

Rapid Response Plan Following Detection of Dreissenid Mussels in Wheatland Reservoir #3, Wyoming

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SUMMARY

Aquatic invasive species are introduced, non-native organisms that cause significant harm to ecosystems, which can impact municipal water supplies, recreation, agriculture, aquaculture, and other commercial activities. While there are multiple aquatic invasive species that could be introduced into Wyoming, the most significant threat is from zebra and quagga mussels, based on their proximity and demonstrated impacts in neighboring states. This Rapid Response Plan provides a guide for how to minimize and contain a potential dreissenid mussel infestation at Wheatland Reservoir #3.

Wheatland Reservoir #3 is located 17 miles northeast of Rock River and is a popular destination for anglers targeting trout and walleye. This off-channel impoundment of the Laramie River has a water capacity of 71,319 acre-feet. The Wheatland Irrigation District (WID) is the primary landowner and a Cooperative Agreement between the Wyoming Game and Fish Commission and the WID provides public recreational opportunities and wildlife habitat as a Public Access Area. Based on 2018 and 2019 AIS inspections, non-resident boaters were primarily from Colorado (96%), and Wyoming boaters likely make up 50% of boat use. The boating season is from April through October while boat use is highest from June through August, and there is little recreational boat use. There is one permanent public concrete boat ramp and no private boat ramps, but shore launching from private and public land is possible. There were 369 inspections (eight high risk) on boats destined for Wheatland Reservoir #3 in 2018 and 2019, and five of those boats came from an infested water or state.

If a sample from Wheatland Reservoir #3 is confirmed as dreissenid mussels, the reservoir will be considered Short-term Suspect Status with a goal to minimize the risk of spreading mussels to other waters while awaiting follow-up sampling results, which should be available within six weeks. The reservoir will be closed to all watercraft (excluding non-motorized water sport toys and pontoon boats less than 10 feet) during this six-week period. Minimal staff will operate a check station to inform boaters and enforce the closure. Outreach and proper signage will be necessary to inform boaters of the closure. The reservoir will remain closed throughout the year of detection. A seasonal closure will be implemented from November 1 through March 31 and shore launching by motorized watercraft will be prohibited. Beginning in year one (the first full boating season after initial detection), the reservoir will be open to boating from Friday through Sunday and a permanent check station will be operated at the boat ramp. Two inspectors, based out of Laramie and housed in a camper at the reservoir, will operate the check station at the hours of 8 AM-8 PM from April 1 to May 31, 7 AM-9 PM from June 1 to August 31, 8 AM-8 PM from September 1 to September 30, and 8 AM-6 PM in October.

Depending on follow up sampling results, the reservoir could remain Suspect, or be elevated to Positive or Infested status. All three possibilities would entail a longer-term response

to minimize the risk of spreading mussels to other waters, but no additional personnel are needed to operate the check station. The implementation of a Local Boater Program at Wheatland Reservoir #3 is recommended.

Start-up costs during the Short-term Suspect Status period will be assimilated through regional personnel and equipment, but costs will increase dramatically during year one as supplies and equipment are purchased to construct a permanent check station. It will cost approximately \$250,000 to purchase supplies and construct the check station and operate it for the first year of operation. Annual operating costs after the first year are estimated at approximately \$55,000 to operate the check station through the Long-term Suspect, Positive, and Infested status periods.

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, 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.

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 Wheatland Reservoir #3 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 long-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

Wheatland Reservoir #3 is an off-channel irrigation and storage reservoir 17 miles northeast of Rock River, Wyoming. The reservoir is approximately 4 miles long by 1 mile wide and covers approximately 4,792 surface acres with a total water capacity of 71,319 acre-feet. Its inactive storage capacity is 2,150 surface acres (Figure 1). Water surface elevation at full pool is 6,953 feet, with 16.7 miles of shoreline, an average depth of 15 feet and a maximum depth of 50 feet. The topography of the Laramie River drainage near Wheatland #3 is a combination of flat grassland bottoms, rolling sagebrush hills, and timbered slopes, while the topography surrounding Wheatland Reservoir #3 is relatively flat and featureless with grass and shrub vegetation.

This reservoir receives diverted water from the Laramie River, via Wheatland Reservoir #2, and is owned and operated by the Wheatland Irrigation District (WID). It is the largest of three reservoirs operated by WID but it is seldom filled to capacity due to its junior water rights and the demand for irrigation water. Most land within Wheatland Reservoir #3 full-pool elevation mark is owned by WID, but some land parcels are owned by the Bureau of Land Management, State of Wyoming, and the Kite Ranch on the eastern side (Figure 1). Through a Cooperative Agreement between the Wyoming Game and Fish Commission and WID, WID lands, including the reservoir, are managed for public recreational opportunities and wildlife habitat as a Public Access Area (PAA). This 7,200 acre PAA is open year round and recreation opportunities include fishing, camping, boating, hunting, and wildlife viewing. Potable water and electricity are not available at the PAA. Besides WID and the Kite Ranch, key stakeholders include the Bureau of Land Management, Wyoming State Lands, Town of Laramie, Town of Rock River, Town of Wheatland, Albany County, Platte County, Basin Electric Power Cooperative, and the Nebraska Game and Parks AIS Program.



FIGURE 1. Wheatland Reservoir #3 with boat ramp highlighted with red arrow.

