

Wyoming
Aquatic Invasive Species (AIS)
Program Review
and
Budget

Report to the Joint Appropriations Committee

and

Joint Travel, Recreation, Wildlife and Cultural Resources Committee

Submitted by: The Wyoming Game and Fish Department



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EXECUTIVE SUMMARY

The 2010 Wyoming Aquatic Invasive Species Act and subsequent Wyoming Game and Fish Commission regulation established the Wyoming AIS program. Two agencies, State Parks and the Wyoming Game and Fish Department were recognized as having authority for leading the AIS program. Because legislation only provided an appropriation of \$1.5 million to the Wyoming Game and Fish Department and not State Parks, the department has led the implementation of the program, while State Parks has provided logistical, facility and enforcement support. The statute also established a user-pay fee (decal) to partially fund the program.

The mission of the program is to prevent the spread of AIS to Wyoming waters through public outreach, watercraft inspections, and monitoring.

During 2010, one permanent coordinator along with one 12-month AWEC and 29 seasonal AWECs were hired to implement the program. For the program to be successful, substantial WGFD personnel time (over 18,000 hours) was dedicated to AIS activities in 2010. Program implementation also included purchase of significant equipment and supplies including vehicles, trailer, decontamination units, signage, outreach materials, etc.

A large portion of outreach activities in 2010 consisted of increasing public awareness of the program through a multi-faceted approach including a comprehensive web site, brochures, self-check forms, boat ramp signs, newspaper and electronic advertising, and public presentations.

In May 2010, a watercraft inspection program was implemented to intercept high risk watercraft that may be transporting AIS into Wyoming, educate boaters on ways to self inspect their watercraft prior to launch, and increase boater and public awareness of AIS threats and prevention. From May 22 through September 26, 2010 over 42,000 watercraft inspections were conducted at 36 different waters throughout Wyoming.

The monitoring portion of the program consisted of sampling 52 waters for all life stages of invasive mussels. To date, all results for mussels in Wyoming waters are negative with additional results expected later this fall.

The decal fee for 2010 was \$5 for resident non-motorized, \$10 for resident motorized, \$15 for nonresident non-motorized, and \$30 for nonresident motorized watercraft. As of October 20, 2010 a total of 35,242 decals have been sold, resulting in receipts of \$446,385.

Over \$2 million has been expended on the AIS program during 2010. Of that, \$1.1 million was expended from the general fund appropriation and close to \$1 million from the department's commission budget.

Four budget options were prepared for the legislature's consideration, equating to different program levels for 2011. These range from a decrease in program at \$1.06 million to 100% coverage on all 102 of Wyoming's boatable waters at \$7.81 million

If monitoring indicated a water in the state was positive for invasive mussels, containment would be necessary. Costs for containment range from \$430,000 to \$617,000 for waters projected to have from one to three ramps open.

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INTRODUCTION

In March 2010, the Wyoming Aquatic Invasive Species Act (enrolled act 62) was passed by the state legislature and signed into law by the Governor. Subsequent to this Act, the Wyoming Game and Fish Commission (WGFC) passed both an emergency and final regulation relating to AIS. The WGFC held public meetings at 8 venues from April 19 – April 27 to gather public input on the regulation. The state statute and regulation established the Wyoming AIS program and gave the Wyoming Game and Fish Department (WGFD) and partner agencies, notably State Parks and Cultural Resources (SPCR), the authority needed to implement an AIS prevention program including outreach, watercraft inspections, and monitoring. The regulation also detailed the boater decal program mandated by the state statute. The statute provided a \$1.5 million appropriation to the WGFD to implement the AIS program in 2010.

During 2010, the WGFD has been the lead agency in the implementation of the Wyoming AIS Program. The mission of the program is to prevent the spread of AIS to Wyoming waters through public outreach, watercraft inspections, and monitoring.

APPROPRIATION

The act created an account within the game and fish fund to which revenues are appropriated to the WGFC for the prevention, surveillance, and containment of AIS, and operational costs associated with administering the state AIS program. A \$1.5 million appropriation was designated from the general fund for the period of time beginning with the effective date of the act through June 2012. Provisions of the appropriation included that the funds sole use was to be for the purposes of the act, and a requirement that the WGFD report to the joint appropriations committee and the joint travel, recreation, wildlife, and cultural resources interim committee by November 1, 2010 on the long-term funding needed for the program.

AIS PROGRAM

Coverage

Personnel

Details on personnel dedicated to AIS prevention activities can be found in Appendix A.

The Act authorized the WGFD to fill one permanent position to serve as the coordinator of the AIS program along with one 12-month AWEC and 29 seasonal AWECs. The AIS Coordinator was hired on April 14, 2010. The AIS Program Assistant (12-month AWEC) was hired on May 1 to assist with implementation of field operations, training, and program logistics. During early May, the 30 AIS inspectors (6-month temporary) were hired; 29 were funded through general fund appropriation and 1 through a U.S. Forest Service grant to the WGFD. Existing WGFD Regional Fisheries Supervisors supervised the 30 statewide AIS inspectors, with inspectors stationed in each of eight WGFD regional offices.

To implement a successful program, the WGFD recognized the need to increase program capacity. To accomplish this, permanent and temporary WGFD personnel spent substantial time on AIS activities. During 2010, over 40,000 hours were spent by over 270 WGFD employees; AIS funded personnel spent close to 22,000 hours and WGFD funded personnel spent over 18,000 hours.

Specifically, regional fisheries management crews devoted over 11,000 hours on AIS program activities including: direct supervision of AIS inspectors, coordination of inspector schedules, inspection site logistics, development of implementation plans, inspecting watercraft, conducting sampling, and other activities. The

resources usually committed to planned fisheries management activities during the season were diverted to AIS activities, resulting in a substantial amount of fisheries management work that was not accomplished in 2010.

Equipment and materials

To implement the AIS program in 2010, significant equipment and supplies were purchased including:

- Vehicles (9); 13 additional vehicles were leased from state motor pool
- Camper trailers (4)
- Decontamination units (19)
- Watercraft inspection station signs (50)
- Boat ramp signs and posts (200)
- Flashing lights for inspection stations (29)
- Tailgate signs for AIS outreach (90)
- Uniforms for 29 technicians
- Brochures (250,000)
- Self-check forms (140,000)
- Boat seals (50,000)
- Monitoring equipment: nets, sample bottles, water quality meters/kits, etc.
- Inspection and decontamination equipment: clipboards, magnifying glasses, bilge pumps, inspection mirrors, thermometers, safety gear, flashlights, tools, etc.

In addition, existing WGFD equipment was utilized including vehicles, campers, boats, office equipment, etc.

Outreach

Details on outreach can be found in Appendix B.

A large portion of outreach activities in 2010 consisted of notifying boaters of the new legislation, regulation, and boat decal requirement. Close to 300,000 postcards were mailed to all registered watercraft owners in Wyoming, Colorado, Idaho, Nebraska, and Utah to notify them of the decal requirement. Newspaper and electronic advertising were also utilized through the Denver Post and papers in Wyoming, Idaho, and Utah, reaching an estimated 1.2 million outdoor recreationists daily. Radio interviews were conducted on Wyoming Public Radio, and a series of interviews were conducted on K2 Radio in Casper, WY.

A comprehensive web site was launched for external and internal audiences. The 2010 AIS program and decal talking points along with frequently asked questions and other useful AIS information is available on the website.

Self-check forms and information packets were sent to all authorized fishing tournament sponsors. Scheduling AIS inspections prior to pre-fishing will be a condition of authorizing future tournaments.

Boat ramp signs were placed at all 52 major waters in Wyoming in 2010 and at an additional 61 standing and flowing waters throughout the state. These signs notify boaters of the drain, clean, dry protocol necessary to prevent the spread of AIS and of the decal requirement. The WGFD partnered with the Wyoming Department of Transportation to display watercraft inspection information on highways to alert boaters of inspection stations at nearby waters.

In 2010, presentations on the AIS program were given to over twenty groups representing state, local, private, and sportsman interests. AIS informational booths were conducted at local fairs and at the 2010 Wyoming Hunting & Fishing Heritage Expo.

Watercraft Inspections

Details on watercraft inspections can be found in Appendix C.

The Wyoming AIS Watercraft Inspection and Decontamination Manual was completed and serves as the state inspection and decontamination protocols. All necessary procedures and forms are included in this comprehensive manual. Thirty seasonal personnel were trained to conduct watercraft inspections at waters throughout the state. An additional 140 inspectors were trained and certified as authorized AIS inspectors during several 2-day training sessions. Inspectors participating in this training were from the WGF, SPCR, National Park Service, U.S. Forest Service, Wind River Reservation, local municipalities, conservation districts, and private entities.

In May 2010, a watercraft inspection program was implemented to intercept high risk watercraft that may be transporting AIS into Wyoming, educate boaters on ways to self inspect their watercraft prior to launch, and increase boater and public awareness of AIS threats and prevention.

From May 22 through September 26, 2010 over 42,000 watercraft inspections were conducted at 36 different waters throughout Wyoming. The majority of inspections were standard inspections with very few high risk inspections or decontaminations. The greatest number of inspections were conducted at Jackson Lake (7,219 inspections), followed by Flaming Gorge Reservoir (5,346), and Glendo Reservoir (4,894).

Inspections increased through mid-July then tapered off with boat numbers diminishing gradually through August and September with a smaller peak experienced in response to the Labor Day holiday. The greatest number of inspections occurred on the July 4th holiday weekend with a total of 4,495 inspections. Of the total inspections in 2010, an estimated 28% were conducted on nonresident watercraft from 46 states and Canada. The greatest numbers of nonresident watercraft were from Colorado, Utah, Montana, and Idaho, respectively.

Our watercraft inspection goal for the 2010 watercraft season was to hold inspections on 23 of the 52 waters originally identified as priorities. Watercraft inspections were conducted on 29 of the 52 waters (56%) for at least one day during the 2010 boating season, including all high and moderate priority waters. Inspections were conducted at an additional 7 lower priority waters during 2010, including four rivers, for a total of 36 waters inspected.

In order to maximize the number of watercraft inspected, check stations were placed at entrance points to waters, or at ramps with the highest use. When check stations were operational (typically Thursday through Sunday), inspectors covered an average of 77.5% (range 50.0 – 100.0%) of boat ramps at the 36 waters.

Watercraft inspections were only conducted during daylight hours, and ranged from 10-14 hours per day depending on use of the water and available personnel. To estimate the daylight coverage provided by inspections during 2010, a metric of ramp days was used. Ramp days were calculated as the number of ramps at a water multiplied by the number of days in the season (128 days from May 22 – September 26). This gave an estimate of total ramp days, or days in the season on which watercraft could launch at that water. To determine the daylight coverage provided by AIS check stations during 2010, the ramp days covered were calculated as the number of days inspections occurred at a water (minimum 10 hours/day) multiplied by the number of ramps typically covered by that check station. Daylight coverage was then calculated as the ramp days covered as a percent of the total ramp days at each water.

Daylight coverage ranged from 0.2% to 54.7%, depending on inspection hours spent at each water. Daylight coverage was relative to water priority in most cases, with averages of 29.6% at high priority waters, 21.4% at moderate, 4.7% at low, and 2.1% at additional waters inspected during 2010. For the 23 priority waters we

averaged 25.0% daylight coverage; overall, daylight coverage averaged 17.1% among all waters. When accounting for all daily hours (24-hour day, 7 days a week), total coverage on the 23 priority waters was 10.4%.

Public acceptance of the watercraft inspection program has been good with most boaters supportive of the program and AIS prevention efforts. Overall, boaters were diligent about following the Drain, Clean, Dry protocol and after experiencing a watercraft inspection typically entered the check stations with bilge plugs pulled, live wells empty, and no standing water in their vessels.

Monitoring

Details on monitoring can be found in Appendix D.

The Wyoming Game and Fish Department Aquatic Invasive Species Sampling and Monitoring Manual was developed to outline protocols for sample collection and preservation. Larval sampling was completed by conducting plankton net tows at several locations at each water, where introduction of mussels would be most likely. Juvenile and adult sampling was conducted by placing artificial substrates in the water at several locations of likely introduction.

In 2010, 52 waters were sampled for all life stages of mussels. Of these, 23 high and moderate priority waters were sampled twice (summer and fall) with all other waters sampled once in the fall. To date, all results for veligers are negative; final results from all samples are expected later this fall.

