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

Cody Regional Fisheries Management Crew, Wyoming Game and Fish Department, 2820 State Highway 120, Cody, WY 82414

SUMMARY

Buffalo Bill Reservoir is located at the confluence of the North Fork and South Fork Shoshone rivers 6 miles west of Cody, WY. The reservoir was constructed in 1910 at the confluence of the two rivers and enlarged in the 1990s. Dam height is 350 feet and water surface at full operating pool is 8,315 surface acres. Most of the land surrounding Buffalo Bill Reservoir is owned by the United States Bureau of Reclamation and managed by Wyoming State Parks and Cultural Resources as Buffalo Bill State Park.

Buffalo Bill Reservoir is sickle shaped with two distinct arms; North Fork Arm and South Fork Arm. The reservoir is approximately 7.4 miles long with an average width of 1.5 miles. The reservoir is at an elevation of 5,394 feet and a volume of 646,565 acre-feet of water when at full pool. Depths in Buffalo Bill Reservoir average approximately 75 feet when the reservoir is at full pool. Maximum depths are found near the dam and are around 300 feet at full pool.

The boating season is typically from early May through October. There are five established boat ramps on Buffalo Bill Reservoir. The majority of boat use occurs at the Lake Shore ramp followed by the Bartlett Lane ramp. The Big Horn Basin Boat Club offers slips for members and most members boat exclusively on Buffalo Bill Reservoir. Gibbs Bridge is used primarily as an egress for rafts during July and August.

Most boaters are residents of Wyoming. The goal of rapid response at all status levels is to minimize the risk of spreading Dreissenid mussels to other waters. This will be accomplished by closing the Sheep Mountain and Gibbs Bridge ramps, prohibiting shoreline launching and thus requiring all boats launching in Buffalo Bill Reservoir to travel past the inspection and decontamination stations that will be established at the North Shore and Bartlett Lane ramps.

One inspector will be present at each inspection station under the Short-Term Suspect Status level. For all other status levels, two inspectors will be present at each inspection station. Six inspectors will be hired for Long-term Suspect Status. Both inspection stations will be operated from 10 am to ½ hour after sunset from April 15 through November 15.

The cost associated with responding to the detection of Dreissenid mussels in Buffalo Bill Reservoir range from $3,747 for the six week Short-term Suspect Status period to a first year cost of $264,320 for Infested Status.

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 be attributed 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 area 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 close proximity of zebra and quagga mussels to Wyoming elevates the threat of introduction and increases the need for plans to contain them if detected.

Currently, Wyoming's AIS program is focused on outreach, 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 allows for inspections 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.

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 Buffalo Bill Reservoir and are verified by independent experts and genetic analysis. At that point, the reservoir 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 is 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 longer term containment and monitoring plan is developed.

CONFIRMATION OF DREISSENID 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*. Currently, 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 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

Buffalo Bill Reservoir is located at the confluence of the North Fork and South Fork Shoshone rivers 6 miles west of Cody, WY. The reservoir was constructed in 1910 at the confluence of the two rivers and enlarged in the 1990s. Dam height is 350 feet and water surface at full operating pool is 8,315 surface acres.

Buffalo Bill Reservoir is sickle shaped with two distinct arms; North Fork Arm and South Fork Arm. The reservoir is approximately 7.4 miles long with an average width of 1.5 miles. The reservoir is at an elevation of 5,394 feet and a volume of 646,565 acre-feet of water when at full pool. Depths in Buffalo Bill Reservoir average approximately 75 feet when the reservoir is at full pool. Maximum depths are found near the dam and are around 300 feet at full pool.

The land surrounding Buffalo Bill Reservoir is owned by the United States Bureau of Reclamation and managed by Wyoming State Parks and Cultural Resources as Buffalo Bill State Park.

The boating season is typically from early May through October. There are five established boat ramps on Buffalo Bill Reservoir (Figure 1). The majority of boat use occurs at the Lake Shore ramp followed by the Bartlett Lane ramp. The Big Horn Basin Boat Club offers slips for members and most members boat exclusively on Buffalo Bill Reservoir. Gibbs Bridge is used primarily as an egress for rafts during July and August. The Sheep Mountain ramp is typically usable June – November.