Access and Boating Season

There is one permanent public concrete boat ramp (Figure 1). There are no private permanent boat ramps, but shore launching from private land is possible. Shore launching within the PAA by motorized watercraft is possible, but is not common because of good access to the boat ramp and soft lake substrate with gradual slope. Shore launching by motorized watercraft can increase if the reservoir level drops dramatically. Shore launching by non-motorized watercraft is possible at many access points along the north and west shoreline. The use of water sport toys (i.e., belly, float, pontoon tubes) is popular with fly anglers launching from shore. Vehicles can only access the reservoir from two different main roads; from the west (nearest town is Rock River) on Albany County Road 61 and from the east (nearest town is Wheatland) on Albany County Road 721. Anglers from Laramie and Colorado typically access the reservoir from the west via Fetterman Road (County Road 61), whereas anglers from Wheatland and Cheyenne access the reservoir from the east via Tunnel and Palmer Canyon Roads (County Road 721 and 727).

Wheatland Reservoir #3 is primarily a destination for anglers and peak use occurs June through August. Because of the remote location of Wheatland Reservoir #3, accurate boat data is unavailable but general trends are known. Approximately 87% of the boats inspected through the WGFD AIS Program in 2018 and 2019 that were destined for Wheatland Reservoir #3 were motorized boats (outboards, inboard/outboards, jet, and personal watercraft), and of those motorized boats, 89% had outboard engines, which are simple to drain and dry. The boating season begins after ice comes off in April, is busiest in June through August, and continues at a lower rate through October (Figure 2). Based on a 2020 boating use camera study, weekdays in

June and July averaged six boats, whereas weekends averaged 11 boats. Total number of boats counted during 2020 (from April 21 to October 4) was 906, with June (n = 227), July (n = 241), and August (n = 206) having the most use. Roving AIS inspectors checked boats at Wheatland Reservoir #3 on three days in 2018 and two days in 2019 (all in July and August) and contacted 18 boaters. These boaters were either from Colorado (61%) or Wyoming (39%). It is assumed that Wheatland Reservoir #3 boaters are 50% Wyoming residents and 50% non-residents. Inspection data cannot accurately define the relative numbers of resident and non-resident bound for Wheatland Reservoir #3 because most inspections are conducted on non-resident boaters entering Wyoming through ports of entry. Based on 301 AIS inspections from January 1, 2018 through November 11, 2019, non-resident boats bound for Wheatland Reservoir #3 were typically from Colorado (291 boats; 96%), followed by Kansas (3 boats; 0.99%), and Nebraska (3 boats; 0.99%). A single boat was inspected each from Illinois, Montana, South Dakota, Texas, Utah, Virginia, and Washington. These inspections were conducted primarily at the Laramie Highway 287 POE or Cheyenne Interstate 25 check stations. There were five boats that last came from an infested water (or state) and boated at Wheatland Reservoir #3. Two watercraft had boated on Canyon Lake, Texas, and the other three watercraft came from the infested states of Kansas, Illinois, and Virginia.

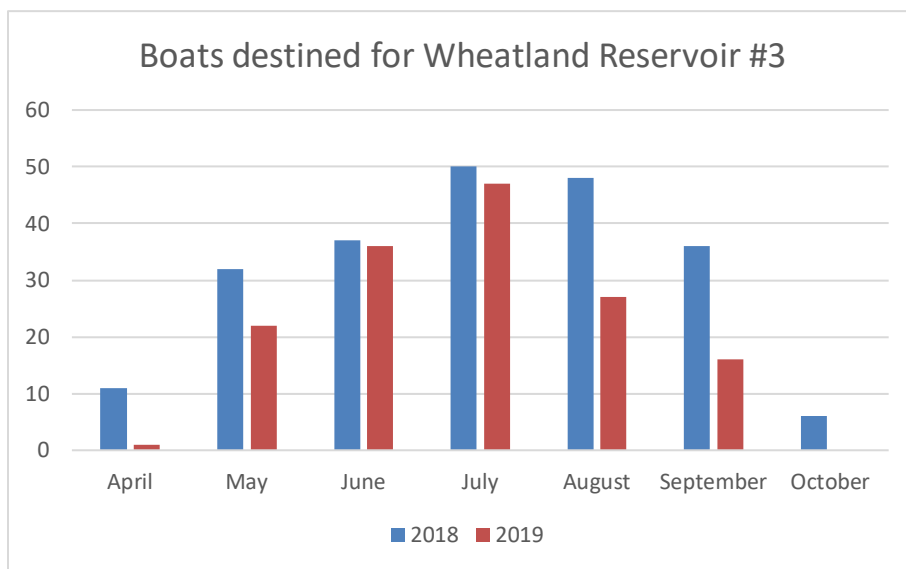


FIGURE 2. Watercraft inspected in 2018 and 2019 that planned to boat at Wheatland Reservoir #3.

RAPID RESPONSE – SHORT-TERM SUSPECT STATUS

In the event that a sample from Wheatland Reservoir #3 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. Wheatland Reservoir #3 is remote and boat use is low, compared to other medium and high AIS risk waters in Wyoming. It is estimated that during the peak boating

months of July and August, 200-250 boats launch per month (average of 6-8 boats per day), while 100-150 launch in June (average of 3-5 boats per day), 50-100 launch in September (average of 1-3 boats per day), and <50 launch in April or October. The personnel, funds, and equipment necessary to staff an inspection station at Wheatland Reservoir #3 exceeds the need for an inspection station because of the low number of boats at this water. We recommend closing Wheatland Reservoir #3 to boating during the Short-Term Suspect Status period. The PAA will remain open to shore angling and the use of water sport toys (e.g., belly boats and float tubes not propelled by oars or motors), and non-motorized inflatable pontoon boats less than 10 feet in length will also be permitted. Launching or the use of all other watercraft types will be prohibited.

