.

Communication Plan

Upon the initial detection of dreissenid mussels, WGFD's AIS Coordinator will begin the administrative communication chain outlined in the WGFD AIS Administrative Rapid Response Plan (WGFD 2020). Initial contacts in the administrative communication chain include the AIS Coordinator contacting the Communications Director, the Regional Fisheries Supervisor, and the Fish Division Chief, who contacts the WGFD Director. On the regional level, the Green River Regional Fisheries Supervisor will begin the regional communication chain to disseminate information about the detection to internal and external partners and stakeholders (Figure 1). Internal WGFD contacts include Regional Fish Division personnel, the Regional Wildlife Supervisor, the Regional Habitat and Access Supervisor and the Regional I&E Specialist. The Regional Wildlife Supervisor will then contact the Green River game wardens as well as local Wildlife and Terrestrial Habitat biologists. The Regional Habitat and Access Supervisor will contact appropriate Habitat and Access biologists.

The Green River Regional Fisheries Supervisor will also contact key stakeholders, including the BOR Regional Director, Seedskaadee National Wildlife Refuge Superintendent, the Rock Springs BLM, and local landowners adjacent to and downstream of the reservoir. There are no local businesses on or near the reservoir. Boater contacts made through Wyoming AIS inspection stations will be used as a primary notification and education outlet during this time period. The AIS Coordinator will also contact and coordinate with WGFD communication personnel, including Green River and Pinedale Regional I&E (see Public Outreach, below), and regional stakeholders (Western Regional Panel, federal partners, etc.).

Key information to convey to internal and external partners and stakeholders should include the name of the affected water, which species was collected, who collected the sample, where the sample was collected, which agency/expert analyzed the sample, any relevant information about the sample, who to contact for more information, a brief description of containment protocols that will be put in place, and any critical changes for the public. Every effort should be made to quickly contact all partners and stakeholders prior to beginning public outreach efforts. The regional fisheries supervisor will attempt to make all contacts within 24

hours of detection and will contact the Communications Director once enough contacts have been made to initiate outreach efforts.

Contact information for key individuals can be found in Appendix A.