Sampling and analysis of samples was possible with assistance from the Bureau of Reclamation (BOR) Denver laboratory and the Montana Fish, Wildlife, and Parks (MTFWP) laboratory. The BOR conducted the sampling for 7 waters in Wyoming and analyzed samples collected by the WGFD on another 30 waters. The MTFWP laboratory analyzed samples on 15 other waters.

Analysis of samples was completed at no cost to the state by BOR and MTFWP for 2010. Costs spent on AIS monitoring were approximately \$10,000 and included sampling gear and water quality meters. The laboratory analysis completed by the BOR was for 2010 only, and this analysis will come at a cost to the state in 2011 and future years.

Decal

Details on the AIS decal can be found in Appendix E.

The Wyoming AIS Act required all watercraft operating in Wyoming waters to purchase an AIS decal to help fund the program in the future. The subsequent WGFC regulation set the fee structure of the decal at \$5 for resident non-motorized, \$10 for resident motorized, \$15 for nonresident non-motorized, and \$30 for nonresident motorized watercraft. The decal became available for purchase on the WGFD website on April 15 and at all automated license selling agents on May 17, 2010. Decals were also sold in the field by law enforcement personnel and at WGFD regional offices.

In an effort to educate boaters on the need for the decal and enhance public acceptance of the new law, the WGFD offered boaters a one-time temporary decal in the field to allow a boater to launch if a permanent decal had not been purchased prior to arriving at the boat ramp. Recipients of a temporary decal were advised that they were required by law to purchase a permanent decal upon returning home. Public acceptance of the decal requirement was enhanced by this practice. Temporary decals issued remain less than 7 percent of the total number of permanent decals sold.

As of October 20, 2010 a total of 35,242 decals have been sold, resulting in receipt of \$446,385. Approximately 82% of all watercraft registered in Wyoming now have decals. Decal sales continued to increase through the

summer and tapered off with the end of the boating season in September. Sales of resident motorized decals were greatest in number and revenue generated with nonresident non-motorized decal sales least.

Distribution of decal numbers and revenue were as follows:

- Resident motorized: 20,614 decals sold = \$206,140
- Resident non-motorized: 6,466 decals sold = \$32,330
- Nonresident motorized: 5,699 decals sold = \$170,970
- Nonresident non-motorized: 2,463 decals sold = \$36,945

The decal has benefited the AIS program by ensuring a permanent funding source to help partially fund the program in 2011. However, the annual funds generated by decal sales are not sufficient to run the scale of program needed for AIS prevention in Wyoming. In addition, although compliance with the decal law was high, nearly all of the public criticism of the AIS program focused on this user-pay fee.

AIS PROGRAM COSTS FOR 2010

Details on 2010 program costs can be found in Appendix F.

Through September 2010, the department expended over \$2 million on the AIS program. Nearly 50 percent of expenditures came from the department’s commission budget. The majority of the costs were for over 18,000 hours expended by non-AIS funded department employees that conducted check stations, provided enforcement support, and supervised technicians. Additionally, department administrative personnel worked on public outreach, programming, and decal issuance. The commission budget also funded approximately \$200,000 in start-up public information and outreach, and travel associated with non-AIS funded personnel working inspection stations around the state.

Expenditures for equipment, supplies and services totaled over \$930,000 as of October 15. Equipment purchases, decal issuance, personnel training, outreach and other start-up costs totaled over \$790,000 of the general fund appropriation by June 2010. Major equipment purchases made prior to mid-May included 19 decontamination units, 9 trucks, and 4 camper trailers. Printing for inspection manuals, check station forms, decals, brochures, self check forms and signage were also major start up expenditures. So too, were expenses for direct mail notifications of the new AIS program and decal requirement that were sent to all registered watercraft owners in Wyoming, Colorado, Utah, Idaho and Nebraska. Other contracted media included advertising for six months on eight billboards, multiple placements in seven regional newspapers and 6 weeks of radio advertisements (82 plays on each of 4 stations).

As of October 15, over \$1.1 million of the general fund appropriation was expended (Table 1). Operating costs will continue with materials for check stations resupplied, decontamination equipment and trailers winterizing, continuing costs of personnel, decal fulfillment, and start-up costs for the 2011 boating season.

Table 1. AIS Program costs for personnel, vehicle use, equipment, supplies, and services.

	Personnel	Vehicle	Equipment, supplies, services	Total
WGFD Funded	\$735,574	\$137,363	\$126,724	\$999,661
General Funded	\$339,911	\$4,788	\$812,797	\$1,157,496
Total	\$1,075,485	\$142,151	\$939,521	\$2,157,157

AIS Program Cost Comparisons with Other States

Over the last few years, several western states have initiated AIS prevention programs. The following is information from three states neighboring Wyoming, as a comparison of costs of state prevention programs. The Colorado program is funded annually for \$4 million including nine permanent personnel. Following three years with higher start up costs, the Utah program is now funded annually for \$1.4 million, including funds for six permanent personnel (1 coordinator and 5 biologists). The Idaho program costs \$1.3 million annually and supports one permanent position. Programs across states are variable, precluding direct cost comparisons.

PROPOSED SUPPLEMENTAL BUDGET FOR THE 2011-2012 BIENNIUM

Details on the proposed 2011-12 Supplemental Budget can be found in Appendix G.

The 2011-12 supplemental budget as shown will significantly diminish the AIS program because the WGFD will not be able to continue the same level of support from existing programs as provided during the 2010 season. The requests do not contain any resources for containment or control efforts if any Wyoming water were found to be infested by quagga or zebra mussels.

The supplemental request covers funding for FY12, year two of the current biennium (Table 2). This request continues the existing program with two major exceptions: 1) a decrease in the amount required for equipment purchases as decontamination units and nine vehicles were purchased out of the previous appropriation and 2) a decrease in the watercraft inspection coverage and monitoring. Supervision and assistance by WGFD Regional Fisheries Management Crews as was done in 2010 is not a viable option for the WGFD in 2011 and future years.

The supplemental budget request totaling \$1.06 million includes funding for 1 permanent personnel (the current AIS statewide program coordinator), and 29 AWECs. The balance of the funding request (detailed in Appendix G) is for equipment and associated program operational costs to continue watercraft inspections, monitoring, public outreach, and decal issuance at a reduced level from 2010.

Table 2. Supplemental appropriation request for FY12.

Item	Cost
Balance of operational costs for FY 2011 (April-June)	\$139,014
Equipment purchases	\$24,749
1 Existing Permanent Position (salary and benefits)	\$121,509
Operational Costs for FY 2012 (includes \$379,900 in Seasonal AWEC salaries/ benefits)	\$775,704
Total request	\$1,060,976

PROGRAM OPTIONS AND BUDGET REQUIREMENTS

Levels of Check Station and Monitoring Coverage

Option 1 – Maintain 2010 Levels (25% daylight coverage of 23 waters)

This option would maintain the current 2010 program levels for outreach, watercraft inspection, and monitoring. This option consists of the FY12 proposed supplemental budget with the addition of four permanent positions and the elimination of a full-time AWEC position. AIS personnel under this option would include 5 permanent personnel: the current AIS statewide program coordinator and 4 new permanent AIS biologist positions, and 29 seasonal AWECs.

This option would increase the supplemental budget request by \$504,971 and result in a budget totaling \$1.56 million (Table 3). Costs under this option would include salaries and benefits for 4 permanent biologists (\$299,681) and equipment and gear associated with these positions (\$205,290). One time equipment items required for the 4 permanent positions include office furniture (\$4,000); vehicles (\$122,240), camper trailers with generators (\$66,750), cameras and GPS units (\$3,000) and water quality probes (\$9,300).

The four new personnel would be assigned to Green River, Cheyenne/Laramie, Sheridan/Cody, and Casper. The cost of these new positions would partially offset the personnel expense (\$406,400) of the department's Fish Management personnel leading the 2010 AIS program. Permanent personnel assigned to regional fish management alone, devoted the equivalent of 5.3 man years to the AIS program. Duties performed included training and directly supervising 30 AIS Program seasonal employees in 8 regions (36 waters), coordination with federal and state agencies, writing and implementing AIS plans for the 23 most at risk waters, working as authorized inspectors at inspection stations 3-5 days a week through mid-July, conducting public outreach efforts, conducting inspections of fishing contestants' boats, answering calls from boating public and news media, performing decontaminations upon request, and monitoring 52 lakes for invasive mussels.

Oversight and supervision of the 30 AIS check station technicians by our fisheries professionals was absolutely critical to the success the Wyoming AIS program achieved in 2010. The AIS technicians when hired had virtually no experience with check station protocols and procedures. It was the duty of fishery managers to work alongside the technicians for 7-10 weeks until each had mastered the skills needed to professionally and courteously greet the boating public, conduct standard and high risk boat inspections, decontaminate watercraft, inform boaters about AIS concerns, dispense information about the AIS program as well as provide expertise regarding local fishing and camping advice. In 2011 the four new permanent personnel would replace the fisheries managers so they can then return to their assigned fishery management duties.

The additional permanent personnel are essential to the success of the Wyoming AIS prevention program at the current level. One of the four permanent biologist positions would replace the existing 12-month contract assistant position. Duties of AIS biologists would include conducting early and late boating season check stations, inspecting and decontaminating boats from known infested waters prior to the boating season, supervision and training of 30 seasonal AIS inspectors (May-September), coordination of inspector schedules, inspection site logistics, watercraft inspections, quality control of certified inspectors, conducting sampling, and coordination with local entities. Duties during the off-season would include training and certification of authorized inspectors including seasonal technicians, boat mechanics, marina operators, private individuals, conservation and sportsman groups, water districts, irrigation districts and others. Permanent staff would also be responsible for development and implementation of best management practices to prevent AIS introduction via heavy construction equipment and water hauling conveyances through close coordination with Department of Environmental Quality and State Engineer on water hauling and pipeline testing (hydrostatic) permits. Additional duties are to develop and implement rapid response plans, track boat registrations and interview

owners of boats purchased from states with infested waters. They will also serve as primary sources for AIS education and outreach.

Hiring four permanent positions to lead future field efforts, the AIS program capacity and effectiveness established in 2010 will be maintained.

Alternative Options

In 2010, WGFD AIS and fisheries management personnel were able to attain a 25% daylight coverage level for the 23 priority waters. Daylight coverage is the number of lake access sites covered during an average day of 10 hours during the core boating months (May through September). Because the inaugural year of the AIS program was not funded to provide 24-hour coverage on all Wyoming waters, the public has often speculated on how effective the program is in preventing the introduction of aquatic invasive mussels. The concern was that some boaters may be purposefully avoiding inspections by altering how, when, and where they launched their boats.

Three additional options explore strategies and estimated costs for greater coverage. These program options were extrapolated from costs and coverage attained by the 2010 season in order to show the costs of increasing hours, number of check stations, water monitoring frequency, and public contacts.

Option 2 – 100% daylight coverage on 23 waters

Option two would increase coverage on our 23 priority waters to 100% daylight coverage (increased to 14-hours/day) and would require manning 47 inspection stations by 105 temporary technicians/inspectors (76 additional) and a permanent staff consisting of 1 coordinator and 5 biologists; each biologist would be responsible for hiring, training, and supervising 21 AIS inspectors. One additional truck, decontamination unit and trailer are needed along with 37 leased vehicles. Check stations would be open for more than 86,000 hours over the 128-day core (May-September) boating season. Permanent personnel would hire, train and directly supervise 105 technicians and also conduct check stations at high profile waters and ramps before and after the core season. Notable budget categories that would increase substantially are travel, uniform, camp groceries, and vehicle leases. Total cost of Option 2 is \$3.01 million (Table 3).

To increase coverage on the 23 priority waters to 100% 24-hour coverage would require 184 temporary inspectors (79 additional) and 8 biologists (3 additional) to supervise technicians. The estimated cost addition to Option 2 for 24-hour coverage at 23 priority waters is \$1.36 million in personnel costs alone, not including additional equipment and gear needed to support these positions.

Option 3 – 100% daylight coverage on 50 waters

Option three would provide 100% daylight coverage for 50 of the state's 102 boating waters. It would require manning 74 check stations by 164 temporary inspectors and a permanent staff consisting of 1 coordinator and 8 biologists (one per region); each biologist would be responsible for hiring, training and supervising 20 AIS inspectors. This option also requires 4 additional trucks, decontamination units and trailers. A total of 66 leased vehicles are also needed. Check stations would be open for more than 134,000 hours over the 128-day core (May-September) boating season. Permanent personnel would conduct check stations at high profile waters and ramps before and after the core season. Notable budget categories that would continue to increase substantially as personnel numbers increase are travel, uniform, camp groceries, and vehicle lease. Total cost of Option 3 is \$4.6 million (Table 3).