Communication Plan

Immediately after Wheatland Reservoir #3 becomes a “suspect” water, the administrative communication chain will be initiated (see 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. 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 3). 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 relevant game wardens, and local Wildlife and Terrestrial Habitat biologists. The Regional Habitat and Access Supervisor will contact appropriate Habitat and Access biologists. Once the internal communication chain has been completed, the Regional Fisheries Supervisor and biologists will contact the list of key stakeholders listed in Appendix A, particularly Wheatland Irrigation District, Kite Ranch, the municipalities of Laramie, Rock River, and Wheatland, Albany and Platte counties, Basin Electric Power Cooperative, and Nebraska Game and Parks AIS Program.

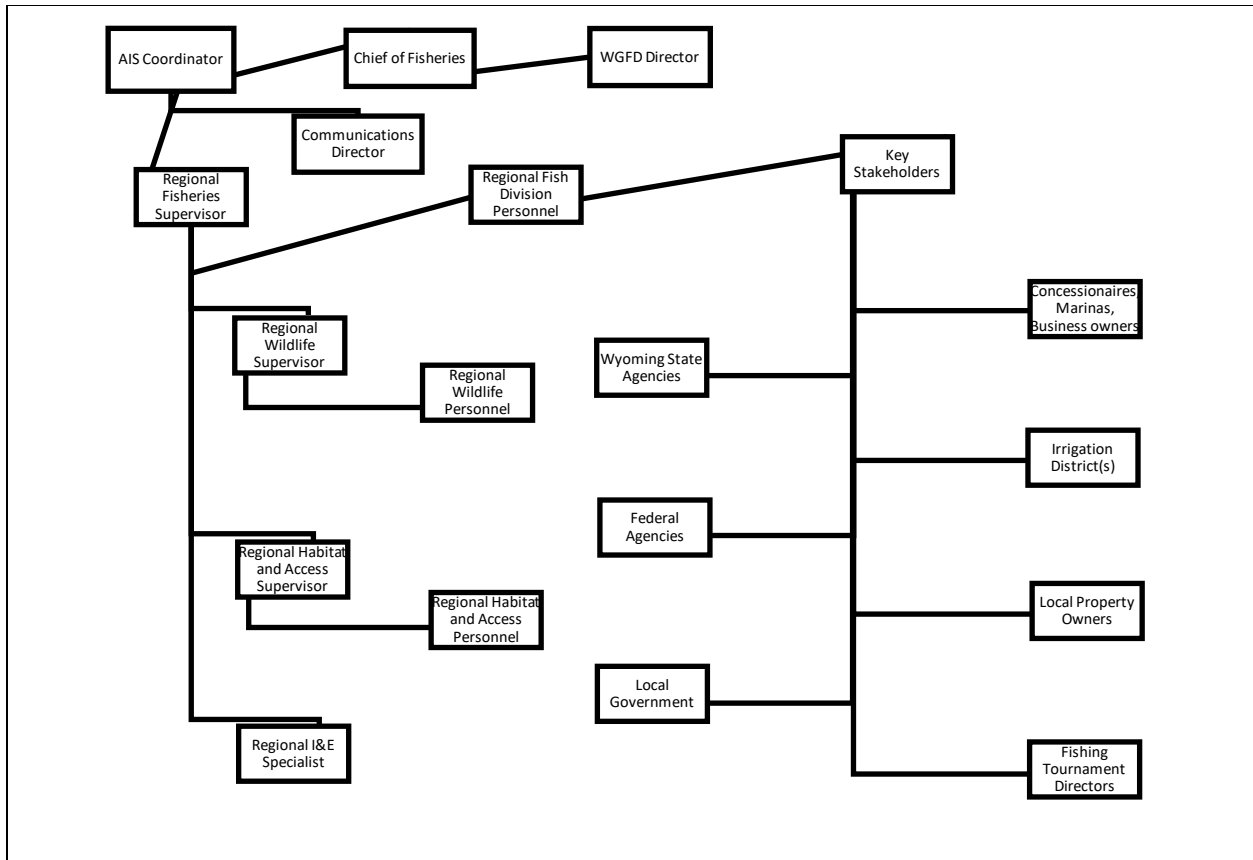


FIGURE 3. Communication chain for dissemination of information on the local and regional level following a dreissenid mussel detection in a Wyoming water.

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, 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 WGFD Laramie Regional employees, partners, and other key stakeholders can be found in Appendix A.

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 Station

Because Wheatland Reservoir #3 will be closed to watercraft use, a formal check station will not be needed but other measures will be implemented. Within the first week of Wheatland Reservoir #3 becoming a “suspect” water, the Laramie Regional Fisheries Supervisor, working with the Laramie Habitat and Access Supervisor and North Laramie Game Warden, will close the reservoir to all watercraft (except for watercraft toys and pontoon boats 10 feet or less powered by oars).

Staffing Plan

There will not be a formal check station, but there is a need for some staffing at Wheatland Reservoir #3. During the Short-term Suspect Status period, it is recommended that one WGFD employee be present at the Wheatland Reservoir #3 boat ramp to educate boaters about the closure and the immediate threat of dreissenids, and to enforce the closure.

