

Rapid Response Plan Following Detection of Dreissenid Mussels in Fremont Lake, Wyoming

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SUMMARY

Fremont Lake is located 3.5 miles north of Pinedale within the Bridger-Teton National Forest. This 4,996 surface acre reservoir sits at an elevation of 7,418 feet and is 12 miles long, 0.5 miles wide and 608 feet deep. It is accessed by traveling north from the Town of Pinedale on Fremont Lake Road, then turning west onto Forest Service Road 111 which accesses the southern and eastern shoreline of Fremont Lake. Fremont Lake is fed by Pine Creek, which originates in the Bridger Wilderness. The lake and its immediate shoreline is owned by the United States Forest Service (USFS). There are several private residences as well as the Lakeside Lodge and Marina on the southern end of Fremont Lake that are leased by USFS. Adjacent to the USFS land is a mix of Bureau of Land Management (BLM) and private land.

The boating season extends from May through early November, depending on weather. There are two public boat ramps and three private boat ramps. There are several access points along the east shoreline where small watercraft can launch. All types of boats are used on Fremont Lake, with most recreational boats (e.g., wakeboard boats with ballast tanks and jet skis) being used during July and August. From January 1, 2018 to November 11, 2019, there were 2002 Fremont Lake-bound boats inspected, of which 68 were high risk and 11 of those boats were decontaminated. The majority of boats were residents (72%), followed by Utah (12%), Idaho (4%), and Colorado (2%) boats. Sixty-three percent of the boats were motorized, with 50% of those powered by outboard or inboard/outboard motors.

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 Fremont Lake. During the initial six weeks, regional personnel will staff the check station, which will be open from one hour after sunrise to one hour after sunset, May through November. There will be a check station located at the lower boat ramp (LBR) and at the Forest Service Road 111 pull out (FSR111). The check station on FSR111 is strategically located to intercept all boats leaving Fremont Lake. After the initial six weeks, it will be expanded and paved and will serve as the only check station for Fremont Lake. The number of personnel required to staff the check station will range from two to fourteen, depending on the month and status. The hours of operation will remain the same and there will be no closures. A local boater program will be initiated at Infested Status. The cost will range from \$28,000 (not including regional personnel time) during the first six weeks to nearly \$380,000 for the initial year at Infested Status. After the initial year, annual operating expenses for containment of Dreissenid mussels at an infested Fremont Lake are estimated at approximately \$160,000.

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 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 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 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 Fremont Lake 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 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

Fremont Lake is located 3.5 miles north of Pinedale within the Bridger-Teton National Forest. The reservoir is accessed by traveling north from the Town of Pinedale on Fremont Lake Road, then turn west onto Forest Service Road 111 which accesses the southern and eastern shoreline of Fremont Lake (Figures 1-3). At the turn off for the Fremont Lake Campground is Osprey Road that allows access to the Sylvan Bay summer homes and marina, and Sylvan Bay public access area.

The lake is a piedmont lake at an elevation of 7,418 feet and was formed by glacial scouring with a terminal moraine dam. The lake is 4,996 surface acres and is 608 feet deep when full. The mean depth is 271 feet. The lake is around 12 miles long and ½ mile wide. The extremely oligotrophic nature of Fremont Lake (TDS, 11-13 mg/l) results from a watershed that is composed primarily of highly insoluble crystalline rock. The surrounding landscape is typical sagebrush steppe community and grassland in the lower half, whereas the upper half of the lake shoreline is rocky with conifer and aspen communities. The lower west side of the lake burned and is now infested with cheat grass. There is a trail for about two miles on the west shoreline. There is a road along the east side of the lake to the Fremont Lake Campground. There are several wetland marsh areas adjacent to the shoreline on the west side near the inlet.

In the 1930s, a concrete dam was built on the lake, which raised the lake elevation by two feet. A new dam was built in 1994 that added an additional three feet of elevation to the reservoir. The dam is owned and operated by the State of Wyoming Board of Control. There are two irrigation ditches directly off Fremont Lake (Highland Ditch and Fremont Ditch). These ditches supply water to many landowners. Fremont Lake is also the Town of Pinedale's municipal water source.

Pine Creek, which originates in the Bridger Wilderness, is the headwater for Fremont Lake. The lake and its immediate shoreline are owned by the United States Forest Service (USFS). There are several private residences and Lakeside Lodge and Marina on the lower end of Fremont Lake that are leased by USFS. Adjacent to the USFS land is a mix of Bureau of Land Management (BLM) and Private land.