To increase coverage on the 50 waters to 100% 24-hour coverage would require 288 temporary inspectors (124 additional) and 12 biologists (4 additional) to supervise inspectors. The estimated cost addition to Option 3 for 24-hour coverage at 50 waters is \$2.08 million in personnel costs alone, not including additional equipment and gear needed to support these positions.

Option 4 – 100% daylight coverage on 102 waters

Option 4 would provide 100% daylight coverage for all 102 of the boating waters including 6 access points on each of seven major Wyoming rivers. This level of coverage would require manning 141 check stations by 312 temporary inspectors and 12 biologists; each biologist responsible for hiring, training and supervising 26 AIS temporary inspectors. Three additional trucks, decontamination units and trailers are needed for this option along with 90 leased vehicles. Check stations would be open for more than 254,000 hours over the 128-day core (May-September) boating season. Permanent personnel would conduct check stations at high profile waters and ramps before and after the core season. Lab services to handle water analysis and DNA work for the additional 45 waters being sampled is a notable increase in addition to increase personnel related costs for travel, uniform, camp groceries, and vehicle lease. Total cost of Option 4 is \$7.8 million (Table 3).

To increase coverage on 102 waters to 100% 24-hour coverage would require 545 temporary inspectors (233 additional) and 20 biologists (8 additional) to supervise inspectors. The estimated cost addition to Option 4 for 24-hour coverage at 102 waters is \$3.94 million in personnel costs alone, not including additional equipment and gear needed to support these positions.

Table 3. Costs of watercraft inspection coverage options one through four.

Coverage Options		Option 1 25% daylight coverage of 23 waters	Option 2 100% daylight coverage of 23 waters	Option 3 100% daylight coverage of 50 waters	Option 4 100% daylight coverage of 102 waters
Personnel: permanent + temporary		5 + 29	6 + 105	9 + 164	13 + 312
<i>Total personnel costs by option</i>		\$801,090	\$1,963,589	\$3,035,560	\$5,460,734
Supplies, equipment and services					
202	Repair	\$19,169	\$20,538	\$24,646	\$30,123
203	Utilities	\$4,000	\$14,235	\$20,414	\$38,235
204	Decal postage	\$30,000	\$30,000	\$30,000	\$30,000
207	Dues registration	\$12,000	\$44,400	\$69,200	\$124,800
208	Advertising	\$20,000	\$20,000	\$20,000	\$20,000
221	Instate travel	\$43,600	\$113,540	\$176,680	\$327,180
231	Off supply/printing	\$51,440	\$55,000	\$75,000	\$75,000
233	Motor vehicle supply	\$38,336	\$41,074	\$49,289	\$60,242
234	Camp groceries	\$24,500	\$79,985	\$124,662	\$233,280
235	Lab supplies	\$5,500	\$6,500	\$8,500	\$10,500
236	Educ. and recreation supplies	\$21,000	\$21,000	\$21,000	\$21,000
237	Soft goods and uniforms	\$33,000	\$54,200	\$84,250	\$161,850
238	Farm and livestock supply	\$13,500	\$13,500	\$29,348	\$59,870
239	Field Supplies	\$57,000	\$57,000	\$98,276	\$200,483
241	Transportation equipment	\$213,739	\$273,800	\$453,800	\$693,800
243	Office equip (\$1,000/biologist)	\$4,000	\$5,000	\$8,000	\$12,000
246	Education and recreation equip.	\$12,300	\$16,150	\$27,700	\$43,100
251	Quarantine rental	\$5,800	\$5,800	\$5,800	\$5,800
252	Equipment rental	\$98,000	\$181,300	\$323,400	\$441,000
420	Telecom	\$12,213	\$18,320	\$26,171	\$53,388
901	Lab: water analysis & DNA work	\$45,760	\$45,760	\$45,760	\$91,520
<i>Total Supplies, Equipment and Services</i>		\$ 764,857	\$1,053,023	\$1,649,964	\$2,355,703
TOTAL costs by option		\$1,565,947	\$3,016,612	\$4,685,524	\$7,816,437
Control or containment - 1 water		\$617,250	\$617,250	\$617,250	\$617,250
TOTAL per option with containment		\$2,183,197	\$ 3,633,862	\$5,302,774	\$ 8,433,687

Control or Containment Costs

If monitoring indicated a water in the state was positive for invasive mussels, containment would be necessary. Containment would likely include controlled (restricted) hours of operation for boat ramps in order to assure that all boats leaving the water are subject to a high risk inspection and/or decontamination. Actual number of ramps left open would depend on size and popularity of the water. In developing containment costs it was assumed a maximum of three ramps would be open for 15 hours a day for 17 weeks (May 15 to September 15). These costs can only be maintained if boat ramp hours are restricted so that ramps are open for 15 hours per day and closed for 9 hours per day. So, boating access to an infested lake would be controlled both daily and seasonally.

Costs for containment range from \$430,000 to \$617,000 for waters projected to have from one to three ramps open (Table 4). One large, hot water re-circulating decontamination unit would be purchased for and made operational at the primary ramp. If additional ramps were open a mobile decontamination unit would available at each of the secondary ramps. Additional costs include increased outreach and monitoring at an infested water.

Table 4. Containment budget options for 1-3 ramps open 15 hours per day for 17 weeks.

Category	1 Ramp	2 Ramps	3 Ramps
Personnel*	\$54,000	\$108,000	\$162,000
Vehicle and Trailer	\$39,500	\$39,500	\$39,500
Decontamination Equipment	\$305,000	\$325,000	\$369,000
Supplies	\$4,000	\$8,500	\$13,000
Outreach Supplies	\$9,000	\$11,000	\$11,000
Monitoring costs	\$18,750	\$22,750	\$22,750
Total	\$430,250	\$514,750	\$617,250

* Five additional temporary inspectors per week, per open ramp.

Canine Inspection Teams

Canine inspection (K-9) teams are composed of a handler and a dog, typically a Labrador or shepherd, that train together in order to detect odors and evidence such as the presence of adult mussels and other animal parts or contraband. Typically they are also trained for on line tracking (track and trail suspects) but not for physically contacting suspects. The handlers and dogs train and certify as a team and are managed as a team for the life of the dog whenever possible. These teams have shown mixed success throughout the country with several notable programs flourishing (California and Florida) and others cancelled (Washington). Those states that continue to run inspection teams remain enthusiastic about team achievements that range from positive mussel searches to very positive public outreach contacts.

Cost of the K-9 teams range in cost depending on source costs, whether training is out-sourced, the training protocols followed, number of odors a dog is trained to detect, certification costs, specialized K-9 team equipment, and routine veterinary and dog needs. Certification is an important component of a legal search, meaning it leads to probable cause for a search. This is why all K-9 teams are only handled by certified or commissioned law enforcement personnel.

In California, all dogs are trained to detect quagga mussels, firearms and associated odors. California has a goal to train and deploy 24 teams though currently they have 18 teams located statewide with individual teams

trained in detecting a variety of odors from bear gallbladders to abalone and deer. Florida's K-9 program consists of 2 certified trainers that train all of their teams. They field up to 12 K-9 teams located regionally. Their dogs have been certified on as many as 8 odors as well as tracking. Like California these are scent dogs not bite dogs.

An option for housing a K-9 program in Wyoming includes three agencies with law enforcement duties: Wyoming Highway Patrol, State Parks Rangers and Game and Fish Game Wardens. Each entity would have unique odor detection needs beyond quagga and zebra mussels (and other aquatic invasive species) and would locate or deploy the K-9 teams in a variety of ways. For instance, Highway Patrol may wish to deploy K-9 team at ports-of-entry to detect mussels (and other contraband) affixed to construction, water hauling equipment and commercially hauled boats and also in patrol vehicles for traffic stops. Patrol Officers could also be called by AIS inspectors during high risk watercraft inspections when adult mussels are suspected. State Parks could deploy K-9 teams at parks entry kiosks as part of routine and high risk watercraft inspections and also then use K-9 teams certified for detecting other odors such as illegal drugs. If Game Wardens were deployed in K-9 teams they would answer high risk inspections, be on call for tournament fishing boat inspections and would require additional certification and training for detecting big game, trophy game, fish and/or waterfowl.

Costs of purchasing, training and certifying and maintaining K-9 teams will depend on agency specific mission in addition to the mussel detection duties. K-9 team costs for California, Florida and Wyoming Highway Patrol range from \$5,000 to \$15,000 K-9 per team. For invasive species detection, the U.S. Customs and Border Control training protocols are recommended but are more expensive than those designed for Homeland Securities purposes.

Appendix A: Summary of personnel time spent on AIS activities in 2010.

To run a successful AIS program in 2010 and increase the capacity of watercraft inspections to a level necessary to initiate the program, permanent WGFD personnel, specifically regional fisheries management crews, spent considerable time on AIS program activities. Activities included supervision of AIS inspectors, coordination of inspector schedules, inspection site logistics, development of implementation plans, inspecting watercraft, conducting sampling, and other various activities. Two hundred thirty-nine (239) WGFD personnel not funded through the AIS program spent an estimated total of 18,735 hours on AIS activities in 2010 (Table 5). In addition, personnel funded through the AIS legislative appropriation (1 coordinator, 1 12-month AWEC, 29 seasonal technicians) spent 21,816 hours on AIS activities, for a total estimated hours by the entire WGFD of 40,551 hours.

The largest percentage of hours spent on AIS was from personnel in the Fish Division, with the Fisheries Management section spending the largest portion of time, aside from AIS funded personnel (Table 5; Figure 1). The resources usually committed to fisheries management activities during the season were diverted to AIS activities, resulting in a substantial loss of fisheries management work in 2010. Eleven different categories of activities were not completed totaling 4,462 hours of lost management work (Table 6). Aside from eliminating work, fisheries supervisors and biologists greatly increased normal working hours by up to 80 hours per month in order to try and meet the needs of both their fisheries responsibilities and AIS program duties.

Table 5. Estimated hours WGFD personnel spent on AIS activities in 2010.

Division	Hours	Percent hours
Director's	47	0.1
Fiscal	949	2.3
Fish		
<i>Administration</i>	1,328	3.3
<i>AIS</i>	21,816	53.8
<i>Culture section</i>	161	0.4
<i>Habitat section</i>	293	0.7
<i>Management section</i>	11,019	27.2
Fish Division Total	34,617	85.4
Services	1,867	4.6
Wildlife	3,071	7.6
Total	40,551	100.0

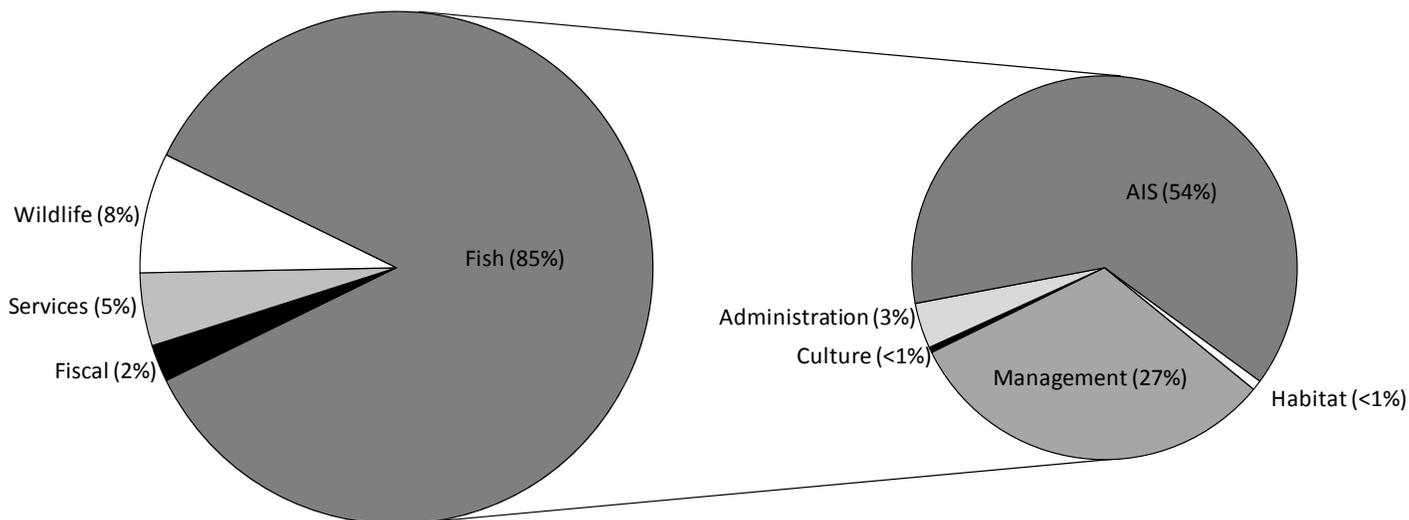


Figure 1. Hours (%) spent on AIS activities by all WGFD personnel (left) and by the Fish Division (right).