One employee will be stationed at the boat ramp from 7 am – 5 pm seven days a week. This position would be staffed by roving AIS inspectors, Laramie Regional Fish, Wildlife and Services division personnel, and potentially personnel from the Cheyenne Headquarters Office. If it becomes apparent that boats are aware of the closure and not traveling to or attempting to launch at Wheatland Reservoir #3, this schedule could be modified.

Supplies and Equipment

The Laramie AIS Specialist and the Regional Fisheries biologists will transport the Laramie Region AIS camper and one mobile decontamination unit to the reservoir. A generator will be borrowed from Fish Division crews in the Laramie Regional Office to power the camper. If there happens to be a boat exiting the reservoir, it will be given an AIS exit inspection and decontamination, ensuring that the boat has been cleaned, drained, and is able to dry. The decontamination unit will be available to conduct a motor flush, or decontaminate all undrainable areas, such as ballast tanks. Water will be hauled to the check station using existing AIS vehicles and water tanks. The Laramie Regional Fisheries Supervisor will work with the Laramie Regional Habitat and Access Supervisor to close the boat ramp by moving boulders in front of the boat ramp.

In addition to mobilizing the temporary check station, the Laramie AIS Specialist will install the appropriate signs at the closed boat ramp and all access points within the Wheatland Reservoir #3 PAA. Signage will include information about the watercraft closure. The Laramie AIS Specialist will place dynamic signs, if available, at the eastern entrance (off State Highway 34 at the Tunnel Road turn-off) and western entrance (off State Highway 30/287 north of Rock River at the Fetterman Road turn-off). See Short-term Suspect Status budget in Appendix B for information on costs associated with this six-week period.

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 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 Laramie Regional I&E Specialist to relay information about Short-term Suspect Status at Wheatland Reservoir #3 through media outlets (newspapers, radio, etc.). Regional Information and Education personnel will coordinate all communications efforts with the Communications Director.

The AIS Coordinator, Laramie AIS Specialist, and Laramie Regional Information & Education Specialist will distribute regional information to keep the Wyoming communities of Casper, Cheyenne, Laramie, Medicine Bow, Rock River, and Wheatland informed of follow-up sampling results. The press releases will target local newspapers and radio stations to disseminate information to local citizens. In addition, this process should be extended to the Colorado communities in Fort Collins and Greeley. All stakeholders should refer interested individuals and groups to the WGFD AIS website for general information on AIS as well as updates regarding the water's status. Information regarding Wheatland Reservoir #3 will also be distributed to boaters through contact at watercraft inspection locations. Laramie Regional personnel will direct all media requests to the AIS Coordinator or Laramie AIS Specialist for information concerning the status of Wheatland Reservoir #3 and AIS impacts to boaters and anglers.

RAPID RESPONSE – LONG-TERM SUSPECT STATUS

If initial follow-up sampling does not yield a positive result, Wheatland Reservoir #3 would enter Long-term Suspect Status (defined above) and remain at this level for at least 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 year of detection (from initial detection of mussels to ice-cover) the reservoir will remain closed to boating. The PAA will remain open to shore angling and the use of non-motorized water sport toys and pontoon boats less than 10 feet in length, but launching or the use of all other watercraft will be prohibited. If there is no confirmation of dreissenid mussel presence during the year of detection, efforts will switch in year one to maintain an inspection and decontamination station and allow for boating Friday through Sunday. This will continue for two additional full boating seasons (years 2 and 3) if no additional detections are made. The personnel, funds, and equipment necessary to staff an inspection station at Wheatland Reservoir #3 more than three days a week is not warranted because of the low number of boats at this water. Inspectors will conduct mandatory clean, drain, dry exit inspections on boats leaving the water and decontaminate ballast tanks and other undrainable areas. If feasible, they will 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. All watercraft leaving Wheatland Reservoir #3 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 Laramie Region internal communication chain outlined in the Short-term Suspect Status section (above) will continue to be utilized to inform the Laramie Region and key stakeholders (Appendix A) of follow-up sampling results.

Closures

Wheatland Reservoir #3 will remain closed to boating during the year of detection, but will open to boating on a limited basis the following spring. Following the year of detection, a seasonal boating closure, from November 1 through March 31, will be implemented for the remainder of Long-term Suspect Status. All watercraft are required to be off the water by the established AIS check station closing time in order to receive a mandatory exit inspection and decontamination. Boats can remain on the water overnight (Friday and Saturday), but must be inspected and decontaminated before leaving. Shore launching by motorized watercraft will be prohibited, while shore launching by non-motorized watercraft will be permitted. Boulders that were placed in front of the boat ramp will be replaced by a permanent swinging gate.

Check Station

Inspections will be based on current WGFD AIS inspection protocols. During the year of detection, Laramie Regional personnel will construct one permanent check station to be used during the following full boating seasons (years 1 through 3) of Long-term Suspect Status, and potentially other higher level AIS statuses (i.e., Positive, and Infested). The check station will include designated traffic lanes, two concrete decontamination pads, fresh water, and a mobile office powered by generators. The permanent check station will be located at the boat ramp (Figure 6). During years two and three of Long-term Suspect Status, hours of operation for the AIS check station will be 8 AM-8 PM from April 1 to May 31, 7 AM-9 PM from June 1 to August 31, 8 AM-8 PM from September 1 to September 30, and 8 AM-6 PM in October. Boater data will be collected during this time. Check station hours could be reduced or adjusted as boater use is better understood. If data indicates high use by local boaters, a local boater program could be implemented during the Long-term Suspect or Positive status periods. See the administrative rapid response plan for more information on local boater programs (WGFD 2020).