The boating season extends from May through early November depending on weather. There are two public boat ramps and three private boat ramps. Public boat ramps are located at the southwest corner of the lake (lower boat ramp) and at the Fremont Lake Campground on the eastern side of the lake (upper boat ramp). Two private boat ramps are found near Lakeside Lodge and one is at the Sylvan Bay Summer Homes (Figures 1-3). There are several access points along the east shoreline where small watercraft can launch. All types of boats are used on



Figure 1. Fremont Lake with boat ramps and AIS check station location identified.



Figure 2. South shoreline of Fremont Lake with Lower boat ramp, Lakeside Lodge marina, and AIS check station location identified.

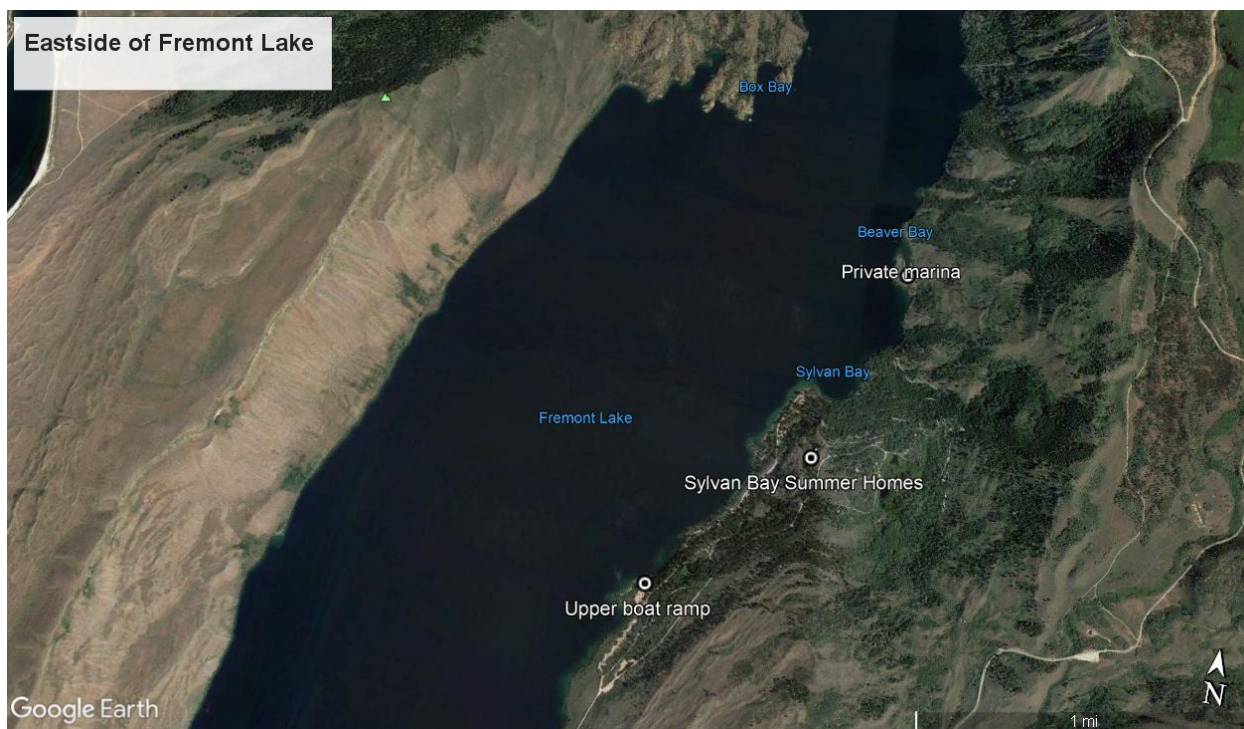


Figure 3. East shoreline of Fremont Lake with Upper boat ramp, Sylvan Bay Summer Homes and private marina locations identified.

Fremont Lake including wakeboard boats with ballast tanks and jet skis. Most ballast boats and jet skis are used during July and August. From January 1, 2018 to November 11, 2019 there were 2,002 boats inspected, of which 68 were high risk and 11 of those boats were decontaminated. The majority of boats were residents (72%), followed by Utah (12%), Idaho (4%), and Colorado (2%) boats. Sixty-three percent of the boats were motorized, with 50% of those powered by outboard or inboard/outboard motors.