Table 6. Summary of fisheries management work not completed in 2010 and hours lost to management work because of AIS program duties.

Month	Management activity	Activity description	Hours
April	Administration	Supervision, purchasing, coordination, regulation and report review.	290
	Education	Development of regional angler newsletter.	40
	Interagency coordination	Attendance at coordination and professional meetings.	42
	Lake surveys	Transport of fish to lake.	60
	Native fish restoration	Installation of equipment and site reconnaissance.	20
	Stream surveys	Population estimates, spawning surveys, gear effectiveness study.	168
	<i>Monthly total</i>		<i>620</i>
May	Administration	Basin management plans, fishing access, coordination, supervision.	153
	Education	Development of regional angler newsletter, kid's fishing day.	40
	Habitat protection	Wildlife environmental reviews, restoration project assistance.	47
	Habitat surveys	Stream temperature monitoring.	8
	Interagency coordination	Federal agencies and conservation group coordination.	8
	Intra-agency coordination	Communication between Division personnel.	48
	Lake surveys	Population estimates, nonnative fish removal.	671
	Native fish restoration	Native fish surveys.	48
	Public contacts	Creel surveys.	240
	Stream surveys	Population estimates, gear effectiveness study, native fish projects.	266
<i>Monthly total</i>		<i>1,529</i>	
June	Administration	Report and proposal development, coordination, supervision.	108
	Education	Kids fishing days.	44
	Habitat protection	Wildlife environmental reviews, federal agency coordination.	22
	Habitat restoration	Habitat restoration project.	16
	Habitat surveys	Site reconnaissance.	16
	Interagency coordination	Conservation group coordination.	20
	Lake surveys	Population estimates.	327
	Public contacts	Creel surveys, meetings, kid fishing program, public information.	354
	Stream surveys	Population estimates, native fish surveys, amphibian/reptile surveys.	279
	<i>Monthly total</i>		<i>1,186</i>
July	Administration	Coordination and communication, fishing guidelines review.	84
	Habitat protection	Wildlife environmental reviews, oil and gas lease commenting.	20
	Interagency coordination	Meetings, federal agency and conservation group coordination.	47
	Lake surveys	Population estimates.	64
	Public contacts	Creel surveys.	220
	Stream surveys	Population estimates, native species surveys, restoration surveys.	242
	<i>Monthly total</i>		<i>677</i>
August	Administration	Report and regulation review, project planning.	32
	Habitat protection	Wildlife environmental reviews, oil and gas lease commenting.	18
	Habitat surveys	Stream habitat surveys.	16
	Interagency coordination	Meetings, project coordination, irrigation district coordination.	20
	Lake surveys	Population estimates.	70
	Stream surveys	Population estimates, distribution surveys, native fish surveys.	280
	<i>Monthly total</i>		<i>436</i>
September	Habitat protection	Wildlife environmental reviews.	4
	Interagency coordination	Federal agency project coordination.	10
	<i>Monthly total</i>		<i>14</i>
Total			4,462

Appendix B: Outreach and Education summary

A large portion of outreach activities in 2010 consisted of notifying boaters of the new legislation, regulation, and boat decal requirement. Almost 300,000 postcards were mailed to registered watercraft owners in Wyoming, Colorado, Idaho, Nebraska, and Utah to notify them of the decal requirement and availability for purchase.

A sliding billboard ad on the Denver Post online newspaper was used to reach almost 600,000 readers with the AIS message. Online advertising with the Yahoo Network through the Denver Post provided AIS information to 2.3 million viewers in the Denver, CO, Idaho Falls, ID, and Salt Lake City, UT markets.

The WGFD developed a new AIS brochure (Figure 2), self-check form (Figure 3), billboards, bumper stickers, key chains, and other outreach materials. These materials were distributed through mailings with postcards, and also during watercraft inspections. A webpage (<http://gf.state.wy.us/fish/AIS/index.asp>) was created on the WGFD website with information pertaining to AIS and the program.

Boat ramp signs (Figure 4) were placed at all 52 major waters in Wyoming in 2010, and at an additional 61 standing and flowing waters throughout the state. These signs notify boaters of the drain, clean, dry protocol necessary to prevent the spread of AIS, and also of the decal requirement. Self-check forms were also available at these boat ramp signs throughout the state. The WGFD partnered with the Wyoming Department of Transportation to display watercraft inspection information on highways to alert boaters of inspection stations at nearby waters.

In March 2010, an AIS Summit was held in Casper to discuss the AIS program with interested parties including state and federal agencies, sportsman groups, irrigation districts, and the public.

AIS videos were produced and distributed by the WGFD and Wyoming State Parks and Cultural Resources. Radio interviews were conducted on Wyoming Public Radio, and a series of interviews were conducted on K2 Radio in Casper, WY.

In 2010, presentations on the AIS program were given to the University of Wyoming, Wyoming Weed Management Association, Shoshone Irrigation District, Trout Unlimited, Wyoming Rural Water Association, Wyoming Game Warden's Association, Wyoming Conservation Districts, North Platte Walleyes Unlimited, Wyoming Fly Casters, Torrington Rotary Club, Cheyenne Board of Public Utilities, Snake/Salt Rivers Basin Advisory Group, North Platte River Basin Advisory Group, Wyoming Walleye Circuit, Jackson Hole Weed Management Group, City of Green River, Bitter Creek Whitewater Association, and various public and school groups. AIS informational booths were conducted at local fairs and at the 2010 Wyoming Hunting & Fishing Heritage Expo.

Increasing public awareness through outreach is the best proven method for successful AIS prevention. Outreach activities in 2010 resulted in an increased awareness by the boating community and the general public on the issues. This awareness resulted in boaters entering inspection stations with the required decal purchased, drain, clean, and dry watercraft, knowledge of the issue, and overall support for the program. However, this increased awareness came at a significant cost. A large portion of the legislative appropriation was used to increase boater awareness of the decal requirement to increase compliance. Outreach in future years will focus more on increasing boater awareness of AIS threats and prevention, including species other than invasive mussels.

Impacts to You



If you use water or electricity, you do not want exotic mussels introduced into Wyoming. These species can have widespread impacts on powerplants, municipalities, irrigation systems and other water users. They impede water delivery and increase maintenance costs by clogging pipes, pumps, turbines and filtration systems. Costs that are all passed on to the user.

Fisheries are destroyed by the presence of these exotic filter-feeding mussels. They remove plankton from the water. Plankton are the primary food source for forage fish, and forage fish are the food of sport fishes. For example, the lake trout population in Lake Ontario has declined by 95% in the past 10 years due to a crash in the food chain caused by exotic mussels.



STOP AQUATIC HITCHHIKERS!
www.ProtectYourWaters.net

**✓ DRAIN
✓ CLEAN
✓ DRY**

Contact the WGFD if you see attached mussels on your equipment or in Wyoming waters. We can provide more information and assistance in removal.
1-877-WGFD-AIS (877-943-3247)
<http://gf.state.wy.us/fish/AIS>



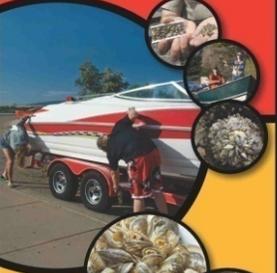
WYOMING GAME & FISH DEPARTMENT
Conserving Wildlife - Serving People

ARTS, PARKS, HISTORY.
Wyoming State Parks & Cultural Resources

Credit: Photos and Graphics courtesy of 100th Meridian Initiative, USFWS, Protect Your Waters, CDOW, Utah Division of Wildlife Resources, WGFD

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Help Protect Wyoming Waters



**✓ DRAIN
✓ CLEAN
✓ DRY**

Figure 2. Aquatic invasive species brochure developed and distributed in 2010.

Don't Move a Mussel

SELF-CHECK BEFORE YOU LAUNCH IN ANY WATER
protect your water resource and boat motor from invasive zebra and quagga mussels



Follow these simple steps to protect your waters:

- ✓ DRAIN** All water must be drained from your boat. This includes the ballast, bilge, livewell and motor. Leave wet compartments open.
- ✓ CLEAN** Remove all plants, mud and debris from equipment and boat.
- ✓ DRY OR** Dry your boat or equipment 5 days in the summer, 18 days spring/fall or 3 days of freezing.
Contact the WGFD to have your boat and trailer decontaminated.

Contact the Wyoming Game and Fish Department if you see attached mussels on your equipment or in Wyoming waters. We can provide more information and assistance in removal. Call 1-877-WGFD-AIS - (877-943-3247)

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Wyoming State Parks & Cultural Resources

STOP AQUATIC HITCHHIKERS!
www.ProtectYourWaters.net

Self-Check Before Launching

Expect to be Inspected Be prepared for inspections near all Wyoming boat ramps.

If you have boated in a known infested water in the last 30 days, your boat must be inspected before launching in Wyoming.



In the last 30 days, if you have boated in an uninfested water of a state highlighted on the above map, you must **Drain, Clean, and Dry** before launching in Wyoming. Remember, invasive mussels can be transported before we even know a water is infested. Prevention is the only tool we have to fight these invasive mussels and protect Wyoming's waters.

Help Save Your Waters From Invasive Zebra and Quagga Mussels!

- I have not used my boat in any infested waters
- OR
- My boat and trailer have been decontaminated
- OR
- I have followed the Drain, Clean, Dry procedure

Sign: _____ Date: _____

Buy your Aquatic Invasive Species Decal before launching your watercraft!

ALL WATERCRAFT (INFLATABLES: 10 FEET OR LESS IN LENGTH) ARE EXEMPT) USING WYOMING WATERS ARE REQUIRED TO DISPLAY AN AQUATIC INVASIVE SPECIES DECAL. DECALS MAY BE OBTAINED FROM THE WGFD WEBSITE OR LICENSE AGENTS. (<http://gt.state.wy.us/>)

Figure 3. Self-check form developed and distributed in 2010.

Don't Move a Mussel

**BEFORE YOU LAUNCH
IN ANY WATER,**
protect your water resource and
boat motor from invasive zebra and
quagga mussels by doing a
SELF-CHECK

Follow these simple steps to protect your waters:

- ✓ **DRAIN** All water must be drained from your boat. This includes the ballast, bilge, livewell and motor. Leave wet compartments open.
- ✓ **CLEAN** Remove all plants, mud and debris from equipment and boat.
- ✓ **DRY** Dry your boat or equipment 5 days in the summer, 18 days spring/fall or 3 days of freezing.

**Help protect Wyoming's
waters by making sure you
Don't Move a Mussel!**

Please contact the Wyoming Game and Fish Department if you see attached mussels on your equipment or in Wyoming waters. We can provide more information and assistance in removal. Call 1-877-WGFD-AIS - (877-943-3247)

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STOP AQUATIC HITCHHIKERS!
 www.ProtectYourWaters.net

Watercraft *MUST* have a Wyoming Aquatic Invasive Species Decal to launch.

Don't Move a Mussel

**BEFORE YOU LAUNCH
IN ANY WATER,**
protect your water resource and boat from
invasive zebra and quagga mussels by
doing a
SELF-CHECK

Follow these simple steps to protect your waters:

- ✓ **DRAIN** All water must be drained from your boat. Leave wet compartments open.
- ✓ **CLEAN** Remove all plants, mud and debris from equipment and boat.
- ✓ **DRY** Dry your boat or equipment 5 days in the summer, 18 days spring/fall or 3 days of freezing.

**Help protect Wyoming's
waters by making sure you
Don't Move a Mussel!**

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Watercraft *MUST* have a Wyoming Aquatic Invasive Species Decal to launch.

Figure 4. Signs developed and distributed at boat ramps on standing water (left) and at access points on flowing waters (right).

Appendix C: Summary of watercraft inspections throughout Wyoming in 2010.

The “State of Wyoming Aquatic Invasive Species Watercraft Inspection and Decontamination Manual” was developed to detail procedures used by authorized inspectors when conducting watercraft inspections in Wyoming. All inspectors were trained in these procedures with 170 inspectors authorized in 2010. Thirty seasonal technicians were hired and trained to conduct watercraft inspections at waters throughout the state.