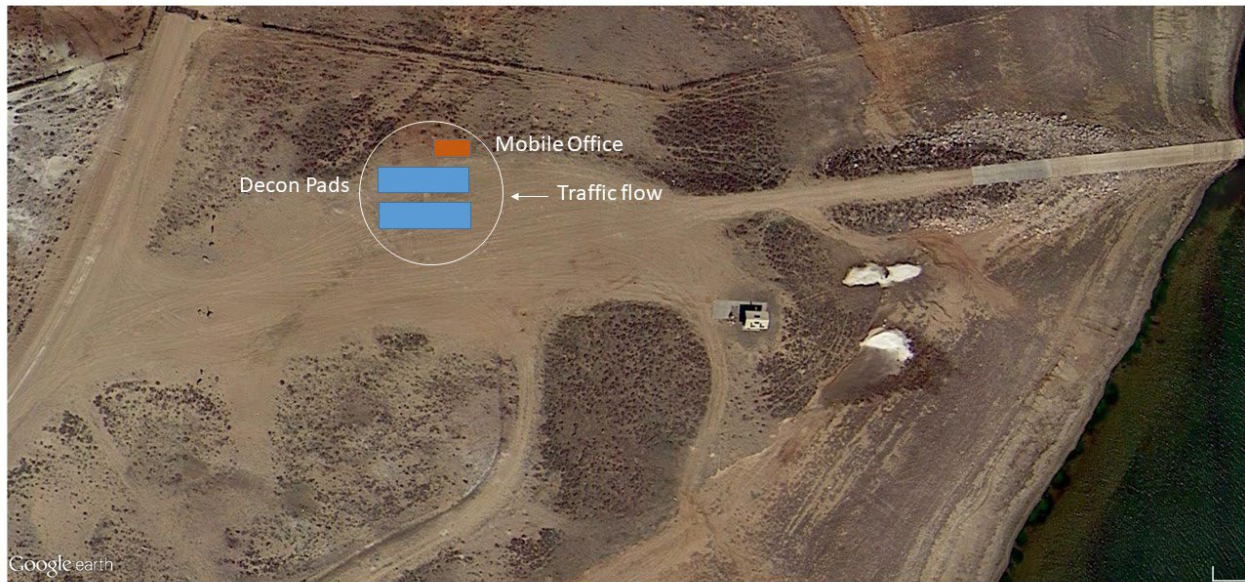


FIGURE 6. Overview map of Wheatland Reservoir #3 parking lot and boat ramp. AIS check station location shown within the white circle, traffic flow with white arrow, decon pads with blue boxes, and mobile office in orange.

Staffing Plan

During the year of detection, staffing needs and check station hours will remain the same as the Short-term Suspect Status staffing plan. There will not be a formal check station, but there is a need for some staffing at Wheatland Reservoir #3. It is recommended that one WGFD employee be present at the Wheatland Reservoir #3 boat ramp to educate boaters about the closure and the immediate threat of dreissenids, and to enforce the closure. One employee will be stationed at the boat ramp from 7 AM – 5 PM, seven days a week. This position would be staffed by roving AIS inspectors, Laramie Regional Fish, Wildlife and Services division personnel, and potentially personnel from the Cheyenne Headquarters Office. If it becomes apparent that boats are aware of the closure and not traveling to or attempting to launch at Wheatland Reservoir #3, this schedule could be modified.

During the next three Long-term Suspect Status full boating seasons (years 1-3), staffing needs and check station hours will remain the same between years. Two 7-month term technicians will be hired to perform inspections and decontaminations. Laramie Fish Management personnel and the Laramie AIS Specialist will share responsibilities in overseeing rapid response and containment at the Wheatland Reservoir #3 AIS check station.

The AIS check station will be staffed with two inspectors Friday-Sunday, and both inspectors will work 12-hour shifts. Their schedules will be arranged to overlap during the day, but during the period from June 1 through August 31, one inspector will open the station at 7 AM and work through 7 PM, whereas the other technician will begin work at 9 AM and close the station at 9 PM. Based on a 40-hour work week, both inspectors will have time (approximately four hours) to purchase groceries and travel from Laramie. When multiple inspectors are present

and the check station is not busy, one inspector will rove Wheatland Reservoir #3 to inform boaters about exit inspection requirements, or fill up water tanks. The roving inspector will target non-motorized boaters. The AIS check station will be open from April 1 through October 31, unless the reservoir is ice covered.

The two technicians hired for the Wheatland Reservoir #3 check station will use a Department vehicle to commute to the check station from Laramie. They will stay in a Department camper and be provided camp groceries during their work shift. Costs associated with staffing the check station during Long-term Suspect Status can be found in Appendix B.

Supplies and Equipment

During the year of detection, the Laramie Regional Fisheries Supervisor and Laramie AIS Specialist will work with the Laramie Habitat and Access Supervisor and Laramie Habitat and Access Biologist to improve the lands encompassing the AIS check station for future inspections and decontaminations (Figure 6). Gravel will be used to level and cover the area surrounding the AIS check station and decontamination areas, and two concrete pads (25 x 25 feet) will be poured where watercraft decontamination will be conducted (Figure 6). Some drainage modifications to the decontamination area will be needed so waste water does not drain back into Wheatland Reservoir #3. A mobile office will be installed to house Department personnel conducting inspections and decontaminations. The nearest electrical service is 2.4 miles away and connecting to it may be cost prohibitive. Therefore, either solar panels or generators will provide power. A permanent swinging gate will be installed at the boat ramp. Two decontamination units will be purchased. One ½ ton pickup truck will be leased from State Motor Pool and one ¾ ton pickup truck will be purchased. These trucks will be used for commuting from Laramie, hauling water, and performing other AIS check station functions. Treated water, purchased from a coin-operated filling station (open 24 hours; \$0.50/100 gallons) will be hauled from Rock River to supply decontamination units. A 16-foot utility trailer with two 550-gallon water tanks will be purchased to haul and store water and a 2 inch pump will be purchased to transfer water from the tanks to decontamination units.