Potentially other effected waters besides Fremont Lake include Pine Creek downstream of the lake, several irrigation canals, and CCC Pond. Pine Creek drains into the New Fork River.

RAPID RESPONSE – SHORT-TERM SUSPECT STATUS

In the event that a sample from Fremont Lake is confirmed positive for Dreissenid mussels, the lake 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. All watercraft leaving Fremont Lake will receive a seal and seal receipt to verify the watercraft received an exit inspection. Seals will be of a color that designates use on a suspect, positive or infested water versus the brown seal currently used at all Wyoming check stations. Quick action will be needed to mobilize the necessary personnel and resources to effectively meet these obligations.

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 initial detection of Dreissenid mussels in Fremont Lake, the WGFD AIS Coordinator will initiate the administrative communication plan outlined in the 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. The Regional Fisheries Supervisor will then follow the local and regional communication chain to disseminate information about the detection to internal and external partners and stakeholders (Figure 2). The Fisheries Supervisor will inform Pinedale Region Fish Division personnel, the Wildlife Division Supervisor, the Habitat and Access Supervisor, Regional Information and Education Specialist and Office Managers. The Regional Fisheries Supervisor will work closely with the Wildlife Division Supervisor and law enforcement officers.

The entire regional office will be informed and briefed on the actions that will be required at Fremont Lake. The Regional Fisheries Supervisor and other Regional Fish Division personnel will notify and brief stakeholders (complete list and phone numbers in Appendix A). Primary stakeholders at Fremont Lake including the Town of Pinedale, Wyoming State Engineer, Irrigation Districts (primarily Fremont and Highland ditch users), USFS Pinedale

District, BLM Pinedale, Pinedale Chamber of Commerce, Pinedale Weed and Pest, Sublette County Conservation District, Sublette Natural Resource Conservation Service, Sublette County Emergency Management, Water Commissioner (Big Piney Office), Lakeside Lodge and Marina, and private landowners with USFS leases along the south side of the lake and those at the Sylvan Bay summer homes and marina.