A watercraft inspection program was initiated in May 2010 to intercept high risk watercraft that may be transporting AIS into Wyoming, educate boaters on ways to self inspect their watercraft prior to launch in Wyoming, and increase boater and public awareness of AIS threats and prevention.

Inspections consisted of either a standard inspection, high risk inspection, or drain clean dry exit inspection. A standard inspection procedure applies to all trailered watercraft before entering the water. The protocol includes a tactile and visual inspection of the watercraft exterior, inspection of any interior compartments that may hold water such as live wells, lowering of motor to drain any water, and removal of bilge plug to drain water from watercraft. In addition, a standard inspection involves a boater interview to assess the risk of the watercraft, primarily whether the watercraft has been in a water or state infested with invasive mussels in the previous 30 days.

A high risk inspection is conducted on watercraft found to have a combination of high risk factors including use out of state, use in infested waters, complex watercraft structure, or standing water. This is a very thorough inspection of all areas of the watercraft to ensure no mussels or other AIS are present on the watercraft and to ensure there is no high risk water on the watercraft.

A drain clean dry exit inspection is conducted as time permits when watercraft leave a water. This inspection ensures that contact has been made with the boater before they leave the boat ramp and verifies that the watercraft is drained and clean prior to leaving. In an effort to expedite the inspection process for boaters using the same water on consecutive days, boaters were given a “fast pass” after either a standard or exit inspection, which consisted of a self-check form signed by the inspector, with the name of water, “Drain Clean Dry” stamp, and expiration date (up to three days). If a boater entered an inspection station with a valid fast pass, they were allowed to launch without another inspection.

In the event that AIS or high risk standing water were found, watercraft were decontaminated using high pressure, hot water (140°F). The high pressure acts to remove mussels from the watercraft while the hot water is capable of killing an invasive mussel on contact.

Aquatic invasive species technicians, along with permanent WGF D personnel and volunteers, conducted inspections at 36 waters throughout Wyoming during the boating season from May 22 through September 26th, 2010 (Figure 5). Inspections were also conducted at other locations, such as WGF D regional offices. During the 2010 boating season, 42,169 watercraft inspections were conducted throughout Wyoming (Table 7). The greatest number of inspections was conducted at Jackson Lake (7,219 inspections), followed by Flaming Gorge Reservoir (5,346) and Glendo Reservoir (4,894; Table 7, Figure 6).

An estimated 28% of all inspections were conducted on nonresident watercraft from 46 different states and Canada. The greatest numbers of nonresident watercraft were from Colorado, Utah, Montana, and Idaho, respectively. Inspections peaked during holiday weekends, typical high use boating times in Wyoming (Figure 7). Inspections increased through mid-July then tapered off with decreasing boating into September. The greatest number of inspections occurred on the July 4th holiday weekend with a total of 4,495 inspections.

Inspection hours were greatest at Flaming Gorge Reservoir, where inspectors typically covered multiple boat ramps each inspection day (Table 7, Figure 8). Efficiency of inspections, as measured by the number of inspections per inspection hour, was greatest at Jackson Lake, followed by Big Horn Lake and Buffalo Bill Reservoir. These check stations typically operated in one location, had one to two inspectors at a time, and inspected relatively high numbers of watercraft, resulting in a high inspection per hour ratio (Table 7, Figure 9).

Only 58 of the total inspections were considered high risk whereas the remainders were standard and exit inspections. Those high risk inspections resulted in 23 watercraft decontaminations. Only three decontaminations were the result of watercraft encrusted with invasive mussels. All three watercraft had wintered in Lake Mead, Nevada (an infested water) and had been out of the water for over 30 days prior to inspection. As a result, all mussels found on these watercraft were dead. In each case, the invasive mussels were collected for identification, the watercraft was decontaminated, and the watercraft was allowed to launch. Other decontamination actions were the result of suspect AIS later confirmed to not be invasive mussels, or high risk standing water on watercraft. Any boat that was decontaminated was given a tamper-proof seal (wire seal attaching the boat to the trailer) to indicate a decontamination had been performed and to expedite the boaters launch if they encountered another check station prior to launch.

Of the 52 waters originally identified as high (10), moderate (13), and low (29) priorities for AIS prevention, a watercraft check station operated on 29 of these waters (56%) for at least one day during the 2010 boating season, including all high and moderate priority waters. Inspections were conducted at an additional 7 lower priority waters (36 total) during 2010, including four rivers. In addition to the original 52 waters identified as priorities, 50 other waters (102 total) have been identified as boating waters at which to conduct watercraft inspections and monitoring in the future. These 102 waters represent over 175 ramps or access points at which to potentially intercept watercraft prior to launch. Of the total 102 waters identified in Wyoming, watercraft inspections occurred at 35% of these waters in 2010.

Many of the larger waters have multiple boat ramps or points at which a watercraft could enter the water. In order to maximize the number of watercraft inspected, check stations were placed at entrance points to waters, or at ramps with the highest use. When check stations were operational (typically Thursday through Sunday), inspectors covered an average of 77.5% (range 50.0 – 100.0%) of boat ramps at the 36 inspected waters (Table 7). However, on many waters the number of boat ramps covered each inspection day varied depending on available personnel. In addition, no ramps were covered at any waters on days without inspectors present, typically Monday through Wednesday. Limited resources in personnel and funding prohibited inspections at all priority waters seven days a week or for more than 10 hours per day on average.

To estimate the daylight coverage provided by inspections during 2010, a metric of ramp days was used. Ramp days were calculated as the number of ramps at a water multiplied by the number of days in the season (128 days from May 22 – September 26). This gave an estimate of total ramp days, or days in the season on which watercraft could launch at that water. To determine the daylight coverage provided by AIS check stations during 2010, the ramp days covered were calculated as the number of days inspections occurred at a water (minimum 10 hours/day) multiplied by the number of ramps typically covered by that check station. Daylight coverage was then calculated as the ramp days covered as a percent of the total ramp days at each water.

Daylight coverage ranged from 0.2% at waters with only a few inspection hours during the season, to 54.7% at Fremont Lake which had the highest coverage (Table 7, Figure 10). Daylight coverage was relative to water priority in most cases, with averages of 29.6% at high priority waters, 21.4% at moderate, 4.7% at low, and 2.1% at additional waters inspected during 2010. Daylight coverage on the 23 high and moderate priority waters averaged 25.0%. Overall, daylight coverage averaged 17.1% among all 36 waters.

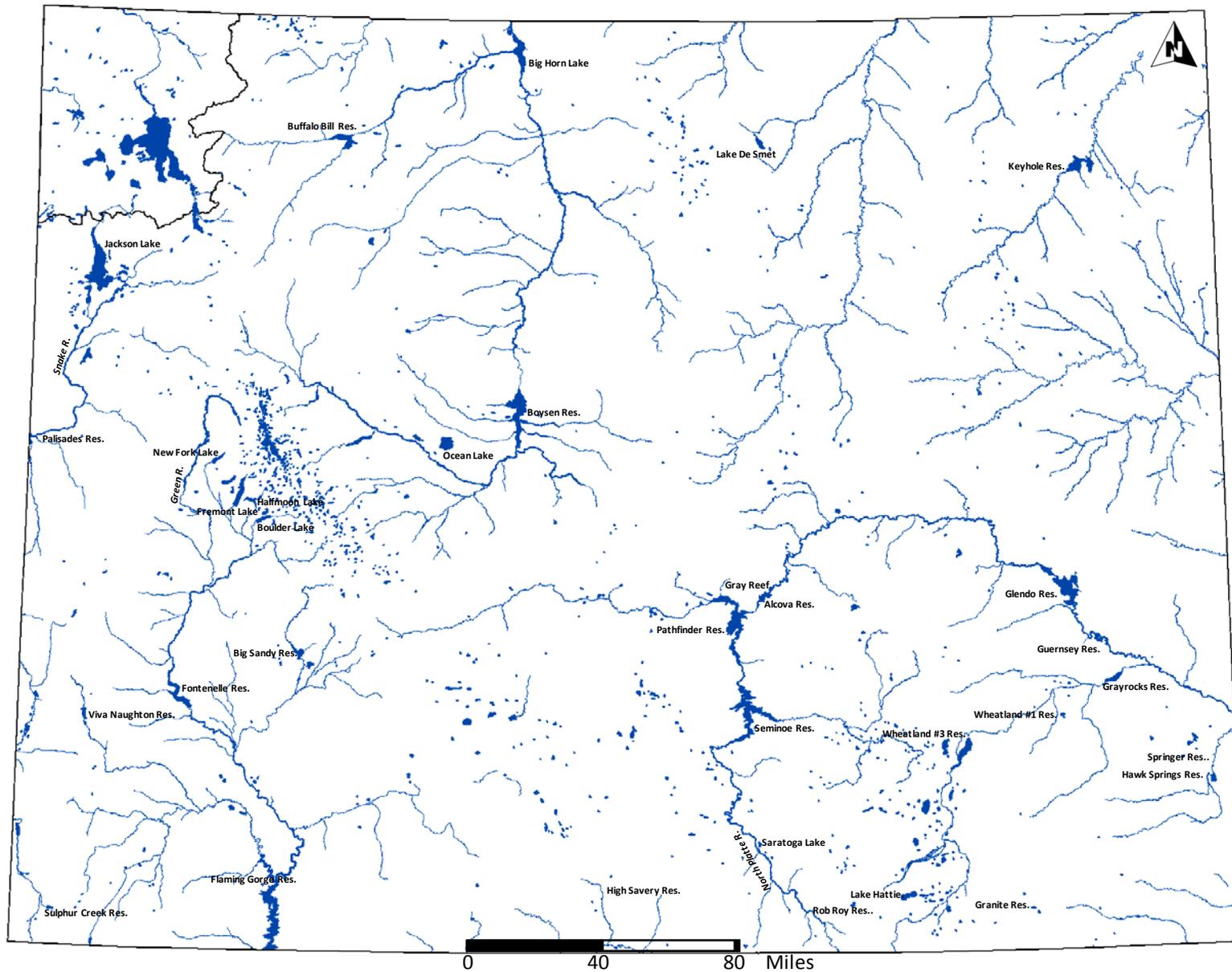


Figure 5. Map of waters with aquatic invasive species watercraft inspection stations during 2010 boating season.

Table 7. Total inspections, high risk inspections, decontaminations, inspection hours, inspections per hour, percent ramps covered and percent total daylight coverage at waters during 2010.

Water name	Total inspections	High risk inspections	Decontaminations	Inspection hours	Inspections per hour	Ramps covered (%)	Total daylight coverage (%)
Alcova Reservoir	1,200	1	0	499	2.4	62.5	14.4
Big Horn Lake	3,226	1	0	811	4.0	50.0	19.9
Big Sandy Reservoir	2	0	0	10	0.2	100.0	0.8
Boulder Lake	30	0	0	37	0.8	100.0	2.3
Boysen Reservoir	3,442	0	0	1,723	2.0	40.0	21.4
Buffalo Bill Reservoir	3,930	1	0	1,357	2.9	100.0	42.2
Flaming Gorge Reservoir	5,346	11	4	3,711	1.4	58.3	33.0
Fontenelle Reservoir	412	0	0	589	0.7	75.0	14.1
Fremont Lake	1,475	0	0	1,125	1.3	100.0	54.7
Glendo Reservoir	4,894	5	2	2,084	2.3	50.0	27.3
Granite Reservoir	902	0	0	678	1.3	100.0	42.2
Grayrocks Reservoir	838	2	0	816	1.0	66.7	28.1
Gray Reef-North Platte R.	40	0	0	25	1.6	100.0	1.6
Green River	17	0	0	60	0.3	100.0	4.7
Guernsey Reservoir	945	5	1	625	1.5	100.0	25.8
Halfmoon Lake	28	0	0	20	1.4	100.0	1.6
Hawk Springs Reservoir	485	0	0	538	0.9	100.0	33.2
High Savery Reservoir	13	0	0	34	0.4	100.0	2.3
Jackson Lake	7,219	7	5	1,036	7.0	100.0	45.3
Keyhole Reservoir	2,626	9	3	1,767	1.5	75.0	36.6
Lake De Smet	715	0	0	653	1.1	66.7	18.0
Lake Hattie	42	0	0	65	0.6	100.0	4.5
New Fork Lake	149	0	0	109	1.4	100.0	7.8
North Platte R.-Upper	10	0	0	15	0.6	100.0	1.2
Ocean Lake	40	0	0	34	1.2	50.0	1.6
Palisades Reservoir	1,754	0	0	728	2.4	100.0	40.2
Pathfinder Reservoir	831	0	0	442	1.9	100.0	19.1
Rob Roy Reservoir	94	0	0	155	0.6	100.0	12.1
Saratoga Lake	11	0	0	11	1.0	100.0	0.8
Seminole Reservoir	1,065	6	2	1,297	0.8	75.0	28.1
Snake River	30	0	0	20	1.5	100.0	1.6
Springer Reservoir	1	0	0	2	0.5	100.0	0.2
Sulphur Creek Reservoir	164	1	1	289	0.6	100.0	16.4
Viva Naughton Reservoir	175	0	0	298	0.6	50.0	9.4
Wheatland #1 Reservoir	6	0	0	32	0.2	100.0	2.3
Wheatland #3 Reservoir	0	0	0	11	0.0	100.0	1.0
Other	12	9	5	38	0.3	-----	-----
Total/Average	42,169	58	23	21,745	1.9	77.5	17.1