FIGURE 1: Google Earth image showing the five boat launch sites on Buffalo Bill Reservoir, Wyoming.

Between January 1 and November 11, 2019, a total of 364 boats were inspected that were destined for Buffalo Bill Reservoir. Of these, 53% were resident boats and 47% nonresident. These numbers are biased towards nonresident boats since all boats coming into the state of Wyoming from out of state must be inspected March 1 – November 30. Of the nonresident boats, 68% were from Montana, and 4% or less each were from Colorado, Washington, California, and Idaho. The majority of boats (84%) bound for Buffalo Bill Reservoir were motorized. Approximately 8% of the boats required high risk inspection and 1% of boats required decontamination.

RAPID RESPONSE – SHORT-TERM SUSPECT STATUS

This section outlines the Department's actions between the time the first positive detection of Dreissenid mussels is received and receipt of follow-up sample results. This time

period is estimated to be approximately six weeks in duration. The primary goal during this time period is to minimize the risk of spreading mussels to other waters and to provide capacity to contact all boaters coming on and off Buffalo Bill Reservoir. Within one week of the initial detection, 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. All watercraft leaving Buffalo Bill 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 at all Wyoming check stations.

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 should 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, WGFDs 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 Regional Fisheries Supervisor and the Fish Division Chief, who contacts the WGFD Director. On the regional level, the Cody Regional Fisheries Supervisor will begin the regional communication chain to disseminate information about the detection to internal and external partners and stakeholders (Figure 2). 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 North and South Cody 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 Cody Regional Fisheries Supervisor or biologists will also contact key stakeholders, including the Buffalo Bill State Park Superintendent, USBR Wyoming Area Manager, and resource managers downstream (Bighorn Canyon National Recreation Area, Montana Fish, Wildlife and Parks). He or she will also contact local business owners, including Rocky Mountain Sports, Mountain Valley Motor Sports, Big Horn Basin Boat Club, Wyo Trout Guides, and North Fork Anglers. All downstream irrigation districts will also be contacted. Boater contacts made through the 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 the Regional I&E Specialist (see Public Outreach, below).

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 and a brief description of containment protocols that will be put in place. Every effort should be made to quickly contact all partners and stakeholders prior to beginning public outreach efforts.