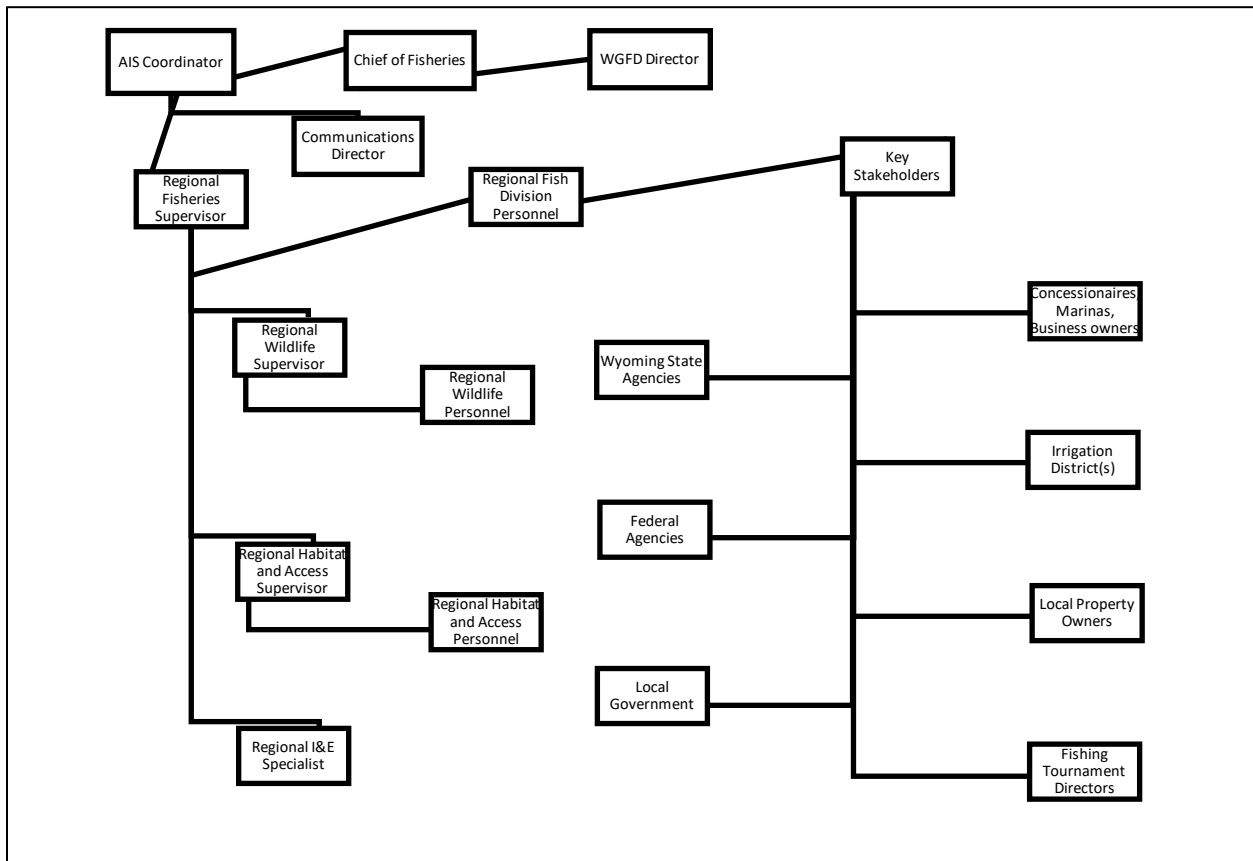


FIGURE 1. Communication chain for dissemination of information on the local and regional level following a dreissenid mussel detection in a Wyoming water.

The focus of this plan is on containing invasive mussels through inspection and decontamination of exiting watercraft. Consideration should be given to other potential vectors that could spread invasive mussels (e.g., aircraft used to combat wildfires, commercial water hauling equipment) and communication and coordination should occur with these entities to ensure containment. Current information on preventing the spread of aquatic invasive species in firefighting and water hauling equipment can be found on the WGFD website at <https://wgfd.wyo.gov/Fishing-and-Boating/Aquatic-Invasive-Species-Prevention/AIS-Construction-and-Fire>.

Closures

During the initial six-week period, a closure of the Upper Boat Ramp (UBR) at Fontenelle Campground will be implemented and all boat traffic will be directed to the Lower Boat Ramp (LBR) near the dam (Figure 2). Additionally, a closure of shore launching of

trailed watercraft will be implemented. Closing shore-launching and limiting traffic to the LBR will need to be mutually agreed upon by the WGFD and the BOR.

Check Station

The AIS check station located at the LBR will be the only check station operated during Short-term Suspect Status and will run from sunrise to 1/2 hour after sunset. Night closures will not be necessary as very few users stay past daylight. The LBR parking area will serve as the inspection and decontamination station. The area currently consists of a large parking area with designated sites and a vast area of dispersed parking that will provide adequate space for a temporary inspection and decontamination station (Figure 3).



FIGURE 2. Image of Fontenelle Reservoir indicating the location of the Upper Boat Ramp near Fontenelle Creek and Lower Boat Ramp near the dam.

All watercraft (motorized and non-motorized) leaving the water body will be required to stop at the check station. While AIS Inspectors will offer inspections for entering conveyances, priority will be given to mandatory inspection of exiting watercraft and decontamination of undrainable areas such as ballast tanks and engine manifolds.

Staffing Plan

During the six-week Short-term Suspect Status period, all staffing needs must be met with existing personnel. Job announcements for the AIS crew lead and technicians will go out immediately, but it will take approximately six weeks to hire these individuals. The Green River and Pinedale regional fish management crews will provide much of the staffing, but assistance

will be required from Wildlife and Services division personnel in the Green River and Pinedale regions and roving AIS personnel, if available. Appendix B provides an example of the staffing level that will be required for Short-term Suspect Status. A detailed staffing plan, including individual personnel, will be developed by the Green River Regional Fisheries Supervisor. One law enforcement officer will occasionally be required at the LBR during the busy months and at least one will be on call and easily available in case of emergencies during lower use months.

Inspectors will be stationed at the open ramp from sunrise to ½ hour after sunset. During the summer solstice, this will be from approximately 6:00 AM to 9:30 PM. The number of inspectors needed during pre, peak and post-watercraft seasons are identified in Appendix B. These numbers will be adjusted depending on watercraft traffic expected during the Short-term Suspect Status period. The volume of boats departing the reservoir is expected to be greatest most days between 10 AM and 3 PM. As such, inspector shifts will be structured so the number of inspectors at each ramp are maximized from mid-morning to mid-afternoon (Appendix B). Inspectors will each work 4 days on; 10 hour shifts at the boat ramp (excluding travel). Inspectors will stay in campers provided near the check station to reduce travel.

During Short-term Suspect Status the check station will be staffed by regional personnel, including wardens, warden trainees, fish and wildlife management personnel, associated management technicians and AIS rover inspectors for a total of six people per week during the peak season and four people per week during the off season. The 4-6 AIS “roving” personnel will be requested first. After that, requests will go out to other regional and staff-level personnel.