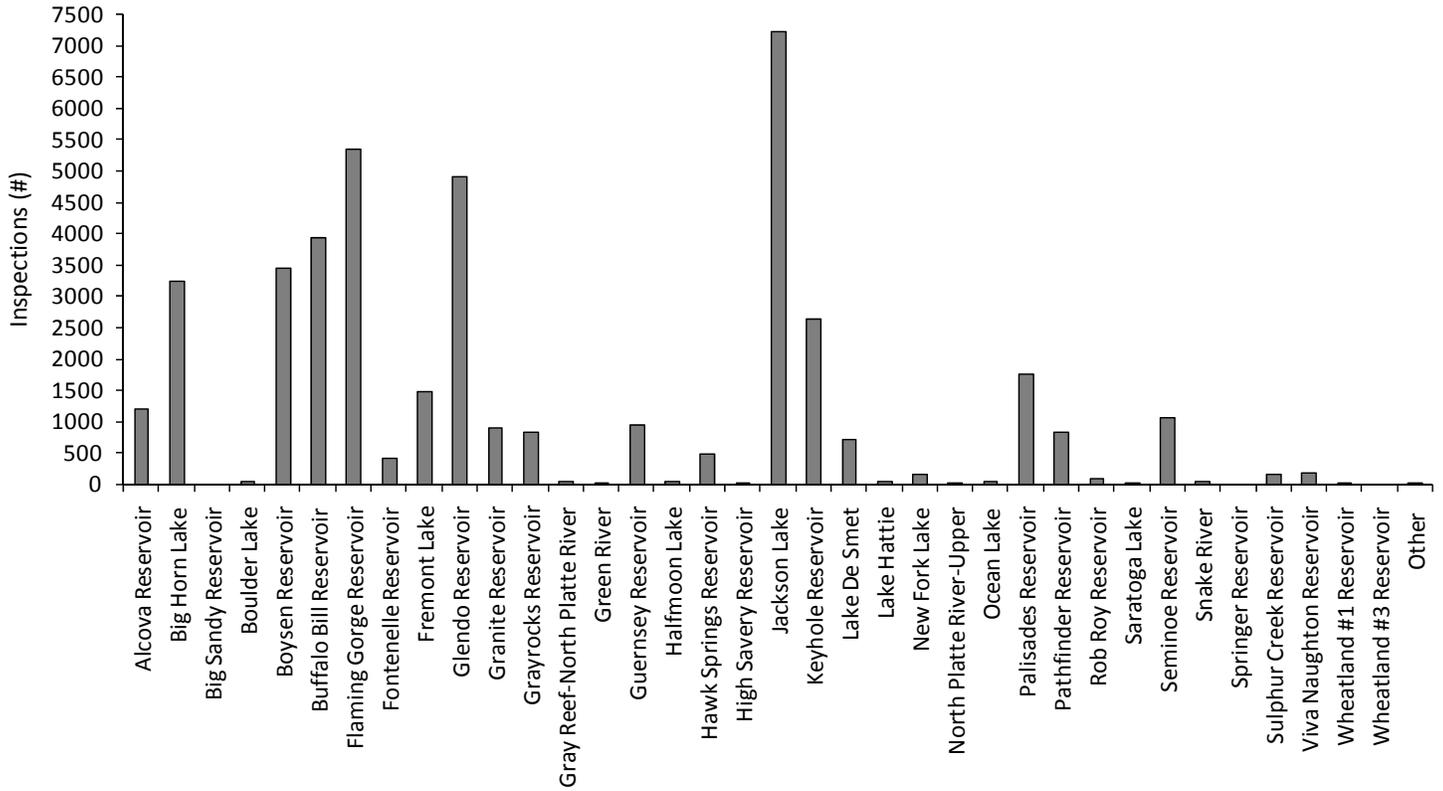


Figure 6. Total watercraft inspections by water from May through September 2010.

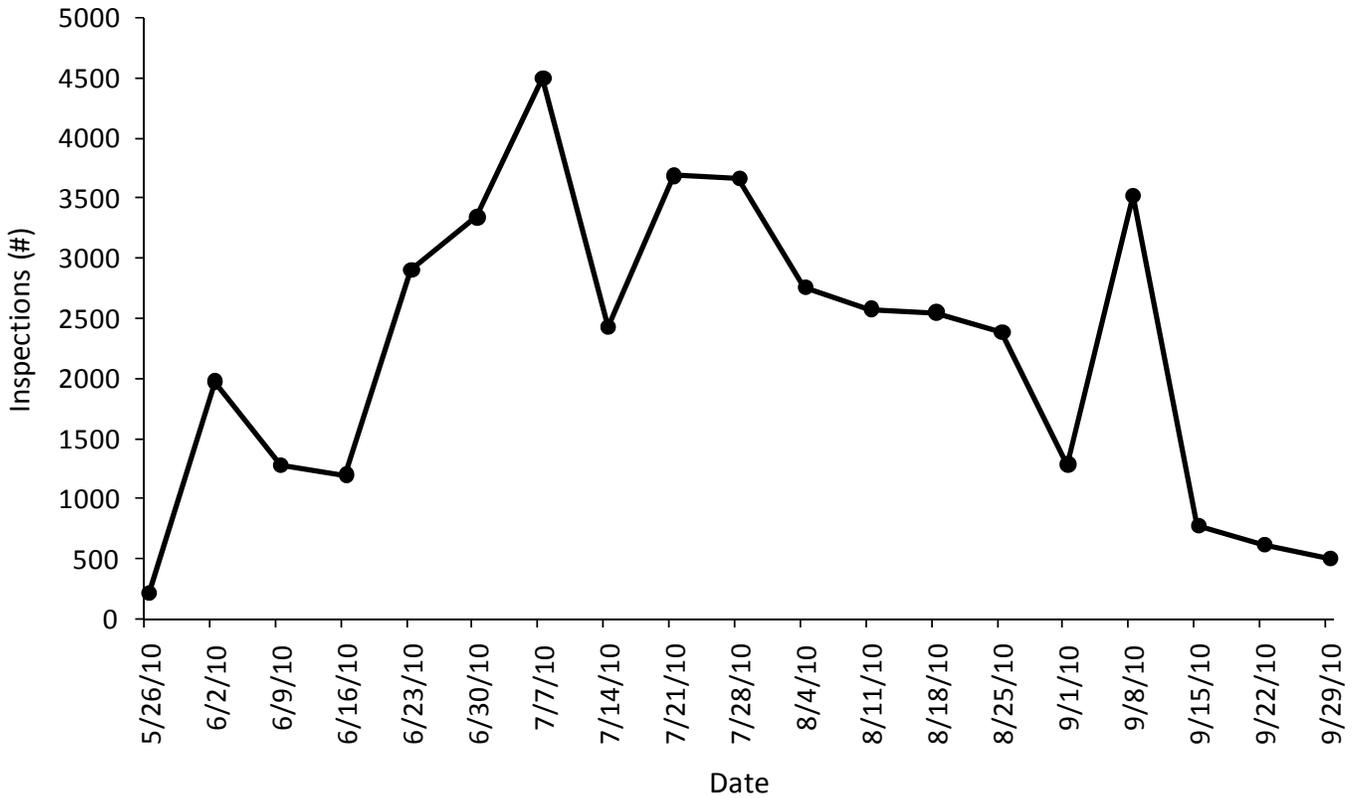


Figure 7. Total weekly watercraft inspections by date from May through September 2010.

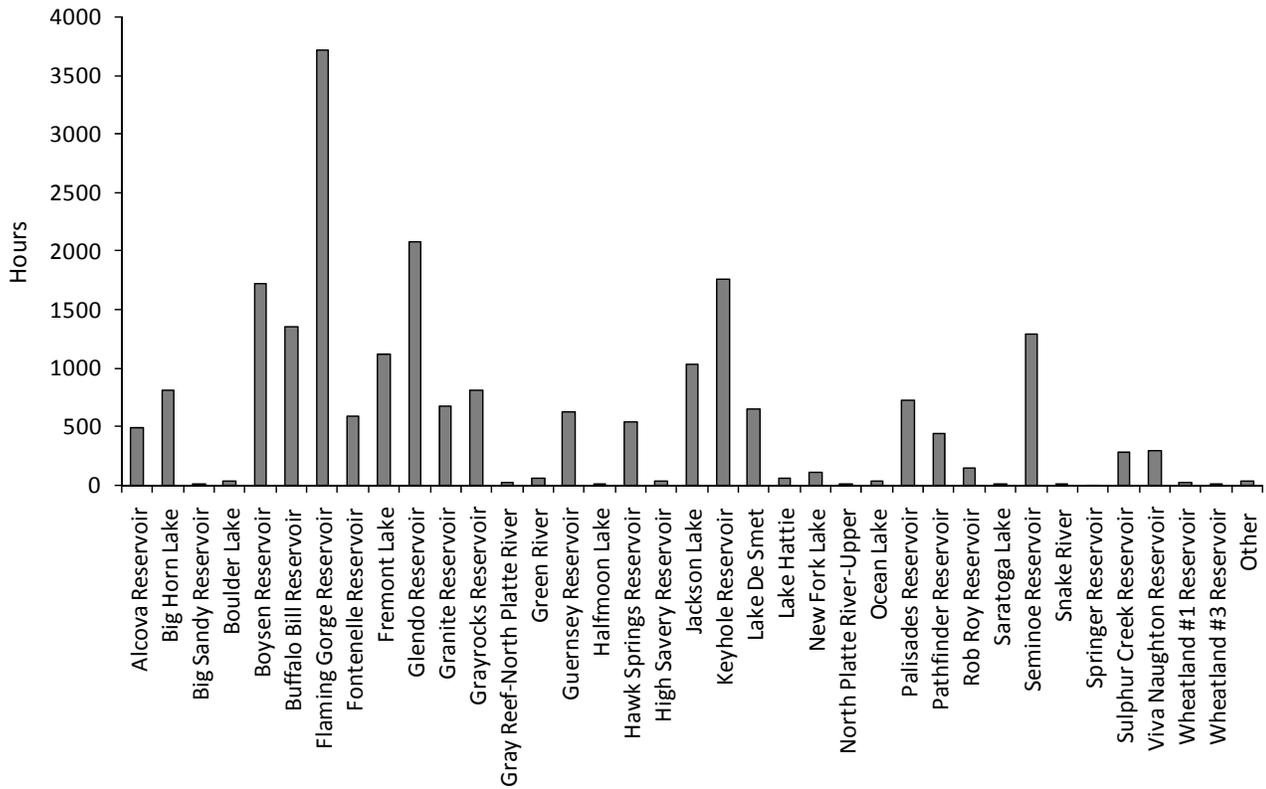


Figure 8. Total inspection hours by water from May through September 2010.