Dynamic messaging signs (DMS) will be purchased and installed at the two main turn-offs to Wheatland Reservoir #3 and will include information about closures or exit inspection requirements. They will be placed at the eastern entrance (off State Highway 34 at the Tunnel Road turn-off) and western entrance (off State Highway 30/287 north of Rock River at the Fetterman Road turn-off). The Laramie AIS Specialist will replace any temporary signs placed within the Wheatland Reservoir #3 PAA with newly purchased permanent signs (e.g., Exit Inspection Required, Motorized Shore Launching Prohibited, non-motorized Watercraft Need Exit Inspection). Supply and equipment costs associated with the Long-term Suspect Status response can be found in Appendix B.

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 Laramie Regional I&E Specialist to keep the local boating public aware of the threats and responsibilities associated with a Long-term Suspect Status on Wheatland Reservoir #3.

RAPID RESPONSE – POSITIVE STATUS

Wheatland Reservoir #3 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). Wheatland Reservoir #3 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 Wheatland Reservoir #3 to Infested Status. All watercraft leaving Wheatland Reservoir #3 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 Laramie Region internal communication chain outlined in the Short-term Suspect Status section (above) will be used to inform the Laramie Region and key stakeholders of changes in status level.

Closures

All closures and public launching restrictions during Positive Status will remain the same as years 1-3 of Long-term Suspect Status. Additional closures and restrictions could be considered after discussions among Wheatland Irrigation District and the Laramie Regional Wildlife, Fisheries, and Habitat and Access supervisors.

Check Stations

Inspections will be based on current WGFD AIS inspection protocols. At the Positive Status level, all watercraft exiting Wheatland Reservoir #3 must receive an exit inspection and decontamination at the check station before leaving. Hours of operation for the AIS check station will remain the same as years two and three of the Long-term Suspect Status period. Refer to the “Check Station” section in Long-term Suspect Status for more details on check station construction and location details. A local boater program will be implemented immediately to reduce the need for inspections and decontaminations for boats that only launch at Wheatland Reservoir #3. Please refer to the Administrative Rapid Response Plan (WGFD 2020) for details on the local boater program.

Staffing Plan

Staffing needs and check station hours will remain the same as the Long-term Suspect Status period. Two 7-month term technicians (April to October) will be hired to perform inspections and decontaminations. The technicians will be stationed in Laramie and travel to Wheatland Reservoir #3 check station with Department vehicles, stay in a Department camper and be provided camp groceries during their work shift.

Supplies and Equipment

The supplies and equipment needed to construct the permanent AIS check station near the Wheatland Reservoir #3 boat ramp will be the same as Long-term Suspect Status. Sign purchases, messaging, and placement at Wheatland Reservoir #3 will be the same as Long-term Suspect Status. If transitioning from Long-term Suspect Status to Positive Status, most supplies and equipment will have been procured. A water well will be drilled and outfitted to provide water to the check station. Supply and equipment costs associated with the Positive Status response under different scenarios can be found in Appendix B.

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 Laramie Regional I&E Specialist to keep the local boating public aware of the threats and responsibilities associated with a Positive Status on Wheatland Reservoir #3.

RAPID RESPONSE – INFESTED STATUS

Wheatland Reservoir #3 will be considered Infested if an established (recruiting or reproducing) population of dreissenid mussels is identified. Wheatland Reservoir #3 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 Wheatland Reservoir #3 would remain at 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 Wheatland Reservoir #3 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.

However, if boating use is low (as monitored during the previous status periods), full closure of Wheatland Reservoir #3 to boating may be warranted during Infested Status. The costs associated with operating this remote station could outweigh the benefit of boat-based angling at Wheatland Reservoir #3. This may be especially true during an extended drought period in Southeast Wyoming. During the last extended drought (2000-2009), Wheatland Reservoir #3 went nearly dry and fish stocking ceased. There would be no reason to allow boating during at such times.

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

Closures

If the status level of Wheatland Reservoir #3 is raised quickly to Infested, thereby bypassing other status levels, it is recommended that boating be prohibited until the start of the next boating season (April 1). This closure period will allow for completing purchases, hiring, and construction of decontamination stations needed for full containment operations. All closures and public launching restrictions during Infested Status will remain the same as Positive Status. Additional closures and restrictions could be considered after discussions among the Wheatland Irrigation District and the Laramie Regional Wildlife, Fisheries, and Habitat and Access supervisors.

Check Stations

Inspections will be based on current WGFD AIS inspection protocols. The response for Infested Status will be identical to the response for Positive Status. The Wheatland Reservoir #3 boat ramp AIS check station hours and days of operation will remain the same as Positive Status during the entire boating season (i.e, April 1 to October 31). Implementation of a local boater program is recommended during Long-term Suspect and Positive statuses, and will need to be implemented during Infested Status if transitioning from Short-term Suspect Status. Please refer to the Administrative Rapid Response Plan (WGFD 2020) for details on the local boater program.