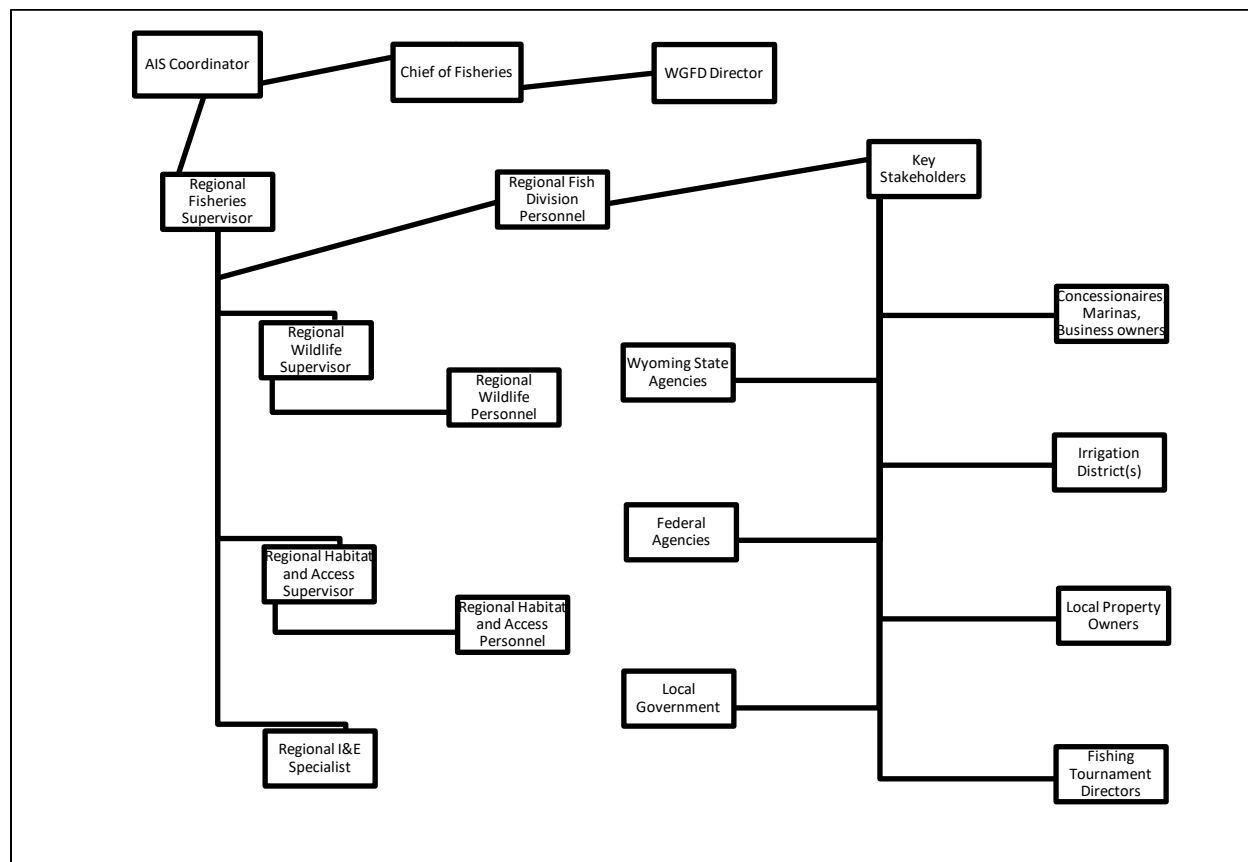


FIGURE 2. Communication chain for dissemination of information on the local and regional level following a Dreissenid mussel detection in a Wyoming water.

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.

The Regional Information and Education Specialist, AIS Coordinator, Regional Wildlife Supervisor, Regional Fisheries Supervisor and USFS personnel will coordinate meetings with the stakeholders mentioned above and hold public meetings for the Fremont Lake private landowners. A Coordination Group consisting of Town, USFS, BLM and WGFD personnel will collaborate to provide the most accurate information to the broader public audience, primarily those living along and using Pine Creek water. There are at least 18 landowners in the subdivision 500 yards downstream of the Fremont Lake dam.

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>.

Check Stations

During the initial six-week period, no closures will occur. However, 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.

The AIS check station will run from one hour after sunrise to one hour after sunset. An AIS check station will be located at the pullout on Forest Service Road 111 (FSR111). During busy months, AIS inspectors will also be located at the lower boat ramp (LBR; Figure 1). The inspectors at the FSR111 pullout will intercept all boats leaving the upper boat ramp, three private boat ramps, and CCC Pond. LBR check station will intercept all boats leaving that boat ramp (lower boat ramp). Shore launching will be allowed, as most are kayaks and canoes and will be intercepted when leaving the lake. Night closures will not be necessary.

Staffing Plan

During the six-week Short-term Suspect Status period, all personnel 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 Pinedale Regional Fish Management Crew will provide much of the staffing, but assistance will be required from Wildlife and Services division personnel in the Pinedale Region and roving AIS personnel, if available. A staffing plan for the Short-term Suspect Status period will be developed by the Pinedale Regional Fisheries Supervisor. One law enforcement personnel will be required at the lower boat ramp during the busy months and at least one must be on call and easily available in case of emergencies during lower use months.

Six inspectors and a minimum of four decontamination units will be required during busy months (June–August). Two inspectors and two decontamination units will be required in May and September. One inspector and two decontamination units will be required in October and November. To staff the check station at these levels with a 40 hour work week it would take approximately eight to ten individuals in June–August, five to seven individuals in May or September, and two to four individuals in October or November.

Supplies and Equipment:

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, including one 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 Pinedale Regional Office or the AIS program. Two 550-gallon water tanks and a 2-inch trash pump will be purchased to haul water to recharge decontamination units. One portable toilet will be located at FSR111 and will be rented for the months May through August at a cost of \$170/month. This cost includes pumping and cleaning. There is an outhouse available at LBR. A camp trailer(s) will be borrowed from the Regional Fish Management Crew or other crews in the region and will be available at each check station. Camp groceries will not be provided for local personnel, but camp groceries and per diem were budgeted for individuals from outside the Pinedale area who do not have local lodging. 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 Pinedale Region or the AIS program. Water supply for the AIS decontamination units will be the Pinedale Regional Office that is only a 10-mile round trip from the lake.