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

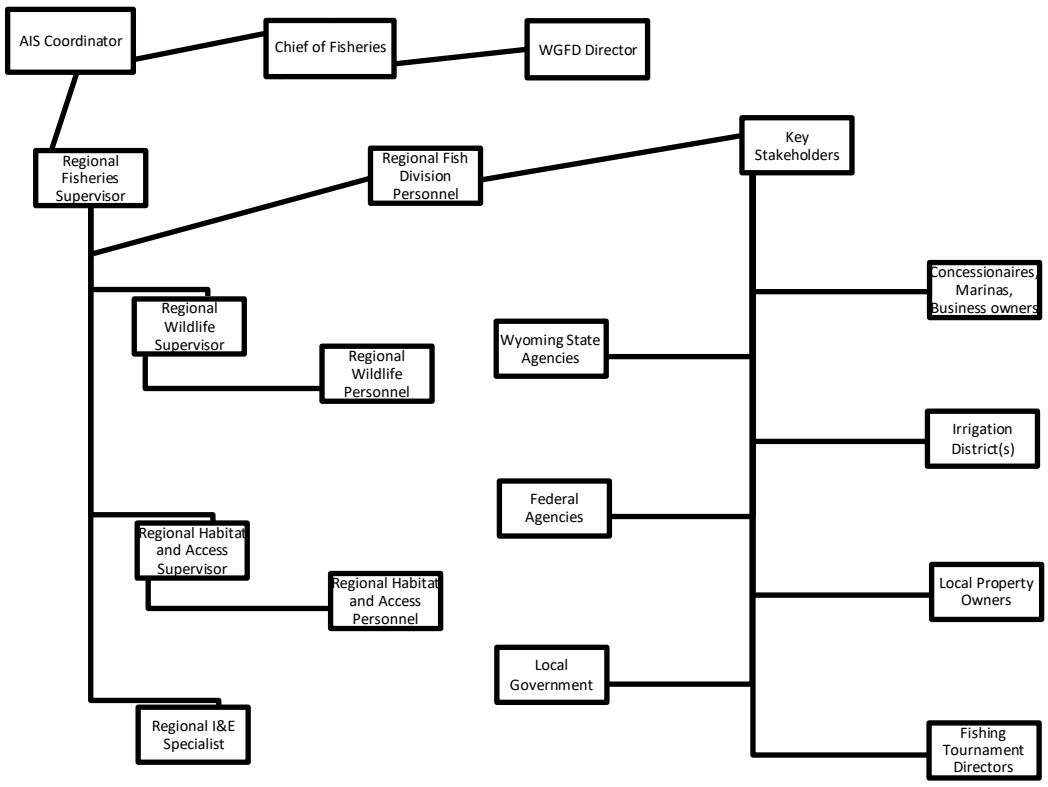

FIGURE 2. Communication chain for dissemination of information on the local and regional level following a Dreissenid mussel detection in a Wyoming water.

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 and Check Station

In coordination with Buffalo Bill State Park, the Sheep Mountain ramp, Gibbs Bridge ramp, and shoreline launching will be closed. Ramps will physically blocked with concrete barriers provided by the State Park. With the closure of these launch sites, all boats launching in Buffalo Bill Reservoir will have to use the Lake Shore, Bartlett Lane, and Big Horn Basin Boat Club sites (Figure 1). Two check stations will be established; one at the Lake Shore ramp and one at the Bartlett Lane ramp. These two locations will ensure that all boats leaving Buffalo Bill Reservoir will travel past an inspection station. The stations will operate from 10 AM to 8 PM daily, or ½ hour after sunset, whichever comes first.

Staffing Plan

The two stations will be staffed by the Cody Region AIS rover position, the Cody AIS Specialist, and other regional staff. The station will have one inspector present each day. Inspectors will work 12 hour shifts with one split shift day per week (i.e., 9 AM to 1 PM, 1 PM to 5 PM, and 5 PM to 9 PM).

Supplies and Equipment

The North Cody decontamination unit will be transported to the Lake Shore site and the Bartlett Lane site will rely on a decontamination unit borrowed from a different region. All utilities, including water, are available at the Lake Shore site. A camper trailer will be placed at each inspection station for use by inspectors. Signs will be posted that notify boaters of the need for exit inspection and decontamination upon leaving the reservoir.

Pickup truck style water tanks (325 gallon) will be purchased. One will be staged at the Bartlett Lane inspection location to have spare water on hand and the other will be used to haul water to the inspection station as needed. A gasoline powered pump will be used to transfer water from spare tanks into decontamination units. A ¾ ton pickup (Cody Fish Management has two) will be used to haul water.

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 Communication and Outreach Supervisor at WGFD Cheyenne Headquarters and a statewide press release will be sent out. The AIS Coordinator, Regional Fisheries Supervisor and Regional AIS Specialist will collaborate with the Cody Regional I&E Specialist to relay information about Short-term Suspect Status at Buffalo Bill Reservoir through media outlets (newspapers, radio, etc.).

RAPID RESPONSE – LONG-TERM SUSPECT STATUS

If initial follow-up sampling does not yield a positive result, Buffalo Bill 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 areas. All watercraft leaving Buffalo Bill 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 at all Wyoming check stations.

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 get an exit inspection. Inspectors will still conduct clean, drain, dry exit inspections on boats leaving

the water and decontaminate ballast tanks and other undrainable areas. If feasible, they will continue to flush all motors. If not, they will drain outboard motors and only flush inboard/outboard and inboard motors. Public outreach will increase via multiple outlets to highlight the potential threat at the suspect water.

Given the simplicity of access to Buffalo Bill Reservoir and the ease of establishing two check stations that intercept all boater traffic, it is not anticipated that the rapid response in years 2 and 3 of Long-term Suspect Status will be significantly different from year 1. Therefore, this plan for Long-term Suspect Status will apply to all three years at this status level.