Staffing Plan

Staffing needs and check station hours will remain the same as the Positive Status period. Two 7-month term technicians (April to October) will be hired to perform inspections and decontaminations. The technicians will be stationed in Laramie and travel to Wheatland Reservoir #3 check station with Department vehicles, stay in a Department camper and be provided camp groceries during their work shift.

Supplies and Equipment

The supplies and equipment needed to construct the permanent AIS check station near the Wheatland Reservoir #3 boat ramp will be the same as Long-term Suspect Status. If transitioning from Long-term Suspect Status or Positive Status, most supplies and equipment will have been procured. If transitioning from Short-term Suspect Status to Infested Status, very few supplies and equipment will have been procured. Supply and equipment costs associated with the Infested Status response can be found in Appendix B.

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 Laramie Regional I&E Specialist to keep the local boating public aware of the threats and responsibilities associated with Long-term Suspect Status on Wheatland Reservoir #3.

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> | | | |
| Bobby Compton | Laramie Region Fish Supervisor | 307-721-1377 | Bobby.Compton@wyo.gov |
| Matt Withroder | Laramie Region Wildlife Supervisor | 307-721-1384 | Matt.Withroder@wyo.gov |
| Josh Leonard | Statewide AIS Coordinator | 307-721-1674 | Joshua.leonard@wyo.gov |
| Travis Beam | Laramie Region AIS Specialist | 307-721-1374 | Travis.Beam@wyo.gov |
| Steve Gale | Laramie Region Fisheries Biologist | 307-721-1381 | Steve.Gale@wyo.gov |
| Chance Kirkeeng | Laramie Region Fisheries Biologist | 307-721-1385 | Chance.Kirkeeng@wyo.gov |
| David Ellsworth | Wheatland Game Warden Coord. | 307-322-2067 | david.ellsworth@wyo.gov |
| Robin Kepple | Laramie Region I&E Specialist | 307-777-4523 | robin.kepple@wyo.gov |
| <u>Wheatland Irrigation District</u> | | | |
| Lee Arrington | Manager | 307-322-2740 | l.arrington@wheatlandirrigation.org |
| <u>Kite Ranch</u> | | | |
| Jim Mathis | Owner | 307-760-3500 | gittaway@gmail.com |
| <u>Bureau of Land Management</u> | | | |
| Dennis Carpenter | Rawlins Field Manager | 307-328-4200 | |
| <u>Wyoming State Lands</u> | | | |
| Cole Lambert | Field Supervisor | 307-777-6525 | Cole.lambert@wyo.gov |
| <u>Basin Electric Power Cooperative</u> | | | |
| Levi Mickelson | | 307-331-8033 | |
| <u>Nebraska Game and Parks</u> | | | |
| Allison Zach | Invasive Species Program Coord. | 402-472-3133 | Invasives@unl.edu |
| <u>City of Laramie</u> | | | |
| Janine Gordon | City Manager | 307-721-5226 | |
| <u>Town of Rock River</u> | | | |
| CJ Leslie | Mayor | 307-460-8752 | |
| <u>Town of Wheatland</u> | | | |
| City Hall | | 307-322-2962 | |
| <u>Albany County</u> | | | |
| Terri Jones | Commission Chair | 307-760-7878 | tjones@co.albany.wy.us |
| <u>Platte County</u> | | | |
| Chris Kanwischer | City Clerk | 307-322-1309 | |
| <u>Fishing Guides</u> | | | |
| Ray Bredehoft | Two Dogs Guide Service | 307-761-2961 | twodogsguideservice@gmail.com |

APPENDIX B: ANNUAL BUDGETS ASSOCIATED WITH EACH STATUS LEVEL

SHORT-TERM SUSPECT STATUS

| Supplies | Description | # of units | Cost/unit | Total Cost |
|----------|--|------------|-----------|-----------------|
| | Generator (borrow WGFD) | 1 | \$0 | \$0 |
| | Generator gas (monthly cost) | 2 | \$22 | \$44 |
| | Outreach for newspaper or radio | 5 | \$1,000 | \$5,000 |
| | DMS sign shipping | 1 | \$1,200 | \$1,200 |
| | DMS sign rental (2 units for 2 months) | 4 | \$1,080 | \$4,320 |
| | Hand-held radio (borrow WGFD) | 1 | \$0 | \$0 |
| | Total | | | \$10,564 |

LONG-TERM SUSPECT STATUS YEAR OF DETECTION

| Supplies | Description | # of Units | Cost/Unit | Total Cost |
|----------|--|------------|-----------|------------------|
| | Gravel for pullout | 1 | \$15,000 | \$15,000 |
| | Swinging gate | 1 | \$3,000 | \$3,000 |
| | 16-foot utility trailer, 10,000lb rating | 1 | \$4,000 | \$4,000 |
| | 550 gal plastic ag tank | 2 | \$450 | \$900 |
| | 2-inch trash pump | 1 | \$300 | \$300 |
| | Concrete decontamination pads | 2 | \$10,000 | \$20,000 |
| | Drainage improvements and culverts | 1 | \$5,000 | \$5,000 |
| | Office trailer | 1 | \$20,000 | \$20,000 |
| | Generator 2-pack with parallel | 4 | \$1,900 | \$7,600 |
| | Decon unit with attachments | 2 | \$12,500 | \$25,000 |
| | Camp Trailer | 1 | \$20,000 | \$20,000 |
| | Misc supplies 231 - 239 series | 1 | \$5,000 | \$5,000 |
| | DMS signs | 2 | \$17,000 | \$34,000 |
| | Check station signs | 6 | \$650 | \$3,900 |
| | Subtotal | | | \$163,700 |
| | | | | |
| | Total | | | \$163,700 |