Public Outreach

Communications and outreach personnel have developed a draft statewide press release and it can be found in the WGFD Administrative Rapid Response Plan (WGFD 2020) along with a statewide public outreach plan. The AIS Coordinator, and Pinedale Regional Information and Education Specialist will work with the media to ensure accurate information is being released to the public. Important information to provide to the public includes: Name(s) of affected water(s), which species was collected, from what location(s), a brief description of the containment protocols in place at the water(s), and who to contact for more information. The information shared at this level should be adequate to serve as a template for all future requests for information and should help eliminate distribution of misinformation. Any changes or information relevant to the water's status should follow this same reporting process.

The WGFD Pinedale Regional Information and Education Specialist will be responsible for the majority of public outreach and it will be their responsibility in determining the most appropriate avenues to disseminate the information. The AIS Administrative Rapid Response Plan (WGFD 2020) and other pertinent information will be available at the Pinedale Regional Office and on the WGFD website. Local community meetings will be held in Pinedale, Boulder, and Big Piney and as requested by the stakeholders.

RAPID RESPONSE – LONG-TERM SUSPECT STATUS

YEAR 1 LONG-TERM SUSPECT STATUS

If initial follow-up sampling does not yield a positive result, Fremont Lake will 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 Fremont Lake will receive a seal and seal receipt to verify the watercraft received an exit inspection. Seals

will be of a color that designates use on a suspect, positive or infested water versus the brown seal currently used at all Wyoming check stations.

The goal of year 1 is to minimize the risk of spreading mussels to other waters. This time period runs from the initial detection through the following boating season during the months when additional sampling is occurring. A mandatory exit inspection of all conveyances will occur at Fremont Lake and entrance inspections will also be conducted if feasible. The intent is to provide efficient, yet effective, service to boaters and exit inspections will require clean, drain, dry inspections, motor flushes and decontamination of ballast tanks and other non-drainable areas. If live mussels are found on any boat during an exit inspection, a full decontamination will occur and consideration will be given to upgrading the water's status to infested.

Check Stations

During the long-term suspect period, no closures will occur. However, 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 inspections of exiting watercraft, motor flushes, and decontamination of undrainable areas such as ballast tanks.

The AIS check station will run from one hour after sunrise to one hour after sunset. An AIS check station will be located at the pullout on FSR111 (Figure 1). This will be the only check station at Fremont Lake. Shore launching will be allowed, as most are kayaks and canoes and will be intercepted when leaving the lake. Night closures will not be necessary since boat use is low after sunset.

Staffing Plan

Technician hiring will include one technician from May 1 to September 30, one technician from May 1 to November 31, and four additional technicians from June 1 to August 31. A Fremont Lake AIS crew lead will be hired as a contract biologist for May 1 through November 31. AIS technicians and the crew lead will be required to find their own housing in Pinedale. No per diem or camp groceries will be offered to Fremont Lake AIS personnel, but will be allowed for personnel assisting from other regions.

A crew of six inspectors and a minimum of four decontamination units will be required during busy months (June – August). A crew of two inspectors and a minimum of two decontamination units will be required in May and September. A crew of one inspector with two decontamination units will be required in October and November.

To staff the check station at these levels (assuming a 40-hour work week), it would take approximately eight to ten individuals in June–August, five to seven individuals in May or September, and two to four individuals in October or November.

The Fremont Lake AIS Crew Leader and associated technicians will be the primary inspectors at Fremont Lake. The Pinedale Fish Management Crew and others in the region may provide assistance to the Fremont Lake AIS Crew as needed, particularly during busy months. An AIS inspection schedule will be developed and implemented by the Fremont Lake AIS Crew Lead, with oversight from the Pinedale Fish Management Crew. One law enforcement personnel will be required at the lower boat ramp during the busy months and at least one must be on call to respond in case of emergencies during the slow months.