FIGURE 3. Map of the Lower Boat Ramp area showing the location of the inspection and decontamination area.

Supplies and Equipment

Budget details for Short-term Suspect Status are included in Appendix C. Additional equipment needs include two to four decontamination units, depending on the month. These units could be rented for \$285 per day or borrowed from elsewhere in the state. At least three regional vehicles will be allocated to the effort during the slow months and additional vehicles will be required during June and July, including two that can tow a 3,500 lb decontamination unit. A $\frac{3}{4}$ -ton truck and trailer capable of hauling 1,100 gallons of water will be borrowed from Green River Regional Office or the AIS program. One 550-gallon water tank will be purchased to haul water to recharge decontamination units. Restrooms are available at the Lower Boat Ramp. Camp trailers will be borrowed from the Regional Fish Management Crew or other crews in the region and will be available at the check station during the required months. Camp groceries will be provided for personnel staying on site. Per diem was budgeted for individuals requiring motel lodging (Appendix C). Kemmerer and LaBarge are the closest towns with motels. Dynamic Messaging Signs will be borrowed from the Regional Wildlife Crew or the AIS program. Any additional equipment, such as generators, will be borrowed from the Green River Region or the AIS program.

Water for the AIS decontamination units can be obtained from the BOR housing yard a short distance from the LBR.

A barrier will be erected to prohibit launching at the UBR while allowing the public access to the area around the ramp for other uses. A steel cable and two metal posts will span the width of the ramp to prohibit launching. The cable will be raised 3 feet above the surface of the ramp which will prevent watercraft from launching. A “ramp closed” sign will also be hung from the cable to notify boaters and direct them to the LBR. Additional signs may be required along access routes around the lake to notify boaters that shore launching is prohibited.

Public Outreach

The AIS Administrative Rapid Response Plan outlines the general public outreach plan for suspect, positive or infested determinations for Wyoming waters (WGFD 2020). Following an initial sample testing positive for dreissenid mussels, the AIS Coordinator will contact the Communications Director at WGFD Cheyenne Headquarters. Prior to initiating the public outreach plan, key partners and stakeholders should be contacted according to the Communication Plan (above). The regional fisheries supervisor will attempt to make all contacts within 24 hours of detection and will contact the Communications Director once enough contacts have been made. The Communications Director will then initiate the Communications Plan. A statewide press release will be sent out and information will be posted on the AIS website and any necessary social media. The AIS Coordinator, Regional Fisheries Supervisor and Regional AIS Specialist will collaborate with the Green River Regional I&E Specialist to relay information about Short-term Suspect Status at Fontenelle Reservoir through media outlets (newspapers, radio, etc.). Regional Information and Education personnel will coordinate all communications efforts with the Communications Director.

The AIS Administrative Rapid Response Plan (WGFD 2020) and other pertinent information will be available at the Green River and Pinedale regional offices and on the WGFD website. Local community meetings will be held in Green River, Kemmerer, LaBarge, Pinedale, Big Piney, and as requested by the stakeholders.

RAPID RESPONSE – LONG-TERM SUSPECT STATUS

If initial follow-up sampling does not yield a positive result, Fontenelle Reservoir would enter Long-term Suspect Status (defined above) and remain at this level for up to three years if no additional positive samples are found. The goal during this period is still to minimize the risk of spreading mussels to other waters. During the first year (from initial detection through the following boating season), we will need to provide capacity for all boaters coming off the water to efficiently obtain a required clean, drain, dry exit inspection, motor flush, and decontamination of ballast tanks and other undrainable watercraft features. All watercraft leaving Fontenelle Reservoir will receive a red seal and seal receipt to verify the watercraft received an exit inspection. Red seals will designate use on a suspect, positive or infested water versus the brown seal currently used after a Wyoming AIS inspection.

If there is no confirmation of dreissenid mussel presence after the first full boating season, efforts will switch in years two and three to a lower level response, with a goal of contacting a significant number of boaters, but placing more responsibility on boaters to obtain an exit inspection. Inspectors will still conduct clean, drain, dry exit inspections on boats leaving the water and decontaminate ballast tanks and other undrainable watercraft features. If feasible, they will continue to flush all motors. If not, they will drain outboards motors and only flush inboard/outboard and inboard motors as these motor types are difficult to drain completely. Public outreach will increase via multiple outlets to highlight the potential threat at the suspect water.

Communication Plan

The administrative communication chain will continue to be utilized to inform all parties on follow-up sampling results and water status (see WGFD AIS Administrative Rapid Response Plan; WGFD 2020). In addition, the Green River Region internal communication chain outlined in the Short-term Suspect Status section (above) will continue to be utilized to inform the Green River Region and key stakeholders (Appendix A) of follow-up sampling results.