LONG TERM SUSPECT STATUS YEARS 1-3

| Personnel | Description | # of Months | Cost/Month | Total Cost |
|------------------|-------------------------------------|--------------------|-------------------|-------------------|
| | Technician 1, April-October | 7 | \$2,863 | \$20,041 |
| | Technician 2, April-October | 7 | \$2,863 | \$20,041 |
| | Subtotal | | | \$40,082 |
| Vehicle | Description | # of Months | Cost/Month | Total Cost |
| | State Motor Pool 1/2 Ton Truck | 7 | \$960 | \$6,720 |
| | Purchase 3/4 ton truck ^a | 1 | \$33,000 | \$33,000 |
| | Subtotal | | | \$39,720 |
| Travel | Description | # of Days | Cost/Day | Total Cost |
| | Camp Groceries | 186 | \$24 | \$4,464 |
| | Subtotal | | | \$4,464 |
| Supplies | Description | # of units | Cost/unit | Total Cost |
| | Water (550 gallons) | 100 | \$3 | \$300 |
| | Misc supplies 231-239 | | | \$2,500 |
| | Subtotal | | | \$2,800 |
| | TOTAL | | | \$87,066 |

^a Does not need to be purchased in years 2 or 3.

POSITIVE STATUS

| Personnel | Description | # of Months | Cost/Month | Total Cost |
|-----------|---|-------------|------------|------------------|
| | Technician 1, April-October | 7 | \$2,863 | \$20,041 |
| | Technician 2, April-October | 7 | \$2,863 | \$20,041 |
| | Subtotal | | | \$40,082 |
| Vehicle | Description | # of Months | Cost/Month | Total Cost |
| | State Motor Pool 1/2 Ton Truck | 7 | \$960 | \$6,720 |
| | 3/4 Ton Truck ^a | 1 | \$33,000 | \$33,000 |
| | Subtotal | | | \$39,720 |
| Travel | Description | # of Days | Cost/Unit | Total Cost |
| | Camp Groceries | 186 | \$24 | \$4,464 |
| | Subtotal | | | \$4,464 |
| Supplies | Description | # of Units | Cost/Unit | Total Cost |
| | Gravel for pullout ^a | 1 | \$15,000 | \$15,000 |
| | Swinging gate ^a | 1 | \$3,000 | \$3,000 |
| | 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 |
| | Concrete decontamination pads ^a | 2 | \$10,000 | \$20,000 |
| | Drainage improvements and culverts ^a | 1 | \$5,000 | \$5,000 |
| | Water well | 1 | \$30,000 | \$30,000 |
| | Office trailer ^a | 1 | \$20,000 | \$20,000 |
| | Generator 2-pack with parallel ^a | 4 | \$1,900 | \$7,600 |
| | Decon unit with attachments ^a | 2 | \$12,500 | \$25,000 |
| | Camp Trailer ^a | 1 | \$20,000 | \$20,000 |
| | Misc supplies 231 - 239 series | | | \$5,000 |
| | DMS signs ^a | 2 | \$17,000 | \$34,000 |
| | Check station signs ^a | 6 | \$650 | \$3,900 |
| | Subtotal | | | \$193,700 |
| | Total | | | \$277,966 |

^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 |
|-----------|---|-------------|------------|------------------|
| | Technician 1, April-October | 7 | \$2,863 | \$20,041 |
| | Technician 2, April-October | 7 | \$2,863 | \$20,041 |
| | Subtotal | | | \$40,082 |
| Vehicle | Description | # of Months | Cost/Month | Total Cost |
| | State Motor Pool 1/2 Ton Truck | 7 | \$960 | \$6,720 |
| | 3/4 Ton Truck ^a | 1 | \$33,000 | \$33,000 |
| | Subtotal | | | \$39,720 |
| Travel | Description | # of Days | Cost/Unit | Total Cost |
| | Camp Groceries | 186 | \$24 | \$4,464 |
| | Subtotal | | | \$4,464 |
| Supplies | Description | # of Units | Cost/Unit | Total Cost |
| | Gravel for pullout ^a | 1 | \$15,000 | \$15,000 |
| | Swinging gate ^a | 1 | \$3,000 | \$3,000 |
| | 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 |
| | Concrete decontamination pads ^a | 2 | \$10,000 | \$20,000 |
| | Drainage improvements and culverts ^a | 1 | \$5,000 | \$5,000 |
| | Water well | 1 | \$30,000 | \$30,000 |
| | Office trailer ^a | 1 | \$20,000 | \$20,000 |
| | Generator 2-pack with parallel ^a | 4 | \$1,900 | \$7,600 |
| | Decon unit with attachments ^a | 2 | \$12,500 | \$25,000 |
| | Camp Trailer ^a | 1 | \$20,000 | \$20,000 |
| | Misc supplies 231 - 239 series | | | \$5,000 |
| | DMS signs ^a | 2 | \$17,000 | \$34,000 |
| | Check station signs ^a | 6 | \$650 | \$3,900 |
| | Subtotal | | | \$193,700 |
| | | | | |
| | Total | | | \$277,966 |

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