Supplies and Equipment

Additional equipment needs include the purchase of three decontamination units. The fourth decontamination unit required during the busy months will be from the region or on short-term loan from another region. Three additional vehicles will be required and at least one must have the capacity to tow a decontamination unit with water (3,500 lbs). A ¾-ton truck and trailer will be purchased for hauling two 550-gallon water tanks to recharge decontamination units at FSR111. A 2-inch trash pump will be used to transfer water from the trailer to the decontamination units. An office trailer will be purchased and located at FSR111 to provide shelter, storage and data entry space for inspectors. One portable toilet will be located at FSR111 and will be rented for the months May through November at a cost of \$170/month. This includes the cost of pumping and cleaning. To accommodate all boats during the busy season and to prevent erosion, FSR111 pullout area will have to be expanded from 0.10 acres to 0.50 acres. Approximately 0.50 acres of sagebrush and rock will be removed and prepped for hardening the surface. This will require two workers, a dozer, and backhoe for one day from the Habitat and Access Crew. It will cost \$18,500 for road base and \$48,000 for asphalt to harden the 0.5 acres. The development of this site will require coordination with the USFS and compliance with the National Environmental Policy Act (NEPA). The USFS personnel suggest that this activity should qualify for a Categorical Exclusion and NEPA should include plans for drilling a well and delivering power, even though these actions will not be implemented until Infested Status. Dynamic Messaging Signs will be borrowed from the Regional Wildlife Crew or the AIS program.

Water supply for the AIS decontamination units will be available the Pinedale Regional Office that is only a 10-mile round trip from the lake. Another option would be to drill a well and run electricity to the check station during this phase.

Public Outreach

Information and education aspects will be similar to those outlined in Short-term Suspect Status. However, additional meetings will be held with the Town of Pinedale, irrigation districts and Lakeside Lodge and Sylvan Bay Marina to develop mitigation strategies to minimize the impacts to their infrastructure and limit the conveyance of water from Fremont Lake or Pine Creek to other streams, lakes or ponds. The Regional Fisheries Supervisor, Jackson AIS Coordinator and Pinedale AIS contract biologist will meet with county, state and private water hauling agencies and companies to discuss the conveyance of mussels from Fremont Lake and Pine Creek water and determine alternative sites to pull water from.

YEARS 2 AND 3 LONG-TERM SUSPECT

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 outboards 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.

The Fremont Lake 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 seems unlikely since the boat use is typically low enough that AIS inspectors can handle the load and efficiently and effectively move boats through.

RAPID RESPONSE – POSITIVE STATUS

Fremont Lake 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 goal during the Positive Status period 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. All watercraft leaving Fremont Lake will receive a seal and seal receipt to verify the watercraft received an exit inspection. Seals will be of a color that designates use on a suspect, positive or infested water versus the brown seal currently used at all Wyoming check stations.

The Fremont Lake AIS Rapid Response actions for Positive Status will remain similar to Year 1 Long-term Suspect Status with the following exceptions. During the Positive Status period, no closures will occur. In order to provide an effective and efficient service to boaters, the number of personnel will remain the same since the protocol remains the same as Year 1 Long-term Suspect Status. 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 inspections and decontaminations of exiting watercraft. No additional supplies and equipment will be necessary. Water supply for the AIS decontamination units will be available at the Pinedale Regional Office that is only a 10-mile round trip from the lake if a well is not already drilled at the check station. A local boater program seems likely even though the use at Fremont Lake is considered fairly low. Most recreationists are from Sublette County. This program will buy support from the local anglers and boaters in the nearby communities.

RAPID RESPONSE – INFESTED STATUS

Fremont Lake will be considered Infested if an established (recruiting and reproducing) population of adult Dreissenid mussels is found. 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 Fremont Lake will receive a seal and seal receipt to verify the watercraft received an exit inspection. Seals will be of a color that designates use on a suspect, positive or infested water versus the brown seal currently used at all Wyoming check stations.

The Fremont Lake AIS Rapid Response actions for Infested Status will remain similar to Positive Status with the following exceptions. In order to provide an effective and efficient service to boaters, the number of personnel will increase by four. This will allow at least two

additional decontamination units to operate at the check station. A well will be drilled on USFS land near the FSR111 check station and power will be delivered to the site at this phase, if not before. The nearest power source is approximately 0.3 miles from the check station. As indicated in Long-term Suspect Status, NEPA will already be completed for the well and power. Two Dynamic Messaging Signs will be purchased. The local boater program implemented during Positive Status will remain in place during Infested Status.