Closures

During Long-term Suspect Status, the UBR will remain closed to minimize staffing needs during periods of low boat use. Shore launching of trailered watercraft will remain closed throughout the year and no night closures will need to be implemented.

Check Station

All watercraft leaving Fontenelle Reservoir will be inspected at the LBR. Signs will be placed at both ramps (upper and lower) to notify boaters that stopping at the check station is mandatory. Dates and hours of operation are referenced in Appendix B.

Staffing Plan

Inspectors will be stationed at the open ramp from approximately sunrise to ½ hour after sunset. During the summer solstice this will be from approximately 6:00 AM to 9:30 PM. The number of inspectors needed during pre, peak and post-watercraft seasons are identified in Appendix B. These numbers will be adjusted depending on watercraft traffic expected during the Short-term Suspect Status period. The volume of boats departing the reservoir is expected to be greatest most days between 10 AM and 3 PM. As such, inspector shifts will be structured so the number of inspectors are maximized from mid-morning to mid-afternoon (Appendix B). Inspectors will each work 4 days on; 10 hour shifts at the boat ramp (excluding travel). Inspectors will stay in campers provided near the check station to reduce travel. Annual personnel costs for Long-term Suspect Status are included in Appendix C.

Supplies and Equipment

Long-term Suspect Status will require the purchase of two camp trailers to provide housing for inspectors at the reservoir. During the 4-day inspection periods outlined in the staffing plan, the inspectors would stay at the campground at Fontenelle Creek or the BOR Fontenelle housing yard. In addition to the camp trailers, one office trailer will need to be stationed at the LBR check station to provide inspectors protection from the elements. Adequate space over gravel and pavement to conduct inspections and decontaminations exists and should not need any long-term improvements. Water will continue to be collected at the BOR housing yard and trailered to the inspection locations. The budget includes one ¾ ton pickup one trailer and two 550-gallon tanks for water hauling. A 2-inch trash pump will be used to transfer water from the trailer to decontamination units. Four decontamination units will be purchased and should adequately accommodate this location. Utilities are not available at the LBR and staff would rely on generators, which will need to be purchased. Budget details for Long-term Suspect Status are included in Appendix C.

Closure of the UBR will result in increased use of the LBR. While not directly considered in this plan, increased use may warrant upgrades to LBR parking, launching and docking facilities.

Public Outreach

At Long-term Suspect Status, statewide public outreach efforts will continue to follow the process outlined in the Administrative Rapid Response Plan (WGFD 2020). The Regional Fisheries Supervisor and Regional AIS Specialist will continue to collaborate with the Green River and Pinedale regional I&E specialists to keep the local boating public aware of the threats and responsibilities associated with a Long-term Suspect Status on Fontenelle Reservoir.

Years 2 and 3 Long-term Suspect Status

The Fontenelle Reservoir AIS Rapid Response actions for Years 2 and 3 of Long-term Suspect Status will remain similar to Year 1 Long-term Suspect Status. The number of personnel working the check station are unlikely to decrease, since doing so could cause delays in inspections and decontaminations. There will be no changes in check station location and hours of operation. Except for camp groceries, no additional supplies will be purchased. A local

boater program will be tested to determine the ability to reduce the demand on inspectors for decontaminations and decrease wait times for all boaters.

RAPID RESPONSE – POSITIVE STATUS

Fontenelle Reservoir will be considered positive for dreissenid mussels if two or more sampling events within a 12-month period meet the minimum criteria for detection (defined above). The reservoir will remain at Positive Status for five consecutive years of negative sample results, at which time it will be downgraded to Negative Status. Alternatively, if an established population of mussels is detected during that five years, it will be upgraded to Infested Status.

The goal during Positive Status is still to minimize the risk of spreading mussels to other waters. We will need to provide capacity for all boaters coming off the water to efficiently obtain a required clean, drain, dry inspection, motor flush, and decontamination of ballast tanks and other undrainable areas. If live mussels are found on any boats during exit inspections, they will be fully decontaminated and consideration will be given to upgrading the status to Infested. All watercraft leaving Fontenelle Reservoir will receive a seal and seal receipt to verify the watercraft received an exit inspection. Seals will be red in color to designate use on a suspect, positive or infested water versus the brown seal currently used after a Wyoming AIS inspection.

Communication Plan

The administrative communication chain will continue to be utilized to inform all parties on follow-up sampling results and water status (see WGFD AIS Administrative Rapid Response Plan; WGFD 2020). In addition, the Green River Region internal communication chain outlined in the Short-term Suspect Status section (above) will be used to inform the region and key stakeholders of changes in status level.