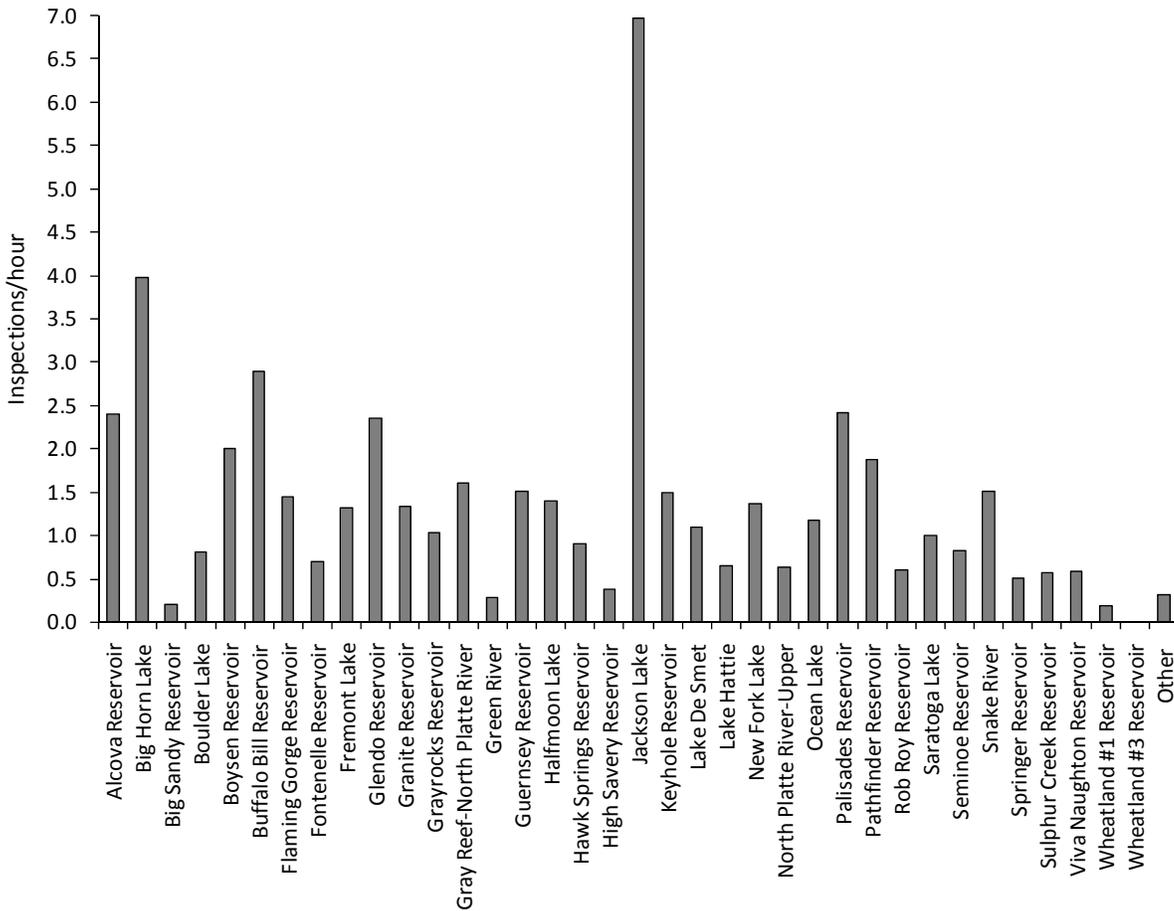


Figure 9. Total inspections per hour by water from May through September 2010.

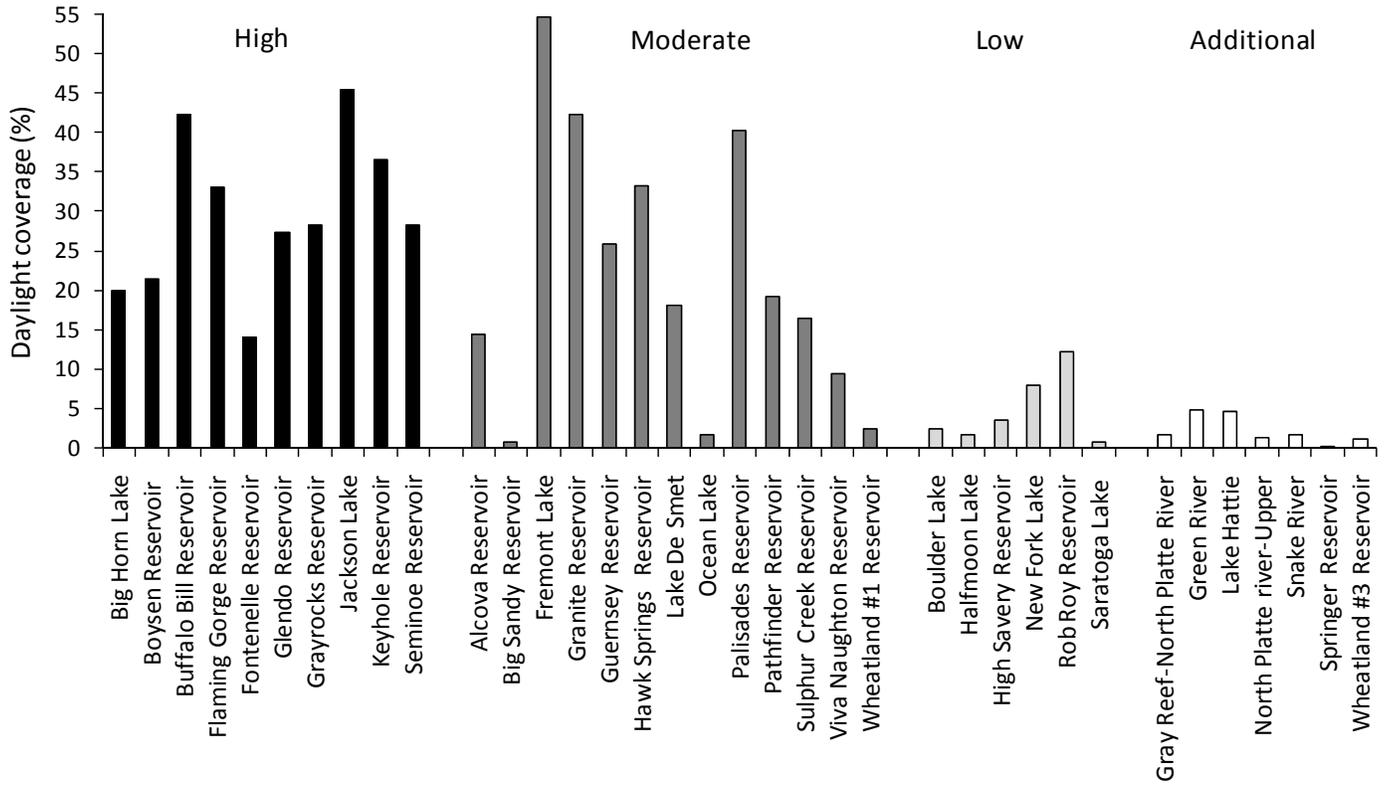


Figure 10. Percent daylight coverage of watercraft inspections at waters from May through September 2010. Waters are grouped into high (black), moderate (dark gray), low (light gray) priority and additional (white) waters at which inspections occurred.

Appendix D: Summary of water monitoring methods and results during 2010.

Monitoring or surveillance of waters is a critical component to early detection of invasive mussels and other AIS, and will allow the state to implement rapid response plans and containment strategies if any Wyoming water becomes infested.

Monitoring consisted of sampling for the larval (veliger) stage and also for juvenile and adult mussels in major waters. The “Wyoming Game and Fish Department Aquatic Invasive Species Sampling and Monitoring Manual” was developed to outline protocols for sample collection and preservation. Seven major waters were sampled and results analyzed by the Bureau of Reclamation (BOR). An additional 45 waters were sampled by the WGFD. Due to limited permanent AIS personnel, sampling was conducted by regional fisheries management crews and did not include sampling for AIS other than invasive mussels.

Larval sampling was completed by conducting plankton net tows at several locations at each water, where introduction of mussels would be most likely (marinas, boat ramps, etc.). Samples were then preserved and sent to the BOR laboratory in Denver, or the Montana Fish, Wildlife and Parks (MTFWP) laboratory in Helena. Analysis of samples was completed at no cost to the state by BOR and MTFWP for 2010.

Juvenile and adult sampling was conducted by placing artificial substrates (plastic compact discs) on a rope suspended in the water at several locations where introduction of mussels would be most likely. These substrates were placed in the summer and left in the water through the fall at which point they were removed and examined for any evidence of mussel encrustation.

A total of 52 waters were sampled for juvenile/adult mussels and veligers. Of these, 23 high priority waters were sampled twice (summer and fall) for veligers with all other waters sampled once in the fall. Over 200 samples were collected and submitted for analysis. To date, all results for veligers are negative (Table 8) and initial examination of artificial substrates is negative for mussel encrustation. Final results from all samples are expected by early December 2010.

In 2009, the BOR sampled 7 waters in Wyoming with no additional waters sampled by WGFD due to limited resources. The 52 waters sampled in 2010 represent a dramatic increase in the ability to monitor for invasive mussels and allow the state to respond rapidly to any new infestations. An additional benefit to sampling in 2010 was the ability of BOR and MTFWP to analyze samples at no cost.

Limitations to sampling in 2010 were due to the lack of permanent AIS program personnel needed to collect samples at additional waters. Of the 102 identified boating waters in Wyoming, only 51% were sampled for invasive mussels. Increased capacity with additional permanent personnel in 2011 will allow sampling of additional waters to allow early detection of new infestations and initiation of rapid response plans. The laboratory analysis completed by the BOR at their expense was for 2010 only, and this analysis will come at a cost to the state in 2011 and future years. It is unknown whether analysis by MTFWP will continue in future years at no cost, as this funding comes through a USFWS grant.

Table 8. Results of microscopy analysis for larval mussels in 52 waters sampled in 2010.

Water name	Lab	Results	Water name	Lab	Results
Alcova Reservoir	BOR	Negative	Lake De Smet	MTFWP	Negative
Beck Lake	BOR	Not yet reported	Lake Owen	MTFWP	Negative
Big Horn Lake	BOR	Negative	Lower Green River Lake	BOR	Not yet reported
Big Sandy Reservoir	BOR	Not yet reported	Lower New Fork Lake	BOR	Not yet reported
Boulder Lake	BOR	Not yet reported	Lower Slide Lake	MTFWP	Negative
Boysen Reservoir	BOR	Negative	Meadowlark Lake	BOR	Not yet reported
Buffalo Bill Reservoir	BOR	Negative	Meeks Cabin Reservoir	BOR	Not yet reported
Burnt Lake	BOR	Not yet reported	Naughton Plant Pond	MTFWP	Not yet reported
Crystal Reservoir	MTFWP	Negative	North Crow Reservoir	MTFWP	Negative
Deaver Reservoir	BOR	Not yet reported	Ocean Lake	BOR	Not yet reported
East Newton Lake	BOR	Not yet reported	Palisades Reservoir	MTFWP	Not yet reported
Flaming Gorge Reservoir	BOR	Not yet reported	Pathfinder Reservoir	BOR	Negative
Fontenelle Reservoir	BOR	Negative	Pilot Butte Reservoir	BOR	Not yet reported
Fremont Lake	BOR	Negative	Rob Roy Reservoir	MTFWP	Negative
Glendo Reservoir	BOR	Negative	Saratoga Lake	BOR	Not yet reported
Granite Reservoir	MTFWP	Negative	Seminole Reservoir	BOR	Not yet reported
Grayrocks Reservoir	MTFWP	Negative	Soda Lake	BOR	Not yet reported
Guernsey Reservoir	BOR	Not yet reported	Sulphur Creek Reservoir	MTFWP	Not yet reported
Halfmoon Lake	BOR	Not yet reported	Upper New Fork Lake	BOR	Not yet reported
Harrington Reservoir	BOR	Not yet reported	Upper Sunshine Reservoir	BOR	Not yet reported
Hawk Springs Reservoir	MTFWP	Negative	Viva Naughton Reservoir	BOR	Not yet reported
High Savery Reservoir	MTFWP	Negative	Wardell Reservoir	BOR	Not yet reported
Hog Park Reservoir	BOR	Not yet reported	West Newton Lake	BOR	Not yet reported
Jackson Lake	BOR	Not yet reported	Wheatland #1 Reservoir	MTFWP	Negative
Jim Bridger Pond	BOR	Not yet reported	Willow Lake	BOR	Not yet reported
Keyhole Reservoir	BOR	Negative	Woodruff Narrow	MTFWP	Not yet reported

Appendix E: Summary of decal sales during 2010.

The Wyoming AIS Act required all watercraft operating in Wyoming waters to purchase an AIS decal to help fund the program in the future. In June 2010, the WGFC passed Chapter 62, a regulation pertaining to AIS which detailed the fee structure for the decal. This regulation also provided an exemption from the decal for inflatable watercraft less than 10 feet in length. The fee structure of the decal is \$5 for resident non-motorized, \$10 for resident motorized, \$15 for nonresident non-motorized, and \$30 for nonresident motorized watercraft. The decal became available for purchase on the WGFD website on April 15, 2010 and an all automated license selling agents on May 17, 2010. Decals were also sold by in the field by law enforcement personnel and at WGFD regional offices.