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>			
Hilda Sexauer	Pinedale Region Fisheries Supervisor	307-367-4352	Hilda.sexauer@wyo.gov
John Lund	Pinedale Region Wildlife Supervisor	307-367-4352	John.lund@wyo.gov
Chris Wight	Pinedale Region AIS Specialist	307-367-4352	Chris.wight@wyo.gov
Pete Cavalli	Pinedale Region Fisheries Biologist	307-367-4352	Pete.cavalli@wyo.gov
Darren Rhea	Pinedale Region Fisheries Biologist	307-367-4352	Darren.rhea@wyo.gov
Herb Haley	Pinedale Game Warden	307-360-7435	Herb.haley@wyo.gov
Jordan Kraft	Pinedale Game Warden	307-360-7436	Jordan.Kraft@wyo.gov
Adam Hymas	Pinedale Game Warden	307-260-8966	Adam.Hymas@wyo.gov
Mark Gocke	Information & Education Specialist	307-733-2383	Mark.Gocke@wyo.gov
<u>USFS Pinedale District</u>			
Rob Hoelscher	District Ranger	307-367-4326	rhoelscher@fs.fed.us
Kate Olsen	Fisheries Biologist	307-367-4326	kate.h.olsen@usda.gov
	Recreation Specialist	307-367-4326	
<u>Bureau of Land Management</u>			
	Pinedale Field Manager	307-367-5300	
<u>Town of Pinedale</u>			
Matt Murdock	Mayor	307-367-4136	
<u>Weed and Pest</u>		307-367-4728	
<u>Sublette County Emergency Management</u>		307-367-2284	
<u>Sublette Conservation District</u>		307-367-2257	
<u>Natural Resource Conservation Service</u>		307-367-2257	
<u>Chamber of Commerce</u>		307-367-2242	
<u>State Engineer Board of Control</u>		307-276-3870	
<u>Irrigation Districts</u>		307-276-3870	
<u>Stakeholders</u>			
Lakeside Lodge and Marina		307-367-2221	
Private Residences Sylvan Bay			
Private Residences South Side			

APPENDIX B: ANNUAL BUDGETS ASSOCIATED WITH EACH STATUS LEVEL

SHORT-TERM SUSPECT STATUS

Travel	Description	# of Days	Cost/Day	Total Cost
	Camp Groceries	42	\$24	\$1,008
	Per Diem	166	\$157	\$26,062
	Subtotal			\$27,070
Supplies	Description			Total Cost
	Outhouse rental (months)	2	\$170	\$340
	Trash pump	1	\$300	\$300
	550 gallon water storage tank	2	\$500	\$1,000
	Subtotal			\$1,000
	Total			\$28,070

LONG-TERM SUSPECT STATUS (Year 1, 2 and 3)

Personnel	Description	# of Months	Cost/Month	Total Cost
	Biologist I, May 1 - November 31	7	\$4,543	\$31,801
	Technician 1, May 1- August 31	4	\$2,863	\$11,452
	Technician 2, May 1 - November 31	7	\$2,863	\$20,041
	Technician 3, June 1 - August 31	3	\$2,863	\$8,589
	Technician 4, June 1 - August 31	3	\$2,863	\$8,589
	Technician 5, June 1 - August 31	3	\$2,863	\$8,589
	Technician 6, June 1- August 31	3	\$2,863	\$8,589
	Subtotal			\$97,650
Vehicle	Description	# of Months	Cost/Month	Total Cost
	Purchase 3/4 ton ext cab ^a	1	\$33,000	\$33,000
	State Motor Pool 1/2 ton truck	7	\$960	\$6,720
	State Motor Pool Sedan 1	7	\$500	\$3,500
	State Motor Pool Sedan 2	3	\$500	\$1,500
	State Motor Pool Sedan 3	3	\$500	\$1,500
	Subtotal			\$46,220
Travel	Description	# of Days	Cost/Day	Total Cost
	Per Diem	90	\$157	\$14,130
	Subtotal			\$14,130
Supplies	Description			Total Cost
	Decontamination Units ^a	3	\$12,500	\$37,500
	Asphalt ^a	0.5 acre	\$120/ton	\$48,000
	Road base ^a	0.5 acre	\$25/ton	\$18,750
	Outhouse rental (months)	4	\$170	\$680
	16-foot utility trailer, 10,000 lb rating ^a	1	\$4,500	\$4,500
	Office Trailer ^a	1	\$20,000	\$20,000
	Generator 2 pack with parallel ^a	1	\$1,900	\$1,900
	Trash pumps ^b	1	\$300	\$300
	Water storage tanks 550 gallon ^b	2	\$500	\$1,000
	Subtotal			\$132,630
	Total			\$290,630

^a Will be purchased in Year 1 Long-term Suspect Status; not purchased in Years 2 and 3.