Closures

Closures during Positive Status will be similar to Years 1-3 Long-term Suspect Status. The UBR will remain closed to minimize staffing needs during periods of low boat use. Shore launching of trailered watercraft will remain closed throughout the year. Night closures will be implemented to prevent watercraft launching and trailering after hours because of the increased risk of transporting mussels to other waters that Positive Status presents.

Check Station

All watercraft leaving Fontenelle Reservoir will be inspected at the LBR. At Positive Status, improvements will be made to the check station, including installation of a concrete inspection and decontamination pad, power and a water well (see Supplies and Equipment, below). Signs will be placed at both ramps (upper and lower) to notify boaters that stopping at the check station is mandatory. Additional signage along access routes around the reservoir will notify boaters that shore-launching is prohibited. Dates and hours of operation will be the same as Long-term Suspect Status and are referenced in Appendix B. The provisional local boater program implemented during Long-term Suspect Status will be continued if initial results consider it a success.

Staffing Plan

Staffing will remain the same as Long-term Suspect Status (Appendix B). Annual personnel costs for Positive Status are included in Appendix C.

Supplies and Equipment

Supplies and equipment will be similar to Long-term Suspect Status. The exceptions under Positive Status will be the location of a permanent inspection station with a concrete pad for inspecting and decontaminating boats, a permanent well, and electric service at the LBR which are included in the budget. A cable barrier similar to the one installed at the UBR (see Short-term Suspect Status) will be installed at the LBR to prevent launching and trailering of boats at night. Budget details for Positive Status are included in Appendix C.

Closure of the UBR will result in increased use of the LBR. While not directly considered in this plan, increased use may warrant upgrades to LBR parking, launching and docking facilities.

Public Outreach

At Positive Status, statewide public outreach efforts will continue to follow the process outlined in the Administrative Rapid Response Plan (WGFD 2020). The Regional Fisheries Supervisor and Regional AIS Specialist will continue to collaborate with the Green River and Pinedale Regional I&E Specialists to keep the local boating public aware of the threats and responsibilities associated with a Positive Status.

RAPID RESPONSE – INFESTED STATUS

Fontenelle Reservoir will be considered Infested if an established (recruiting and reproducing) population of adult dreissenid mussels is identified. Fontenelle Reservoir will remain at Infested Status until methods for complete eradication are discovered and implemented. Based on the best available technology and science at the time of this publication, it is expected that Fontenelle Reservoir would remain in Infested Status in perpetuity.

The goal during Infested Status is still to minimize the risk of spreading mussels to other waters. We will need to provide the capacity to contact all boaters coming off the water, conduct exit inspections, and ensure all boats leaving have undergone a full decontamination. All watercraft leaving the reservoir will receive a red seal and seal receipt to verify the watercraft received an exit inspection. Red seals will designate use on a suspect, positive or infested water versus the brown seal currently used after a Wyoming AIS inspection.

Communication Plan

The administrative communication chain will continue to be utilized to inform all parties on follow-up sampling results and water status (see WGFD AIS Administrative Rapid Response Plan; WGFD 2020). In addition, the Green River Region internal communication chain outlined in the Short-term Suspect Status section (above) will continue to be utilized to inform the Green River Region and key stakeholders of changes in status level.

Closures

Closures during Infested Status will be similar to Positive Status. The UBR will remain closed to minimize staffing needs during periods of low boat use. Shore launching of trailered watercraft will remain closed throughout the year and night closures will be implemented to prevent watercraft launching and trailering after hours. If Fontenelle Reservoir goes directly from Short-term Suspect Status to Infested Status, consideration should be given to temporarily closing the reservoir to all boating until check stations, equipment and staff are in place to provide inspections and full decontaminations of all watercraft leaving the reservoir.

Check Station

All watercraft leaving Fontenelle Reservoir will be inspected at the LBR. Signs will be placed at both ramps (upper and lower) to notify boaters that stopping at the check station is mandatory. Additional signage along access routes around the reservoir will notify boaters that shore-launching is prohibited. Dates and hours of operation will be the same as Long-term Suspect Status and are referenced in Appendix B. The provisional local boater program implemented during the Long-term Suspect Status will be continued if initial results consider it a success.

Staffing Plan

Staffing will be similar to Long-term Suspect and Positive status (Appendix B). However, given the additional workload associated with full decontamination of all boats at Infested Status and in the interest of providing an effective and efficient service to boaters, four additional inspectors will be hired. This will allow at least two additional decontamination units to operate at the check station. The provisional local boater program implemented during Long-term Suspect Status will be continued if initial results consider it a success. Annual personnel costs for Infested Status are included in Appendix C.