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 Cody Region internal communication chain outlined in the Short-term Suspect Status section (above) will continue to be utilized to inform the Cody Region and key stakeholders of follow-up sampling results. In addition, coordination among agency personnel will occur at the bi-annual Bighorn Issues Group meetings and as needed throughout the 3-year time period.

Closures and Check Station

The same closures outlined in the Short-term Suspect Status section will be continued throughout the 3-year time period pending any changes to status (i.e., upgrading to Positive or Infested status). This includes closure of the South Shore ramp and Gibbs Bridge ramp, and a prohibition of all shore launching. Signs indicating the ramp closures, prohibition on shoreline launching, and notifying boaters of mandatory exit inspections will be installed where needed. The two check stations (Lake Shore and Bartlett Lane) will be operated daily from the hours of 10 AM to ½ hour after sunset.

Staffing Plan

The stations will be staffed by six technicians (see budget in Appendix B). Each station will have two inspectors present each day. The check stations will run from April 15 through November 15. The inspectors will work 12 hour shifts with one split shift day per week (i.e., 9 AM to 1 PM, 1 PM to 5 PM, and 5 PM to 9 PM). The Cody Region fisheries biologists, Fisheries Supervisor, and AIS Specialist will fill in as needed.

Supplies and Equipment

Three State Motor Pool-leased vehicles will be necessary for transport of staff and equipment to and from the regional office. Four decontamination units will be purchased if Buffalo Bill Reservoir enters Long-term Suspect Status. Signs will be posted that notify boaters of the need for exit inspection and decontamination upon leaving the reservoir.

Pickup truck style water tanks (325 gallon) will be purchased and staged at the Bartlett Lane inspection location to have spare water on hand. A gasoline powered pump will be used to transfer water from spare tanks into decontamination units. One of the current AIS ½ ton trucks will be traded in for a ¾ ton pickup. The ¾ ton truck will be used to haul water to the tanks at

the inspection station as necessary. Two office trailers will be purchased for use at each check station. Two parallel 2,000 watt generators will be used to run lights and air conditioning unit in the Bartlett Lane trailer.

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 Cody Regional I&E Specialist to keep the local boating public aware of the threats and responsibilities associated with a Long-term Suspect Status on Buffalo Bill Reservoir.

RAPID RESPONSE – POSITIVE STATUS

Buffalo Bill 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). Buffalo Bill 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 Buffalo Bill Reservoir's status to Infested. All watercraft leaving Buffalo Bill 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 at all Wyoming check stations.

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 Cody Region internal communication chain outlined in the Short-term Suspect Status section (above) will be used to inform the Cody Region and key stakeholders of changes in status level.

Closures and Check Station

The same closures outlined in the Short-term Suspect Status section will be continued under Positive status. This includes closure of the South Shore ramp and the Gibbs Bridge ramp, and a prohibition of all shore launching. Signs indicating the ramp closures, prohibition on shoreline launching, and notifying boaters of mandatory exit inspections will be installed where needed. The Lake Shore and Bartlett Lane check stations will continue to operate daily from the hours of 10 AM to ½ hour after sunset.

Staffing Plan

The stations will be staffed by a contract Biologist I and six technicians (see budget in Appendix B) and will follow the scheduling pattern outlined in Long-Term Suspect Status. The Biologist I will oversee check station operations, supervise inspectors and assist with inspections as necessary. The check station will run from April 15 through November 15. Each check station will have two inspectors present each day. The inspectors will work 12-hour shifts with one split shift day per week (i.e., 9 AM to 1 PM, 1 PM to 5 PM, and 5 PM to 9 PM). The Cody Region fisheries biologists, Fisheries Supervisor, and AIS Specialist will fill in as needed.

Supplies and Equipment

Three State Motor Pool-leased vehicles will be necessary for transport of staff and equipment to and from the regional office. Four decontamination units will be purchased if Buffalo Bill Reservoir enters Positive Status. Signs will be posted that notify boaters of the need for exit inspection and decontamination upon leaving the reservoir.

Pickup truck style water tanks (325 gallon) will be purchased and staged at the Bartlett Lane inspection location to have spare water on hand. A gasoline powered pump will be used to transfer water from spare tanks into decontamination units. One of the current AIS ½ ton trucks will be traded in for a ¾ ton pickup. The ¾ ton truck will be used to haul water to the tanks at the inspection station as necessary. Two office trailers will be purchased for use at each check station.