^b Water tanks and trash pump not necessary if acquired during Short term Suspect Status

POSITIVE STATUS

Personnel	Description	# of Months	Cost/Month	Total Cost
	Biologist I, May 1 - November 31	7	\$4,543	\$31,801
	Technician 1, May 1- August 31	4	\$2,863	\$11,452
	Technician 2, May 1 - November 31	7	\$2,863	\$20,041
	Technician 3, June 1 - August 31	3	\$2,863	\$8,589
	Technician 4, June 1 - August 31	3	\$2,863	\$8,589
	Technician 5, June 1 - August 31	3	\$2,863	\$8,589
	Technician 6, June 1- August 31	3	\$2,863	\$8,589
	Subtotal			\$97,650
Vehicle	Description	# of Months	Cost/Month	Total Cost
	Purchase 3/4 ton ext cab ^a	1	\$33,000	\$33,000
	State Motor Pool 1/2 ton truck	7	\$960	\$6,720
	State Motor Pool Sedan 1	7	\$500	\$3,500
	State Motor Pool Sedan 2	3	\$500	\$1,500
	State Motor Pool Sedan 3	3	\$500	\$1,500
	Subtotal			\$46,220
Travel	Description	# of Days	Cost/Day	Total Cost
	Per Diem	90	\$157	\$14,130
	Subtotal			\$14,130
Supplies	Description			Total Cost
	Decontamination Units ^a	3	\$12,500	\$37,500
	Asphalt ^a	0.5 acre	\$120/ton	\$48,000
	Road base ^a	0.5 acre	\$25/ton	\$18,750
	Outhouse rental (months)	7	\$170	\$1,190
	16-foot utility trailer, 10,000 lb rating ^a	1	\$4,500	\$4,500
	Office Trailer ^a	1	\$20,000	\$20,000
	Generator 2 pack with parallel ^a	1	\$1,900	\$1,900
	Trash pump ^a	1	\$300	\$300
	Water storage tanks 550 gallon ^a	2	\$500	\$1,000
	Subtotal			\$133,140
	Total			\$291,140

^a Not necessary if transitioning from Long-term Suspect Status to Positive Status.

INFESTED STATUS

Personnel	Description	# of Months	Cost/Month	Total Cost
	Biologist I, May 1 - November 31	7	\$4,543	\$31,801
	Technician 1, May 1- August 31	4	\$2,863	\$11,452
	Technician 2, May 1 - November 31	7	\$2,863	\$20,041
	Technician 3, June 1 - August 31	3	\$2,863	\$8,589
	Technician 4, June 1 - August 31	3	\$2,863	\$8,589
	Technician 5, June 1 - August 31	3	\$2,863	\$8,589
	Technician 6, June 1- August 31	3	\$2,863	\$8,589
	Technician 7, June 1- August 31	3	\$2,863	\$8,589
	Technician 8, June 1- August 31	3	\$2,863	\$8,589
	Technician 9, June 1- August 31	3	\$2,863	\$8,589
	Technician 10, June 1- August 31	3	\$2,863	\$8,589
	Subtotal			\$132,006
Vehicle	Description	# of Months	Cost/Month	Total Cost
	State Motor 1/2 ton truck	7	\$960	\$6,720
	State Motor Pool Sedan 1	7	\$500	\$3,500
	State Motor Pool Sedan 2	3	\$500	\$1,500
	State Motor Pool Sedan 3	3	\$500	\$1,500
	Subtotal			\$13,220
Travel	Description	# of Days	Cost/Day	Total Cost
	Per Diem	90	\$157	\$14,130
	Subtotal			\$14,130
Supplies	Description			Total Cost
	Decontamination Units ^a	5	\$12,500	\$62,500
	Asphalt ^b	0.5 acre	\$120/ton	\$48,000
	Road base ^b	0.5 acre	\$25/ton	\$18,750
	Outhouse rental (months)	7	\$170	\$1,190
	Office Trailer ^b	1	\$20,000	\$20,000
	Electrical service to check station	1	\$25,000	\$25,000
	Well	1	\$10,000	\$10,000
	Dynamic Messaging Signs	2	\$17,000	\$34,000
	Subtotal			\$219,440
	Total			\$378,796

^a Only purchase 2 units if transitioning from Long-term Suspect or Positive status.

^b Not necessary if transitioning from Long-term Suspect Status or Positive status.