Supplies and Equipment

Supplies and equipment will be similar to Long-term Suspect and Positive status. If transitioning from Suspect Status, improvements to the check station, installation of a boat ramp closure cable, well drilling and power installation will need to be completed. Two additional decontamination units (six total) will be needed and an additional camper trailer and set of generators will be purchased to house additional technicians needed at Infested Status. Budget details for Infested Status are included in Appendix C.

Closure of the UBR will result in increased use of the LBR. While not directly considered in this plan, increased use may warrant upgrades to LBR parking, launching and docking facilities.

Public Outreach

At Infested Status, statewide public outreach efforts will continue to follow the process outlined in the Administrative Rapid Response Plan (WGFD 2020). The Regional Fisheries

Supervisor and Regional AIS Specialist will continue to collaborate with the Green River Regional I&E Specialist to keep the local boating public aware of the threats and responsibilities associated with a Long-term Suspect Status on Fontenelle Reservoir.

REFERENCES

WGFD. 2019. Wyoming Game and Fish Department Aquatic Invasive Species Sampling and Monitoring Manual. Wyoming Game and Fish Department, Cheyenne, WY.

WGFD. 2020. Wyoming Game and Fish Department Administrative Dreissenid Mussel Rapid Response Plan. Wyoming Game and Fish Department, Cheyenne, WY.

APPENDIX A: KEY CONTACTS

		Phone	Email
<u>Wyoming Game & Fish Department</u>			
Josh Leonard	Aquatic Invasive Species Coordinator	307-721-1374	joshua.leonard@wyo.gov
Robert Keith	Green River Region Fisheries Supervisor	307-875-3223	robert.keith@wyo.gov
Todd Graham	Green River Region Wildlife Supervisor	307-875-3223	todd.graham@wyo.gov
Wes Gordon	Green River Region AIS Specialist	307-875-3225x8622	wes.gordon@wyo.gov
Troy Laughlin	Green River Region Fisheries Biologist	307-875-3223	troy.laughlin@wyo.gov
John Walrath	Green River Region Fisheries Biologist	307-875-3223	john.walrath@wyo.gov
Vacant	Cokeville Game Warden	307-279-3466	
Chris Baird	Kemmerer Game Warden	307-746-2248	chris.baird@wyo.gov
Miles Anderson	Habitat Access Supervisor - Pinedale	307-367-4353	miles.anderson@wyo.gov
Vacant	Information & Education Specialist	307-875-3225x224	
<u>U.S. Bureau of Reclamation</u>			
Kirk Jensen	Fontenelle Dam and Powerplant Supervisor	307-248-3846	knjensen@usbr.gov
Nick Williams	Area Manager	801-524-3745	nwilliams@usbr.gov
Vacant	Regional Director	801-524-3600	na
<u>Bureau of Land Management</u>			
Kimberly Foster	Field Manager	307-352-0256	kfoster@blm.gov
<u>U.S. Fish and Wildlife Service</u>			
Tom Korner	Seedskaadee Refuge Manager	307-413-6149	Tom_Korner@fws.gov
<u>Stakeholders</u>			
LaBarge Chamber of Commerce		307-386-2504	
Genesis Alkali Westvaco Trona Mine		307-875-2580	
Jim Bridger Power Plant		307-382-9141	
Rock Springs/Green River Joint Powers Board		307-875-4317	
Ciner (formerly OCI)		307-875-2600	

APPENDIX B: STAFFING LEVELS NEEDED AT SUSPECT AND POSITIVE STATUS

The following represents the number of inspectors conducting boat inspections and educating watercraft owners at exit check stations during pre-watercraft season (April 1-May 20), peak-watercraft season (May 21 thru September 15) and post-watercraft season (September 15 to November 15) on Fontenelle Reservoir. Hours worked each shift are based on the longest day during each season: **pre-watercraft season** opening shift is from 6:30 AM to 2:30 PM, and closing shift is from 11:30 AM to 9:30 PM, **peak-watercraft season** opening shift is from 6:30 AM to 2:30 PM, mid-day shift is from 10:30 AM to 7:30 PM and closing shift is from 11:30 AM to 9:30 PM, **post-watercraft season** opening shift is from 6:30 AM to 2:30 PM, and closing shift is from 11:30 AM to 9:30 PM).