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 Cody Regional I&E Specialist to keep the local boating public aware of the threats and responsibilities associated with a Long-term Suspect Status on Buffalo Bill Reservoir.

RAPID RESPONSE – INFESTED STATUS

Buffalo Bill Reservoir will be considered Infested if an established (recruiting or reproducing) population of Dreissenid mussels is identified. Buffalo Bill 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 Big Horn Lake 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 Buffalo Bill 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 at all Wyoming check stations.

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 Cody Region internal communication chain outlined in the Short-term Suspect Status section (above) will continue to be utilized to inform the Cody Region and key stakeholders of changes in status level.

Closures and Check Station

The same closures outlined in the Short-term Suspect Status section will be continued under Infested Status. This includes permanent closure of the South Shore ramp and the Gibbs Bridge ramp, and a prohibition of all shore launching. Signs indicating the ramp closures, prohibition on shoreline launching, and notifying boaters of mandatory exit inspections will be installed where needed. The Lake Shore and Bartlett Lane check stations will continue to be operated daily from the hours of 10 AM to ½ hour after sunset.

Staffing Plan

The stations will be staffed by a contract or permanent Biologist I and six additional technicians (see budget in Appendix B). The check station will run from April 15 through November 15. Each station will have two inspectors present each day. Inspectors will work 12 hour shifts with one split shift day per week (i.e., 9 AM to 1 PM, 1 PM to 5 PM, and 5 PM to 9 PM). The Cody Region fisheries biologists, Fisheries Supervisor, and AIS Specialist will fill in as needed.

Supplies and Equipment

Three State Motor Pool-leased vehicles will be necessary for transport of staff and equipment to and from the regional office. Four decontamination units will be purchased if Buffalo Bill Reservoir enters Infested Status. Additional signs will be purchased and installed that will help inform boaters of the status of the lake and of the decontamination requirements associated with boating on Buffalo Bill Reservoir.

Pickup truck style water tanks (325 gallon) will be purchased and staged at the Bartlett Lane inspection location to have spare water on hand. A gasoline powered pump will be used to transfer water from spare tanks into decontamination units. One of the current AIS ½ ton trucks will be traded in for a ¾ ton pickup. The ¾ ton truck will be used to haul water to the tanks at the inspection station as necessary. Two office trailers will be purchased for use at each check station.

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 Cody Regional I&E Specialist to keep the local boating public aware of the threats and responsibilities associated with a Long-term Suspect Status on Buffalo Bill 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
Wyoming Game & Fish Department			
Sam Hochhalter	Cody Region Fisheries Supervisor	307-527-7125	sam.hochhalter@wyo.gov
Dan Smith	Cody Region Wildlife Supervisor	307-527-7125	dan.smith@wyo.gov
Alex LeCheminant	Cody Region AIS Specialist	307-527-7125	alex.lecheminant1@wyo.gov
Joe Skorupski	Cody Region Fisheries Biologist	307-527-7125	joe.skorupski@wyo.gov
Jason Burckhardt	Cody Region Fisheries Biologist	307-527-7125	jason.burckhardt@wyo.gov
Travis Crane	North Cody Game Warden	307-899-1266	travis.crane@wyo.gov
Grant Gerharter	South Cody Game Warden	307-899-1266	grant.gerharter@wyo.gov
Tara Hodges	Information & Education Specialist	307-527-7125	tara.hodges@wyo.gov
Montana Fish Wildlife and Parks			
Mike Ruggles	Region 5 Fisheries Manager	406-247-2961	mikeruggles@mt.gov
Tom Woolf	AIS Bureau Chief	406-444-1230	thomas.woolf@mt.gov
Buffalo Bill State Park			
Dan Marty	Superintendent	307-421-3545	dan_marty@wyo.gov
Bighorn Canyon National Recreation Area			
Mike Tranel	Superintendent	307-548-5406	mike_tranel@nps.gov
U.S. Bureau of Land Management			
Cade Powell	Cody Field Manager	307-578-5900	rcpowell@blm.gov
U.S. Bureau of Reclamation			
Cordell Perkins	Land Management Branch	307-261-5675	cperkins@usbr.gov
Boat Clubs			
Big Horn Basin Boat Club		307-629-9041	
Irrigation Districts			
Heart Mountain		307-754-4685	
Shoshone		307-754-5741	
Willwood		307-754-3831	
Deaver		307-664-2351	
Sidon		307-548-7424	
Lovell		307-548-7118	
Stakeholders			
Rocky Mountain Sports	Troy Koster	307-527-6071	
Wyo Trout Guides	Blake Clark	307-578-8217	
North Fork Anglers	Tim Wade	307-527-7274	
Mountain Valley Motorsports		307-587-6218	

APPENDIX B: ANNUAL BUDGETS ASSOCIATED WITH EACH STATUS LEVEL

SHORT-TERM SUSPECT STATUS

Supplies	Description			Total Cost
	Pickup bed water tanks	3	$349	$1,047
	2-inch gas powered water pump	1	$300	$300
	Check station signs	4	$600	$2,400
	Subtotal			**$3,747**
	Total			**$3,747**

LONG-TERM SUSPECT STATUS

Personnel	Description	# of Months	Cost/Month	Total Cost
	Technician 1, 9 months	9	$2,863	$25,767
	Technician 2, 9 months	9	$2,863	$25,767
	Technician 3, 9 months	9	$2,864	$25,776
	Technician 4, 9 months	9	$2,863	$25,767
	Technician 5, 9 months	9	$2,863	$25,767
	Technician 6, 9 months	9	$2,864	$25,776
	Subtotal			**$154,620**
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	9	$500	$4,500
	Subtotal			**$13,500**
Travel	**Description**	**# of Days**	**Cost/Day**	**Total Cost**
	Subtotal			**$0**
Supplies	**Description**			**Total Cost**
	Office Trailer	2	$20,000	$40,000
	Generator 2-pack with parallel	2	$1,900	$3,800
	Check station signs	4	$600	$2,400
	Decontamination Unit	4	$12,500	$50,000
	Subtotal			**$96,200**
	Total			**$264,320**

POSITIVE STATUS

Personnel	Description	# of Months	Cost/Month	Total Cost
	Technician 1, 9 months	9	$2,863	$25,767
	Technician 2, 9 months	9	$2,863	$25,767
	Technician 3, 9 months	9	$2,864	$25,776
	Technician 4, 9 months	9	$2,863	$25,767
	Technician 5, 9 months	9	$2,863	$25,767
	Technician 6, 9 months	9	$2,864	$25,776
	Subtotal			**$154,620**
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	9	$500	$4,500
	Subtotal			**$13,500**
Travel	**Description**	**# of Days**	**Cost/Day**	**Total Cost**
	Subtotal			**$0**
Supplies	**Description**			**Total Cost**
	Office Trailer	2	$20,000	$40,000
	Generator 2-pack with parallel	2	$1,900	$3,800
	Check station signs	4	$600	$2,400
	Decontamination Unit	4	$12,500	$50,000
	Subtotal			**$96,200**
	Total			**$264,320**

INFESTED STATUS

Personnel	Description	# of Months	Cost/Month	Total Cost
	Technician 1, 9 months	9	$2,863	$25,767
	Technician 2, 9 months	9	$2,863	$25,767
	Technician 3, 9 months	9	$2,864	$25,776
	Technician 4, 9 months	9	$2,863	$25,767
	Technician 5, 9 months	9	$2,863	$25,767
	Technician 6, 9 months	9	$2,864	$25,776
	Subtotal			**$154,620**
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	9	$500	$4,500
	Subtotal			**$13,500**
Travel	**Description**	**# of Days**	**Cost/Day**	**Total Cost**
	Subtotal			**$0**
Supplies	**Description**			**Total Cost**
	Office Trailer	2	$20,000	$40,000
	Generator 2-pack with parallel	2	$1,900	$3,800
	Check station signs	4	$600	$2,400
	Decontamination Unit	4	$12,500	$50,000
	Subtotal			**$96,200**
	Total			**$264,320**