	<u>Monday thru Wednesday, Saturday</u>			<u>Thursday thru Sunday</u>			Number Inspectors Per Week
	<u>Number inspectors per shift per day</u>			<u>Number inspectors per shift</u>			
	Opening shift	Mid-day shift	Closing shift	Opening shift	Mid-shift	Closing shift	
Lower Boat Ramp check station							
Pre-watercraft season	1	0	1	1	0	1	4
Peak-watercraft season	1	1	1	1	1	1	6
Post-watercraft season	1	0	1	1	0	1	4

APPENDIX C: ANNUAL BUDGETS ASSOCIATED WITH EACH STATUS LEVEL

SHORT-TERM SUSPECT STATUS

Travel	Description	# of Days	Cost/Day	Total Cost
	Camp Groceries (person days)	252	\$24	\$6,048
	Per Diem	252	\$157	\$39,564
	Subtotal			\$45,612
Supplies	Description	# of units	Cost/unit	Total Cost
	Ramp Closed Sign	1	\$100	\$100
	Metal post	2	\$60	\$120
	3/4 inch cable (30 ft)	1	\$100	\$100
	Additonal closure signs (access roads)	5	\$100	\$500
	Post and Hardware for signs	5	\$18	\$90
	Decon Unit rental per week	3	\$1,400	\$4,200
	550 gal water storage tank	1	\$500	\$500
	Gas (generator, etc./month)	6	\$150	\$900
	Traffic cones	5	\$20	\$100
	Misc supplies and repairs-cost/week	6	\$50	\$300
	Inspection books	30	\$2	\$60
	Seals	200	\$0.03	\$6
	Wire for seals	200	\$0.03	\$6
	Subtotal			\$6,982
	Total			\$52,594

LONG-TERM SUSPECT STATUS YEAR 1

Personnel	Description	# of Months	Cost/Month	Total Cost
	Biologist I, 10 months	10	\$4,543	\$45,430
	9-month technicians (3)	27	\$2,863	\$77,301
	5-month technicians (2)	10	\$2,863	\$28,630
	Subtotal			\$151,361
Vehicle	Description	# of Months	Cost/Month	Total Cost
	Purchase 3/4 ton pickup	1	\$33,000	\$33,000
	State Motor Pool Sedan 1	9	\$500	\$4,500
	State Motor Pool Sedan 2	9	\$500	\$4,500
	State Motor Pool Sedan 3	5	\$500	\$2,500
	Subtotal			\$44,500
Travel	Description	# of Days	Cost/Day	Total Cost
	Camp Groceries	252	\$24	\$6,048
	Per Diem for outside help	30	\$157	\$4,710
	Subtotal			\$10,758
Supplies	Description	# of Units	Cost/Unit	Total Cost
	16-foot utility trailer, 10,000lb rating	1	\$4,000	\$4,000
	550 gal plastic ag tank	2	\$450	\$900
	2 inch trash pumps	1	\$300	\$300
	Office Trailer	1	\$20,000	\$20,000
	Generator 2-pack with parallel	3	\$1,900	\$5,700
	Decon Unit with attachments	4	\$12,500	\$50,000
	Camp Trailer	3	\$20,000	\$60,000
	Gas (generator, etc./month)	9	\$150	\$1,350
	Misc supplies 231 - 239 series			\$5,000
	Check Station signs	3	\$650	\$1,950
	Seals	200	\$0	\$6
	Wire for seals	200	\$0	\$6
	Inspection books	30	\$2	\$60
	Subtotal			\$149,272
	Total			\$355,891

LONG TERM SUSPECT STATUS YEARS 2-3

Personnel	Description	# of Months	Cost/Month	Total Cost
	Biologist I, 10 months	10	\$4,543	\$45,430
	9-month technicians (3)	27	\$2,863	\$77,301
	5-month technicians (2)	10	\$2,863	\$28,630
	Subtotal			\$151,361
Vehicle	Description	# of Months	Cost/Month	Total Cost
	State Motor Pool Sedan 1	9	\$500	\$4,500
	State Motor Pool Sedan 2	9	\$500	\$4,500
	State Motor Pool Sedan 3	5	\$500	\$2,500
	Subtotal			\$11,500
Travel	Description	# of Days	Cost/Day	Total Cost
	Camp Groceries (person days)	252	\$24	\$6,048
	Per Diem for outside help	30	\$157	\$4,710
	Subtotal			\$10,758
Supplies	Description	# of units	Cost/unit	Total Cost
	misc supplies 231-239			\$2,500
	Gas (generator, etc/month)	9	150	\$1,350
	Seals	200	0.03	\$6
	Wire for seals	200	0.03	\$6
	Inspection books	30	2	\$60
	Subtotal			\$3,922
	TOTAL			\$177,541

POSITIVE STATUS

Personnel	Description	# of Months	Cost/Month	Total Cost
	Biologist I, 10 months	10	\$4,543	\$45,430
	9-month technicians (3)	27	\$2,863	\$77,301
	5-month technicians (2)	10	\$2,863	\$28,630
	Subtotal			\$151,361
Vehicle	Description	# of Months	Cost/Month	Total Cost
	Purchase 3/4 ton pickup ^a	1	\$33,000	\$33,000
	State Motor Pool Sedan 1	9	\$500	\$4,500
	State Motor Pool Sedan 2	9	\$500	\$4,500
	State Motor Pool Sedan 3	5	\$500	\$2,500
	Subtotal			\$44,500
Travel	Description	# of Days	Cost/Day	Total Cost
	Per Diem for outside help	30	\$157	\$4,710
	Camp Groceries	252	\$24	\$6,048
	Subtotal			\$10,758
Supplies	Description	# of Units	Cost/Unit	Total Cost
	Well at LBR check station	1	\$15,000	\$15,000
	Well pump/installation	1	\$5,000	\$5,000
	Concrete pad (per yard)	40	\$350	\$14,000
	Electric service to LBR	1	\$100,000	\$100,000
	16-foot utility trailer, 10,000lb rating ^a	1	\$4,000	\$4,000
	550 gal plastic ag tank ^a	2	\$450	\$900
	2-inch trash pump ^a	1	\$300	\$300
	Office Trailer ^a	1	\$20,000	\$20,000
	Generator 2-pack with parallel ^a	3	\$1,900	\$5,700
	Decon unit with attachments ^a	4	\$12,500	\$50,000
	Camp Trailer ^a	2	\$20,000	\$40,000
	Misc supplies 231 - 239 series			\$5,000
	Check Station signs ^a	3	\$650	\$1,950
	Gas (generators, etc/month)	9	\$150	\$1,350
	Seals	200	\$0.03	\$6
	Wires for seals	200	\$0.03	\$6
	Inspection books	30	\$2	\$60
	Subtotal			\$263,272
Utilities	Description	# of Units	Cost/Unit	Total Cost
	Monthly electrical service	9	\$250	\$2,250
	Subtotal			\$2,250
	Total			\$472,141

^a These items will not need to be purchased if transitioning from Long-term Suspect Status.

INFESTED STATUS

Personnel	Description	# of Months	Cost/Month	Total Cost
	Biologist I, 10 months	10	\$4,543	\$45,430
	9-month technicians (3)	27	\$2,863	\$77,301
	5-month technicians (6)	30	\$2,863	\$85,890
	Subtotal			\$208,621
Vehicle	Description	# of Months	Cost/Month	Total Cost
	Purchase 3/4 ton pickup ^a	1	\$33,000	\$33,000
	9-month State Motor Pool Sedan (1)	9	\$500	\$4,500
	5-month State Motor Pool Sedan (4)	20	\$500	\$10,000
	Subtotal			\$47,500
Travel	Description	# of Days	Cost/Day	Total Cost
	Per Diem for outside help	30	\$157	\$4,710
	Camp Groceries	252	\$24	\$6,048
	Subtotal			\$10,758
Supplies	Description	# of Units	Cost/Unit	Total Cost
	Well at LBR check station ^b	1	\$15,000	\$15,000
	Well pump/installation ^b	1	\$5,000	\$5,000
	Concrete pad (per yard) ^b	40	\$350	\$14,000
	Electric service to LBR ^b	1	\$100,000	\$100,000
	16-foot utility trailer, 10,000lb rating ^a	1	\$4,000	\$4,000
	550 gal plastic ag tank ^a	2	\$450	\$900
	2-inch trash pump ^a	1	\$300	\$300
	Office Trailer ^a	1	\$20,000	\$20,000
	Generator 2-pack with parallel ^c	4	\$1,900	\$7,600
	Decon unit with attachments ^d	6	\$12,500	\$75,000
	Camp Trailer ^c	3	\$20,000	\$60,000
	Misc supplies 231 - 239 series			\$5,000
	Check Station signs ^a	3	\$650	\$1,950
	Gas (generators, etc/month)	9	\$150	\$1,350
	Seals	200	\$0.03	\$6
	Wires for seals	200	\$0.03	\$6
	Inspection books	30	\$2	\$60
	Subtotal			\$310,172
Utilities	Description	# of Units	Cost/Unit	Total Cost
	Monthly electrical service	9	\$250	\$2,250
	Subtotal			\$2,250
	Total			\$579,301

^a Already purchased if transitioning from Long-term Suspect or Positive status.

^b Already purchased if transitioning from Positive Status.

^c Only need to purchase one unit if transitioning from Long-term Suspect or Positive status.

^d Only need to purchase two units if transitioning from Long-term Suspect or Positive status.