As of late October, 35,242 decals have been sold, resulting in receipt of \$446,385 (Table 9). Approximately 82% of all watercraft registered in Wyoming had decals in 2010. Decal sales continued to increase through the summer and tapered off with the end of the boating season in September (Figure 11). Sales of resident motorized decals were greatest in number and revenue generated with nonresident non-motorized decal sales least (Table 9, Figure 12).

Table 9. Cumulative decal sales (count and revenue) from April through October 2010.

Decal Type	Count	Sales
Resident Motorized	20,614	\$206,140
Resident Non-motorized	6,466	\$32,330
Nonresident Motorized	5,699	\$170,970
Nonresident Non-motorized	2,463	\$36,945
Total	35,242	\$446,385

In an effort to educate boaters on the need for the decal and enhance public acceptance of the new law, the WGFD offered boaters a one-time temporary decal in the field to allow a boater to launch if a permanent decal had not been purchased prior to arriving at the boat ramp. Recipients of a temporary decal were advised that they were required by law to purchase a permanent decal upon returning home. Public acceptance of the decal requirement was enhanced by this practice. During 2010, an estimated 3,162 temporary decals were issued to boaters; less than 7 percent of the total number of permanent decals sold.

The decal has benefited the AIS program by ensuring a permanent funding source to help partially fund the program in 2011. In addition, the decal generated interest in the program from boaters who were required to purchase the decal. However, the majority of complaints received from boaters about the AIS program in 2010 regarded the decal. Over 100 public comments were received on the WGFC regulation, with over 80% of the comments opposed to the decal in some way. In addition, the majority of boaters with complaints during AIS inspections at the start of the season were related to the need to purchase a decal. However, the temporary decal issued so that boaters were not denied launching helped gain public support of the program. One clear limitation of the decal is that the funds generated in 2010 are insufficient to run a comprehensive AIS prevention program in 2011 and future years without additional legislative funding. The decal may become a source of stable funds generated each year to help sustain the program, but will never be sufficient to run the scale of program needed for AIS prevention in Wyoming.

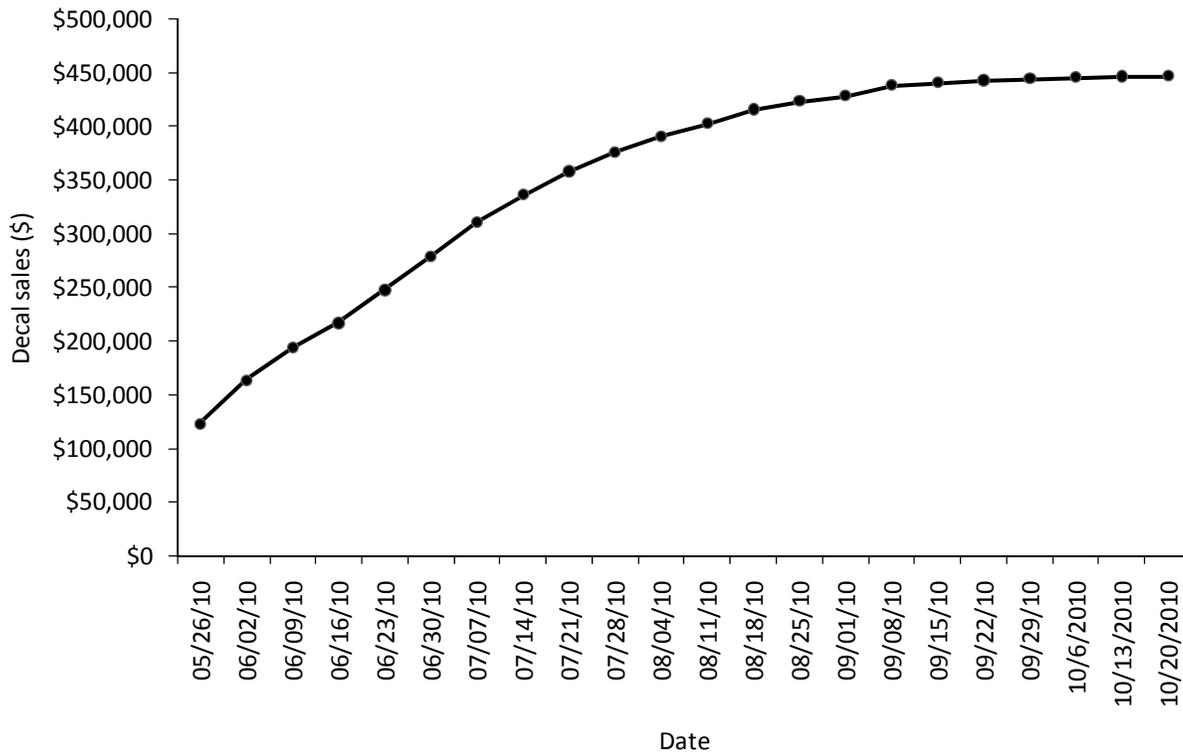


Figure 11. Cumulative decal revenue by date from May through October 2010.

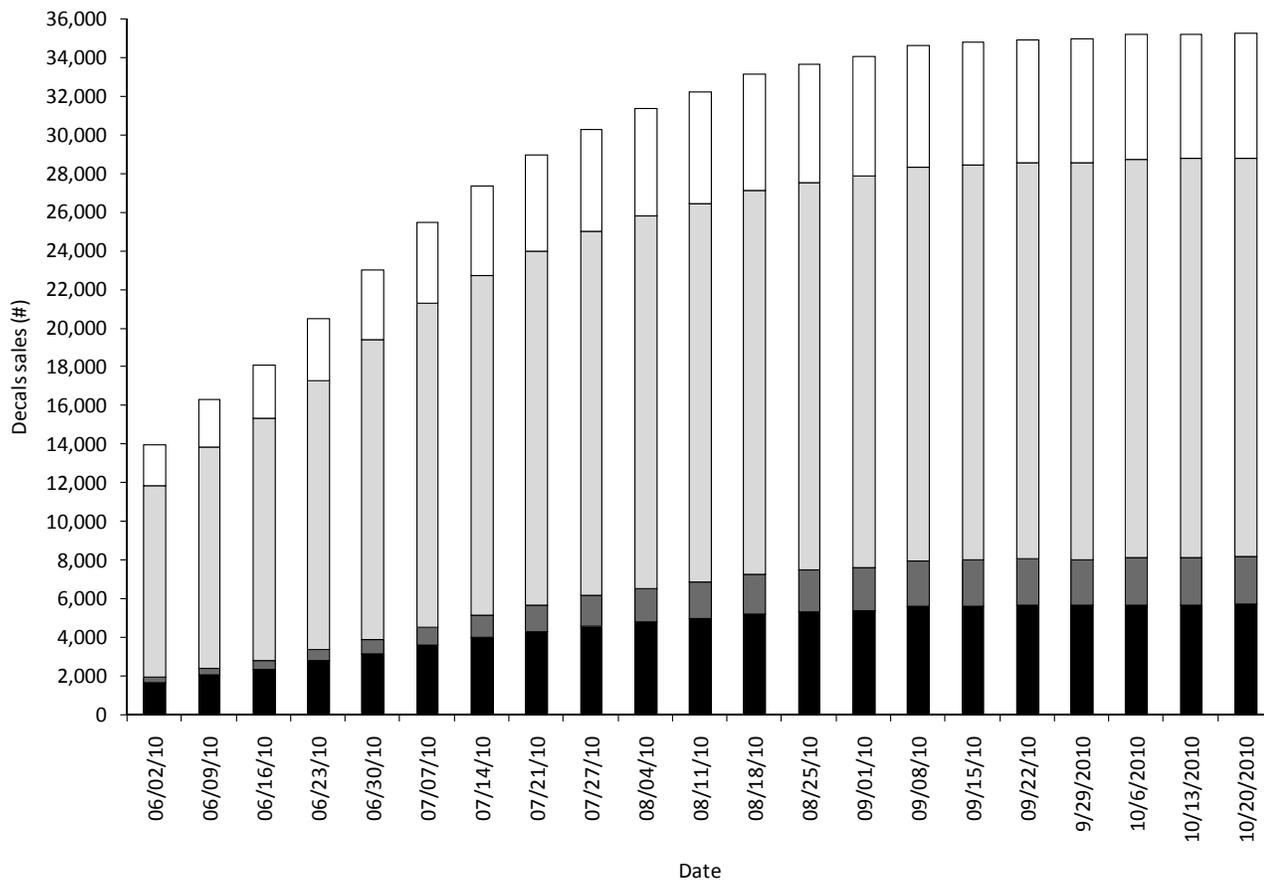


Figure 12. Cumulative number of decals sold by date. Type of decals sold are resident (non-motorized-white, motorized-light gray), and nonresident (non-motorized-dark gray, motorized-black).

Appendix F: Summary of AIS program costs for 2010.

Table 10. AIS program costs for supplies, equipment, and services as of October 15, 2010.

Supplies, Equipment and Services	General Fund	WGFD	Total	Description
Vehicle repairs and supplies	\$4,788	-----	\$4,788	Vehicle maintenance
Utilities	\$2,048	\$1,080	\$3,128	Propane, port-a-potty, electrical
Postage	\$85,969	-----	\$85,969	Decal fulfillment, direct mailer
Registrations	\$1,149	\$190	\$1,339	Training
Advertising	\$145,267	\$34,394	\$179,661	Print, radio, billboard media
In-state travel	\$7,717	\$17,344	\$25,061	Check station and training travel
Printing	\$57,306	\$22,629	\$79,935	Decals, brochures, manuals
Camp Groceries	\$9,785	\$639	\$10,424	Remote check stations
Field supplies	\$29,504	\$32,855	\$62,359	Monitoring and check station
Signage	\$43,380	\$8,624	\$52,004	Boat ramp and check station signs
DP equipment	\$2,055	-----	\$2,055	
Transportation equipment	\$335,817	\$7,444	\$343,261	Trucks and trailers
Technical equipment	\$46,225	\$918	\$47,143	Decontamination units
Vehicle/equipment rentals	\$29,899	\$607	\$30,506	Motor pool vehicles
Telecomm	\$8,743	-----	\$8,743	Check stations cell phones/radios
Contractual	\$3,145	-----	\$3,145	Data entry
Total	\$812,797	\$126,724	\$939,521	

Appendix G. Proposed supplemental budget request.

The continuation of 1 coordinator and 29 AWECs would require funding of \$501,409 (Table 11).

Supportive costs related to decal issuance would include postage and printing for AIS decal fulfillment for the 2011 field season in addition to the first half of 2012 (\$30,000 and \$38,940 respectively). Educational outreach efforts would include brochures and self check flyers (\$12,500) sent to registrants and available at marinas, boat dealers, license selling agents; radio commercials and newspaper advertisements (\$20,000) with drain clean dry messages; educational display items and promotional items at dealers, marinas, and agents to increase AIS awareness statewide (\$21,000).

Costs associated with field personnel and inspections include: signage at boat ramps and inspection sites (\$57,000) and field supplies to include laboratory testing supplies, propane, and port-a-potties for personnel (\$24,500). Additionally, field personnel would require approximately 441 days of in-state travel (\$39,400) along with camp groceries (\$24,500) for seasonal personnel and volunteers while on-site working out of camp trailers. The department would continue to lease 20 ½ ton vehicles for the May 2011-September 2011 and May 2012-June 2012 period (\$98,000). There would also be costs of operating owned vehicles and boats (gas, repairs, supplies) with estimated miles of 160,000 for the same period (\$52,305). Uniforms for field personnel for the 2011 and 2012 field season would also need to be provided (\$31,000). Training and certification of field personnel in first aid and CPR for the 2011 and 2012 field season is another ongoing cost (\$12,000) in addition to cell phones for seasonal and field supervisors (\$11,785).

Additional field operational costs include a provision for quarantine space rental (\$5,800). A cost not incurred in 2010 was for water sampling as the Bureau of Reclamation did not charge for water samples during the current field season; however, effective 2011 their charge is \$125 per sample with the department estimating 292 samples requiring analysis and veliger verification through DNA and scanning microscopy (\$42,000). Administrative costs include an AIS hotline for 24 hour calls (\$3,760); and the AIS coordinator costs of 30 days in-state travel (\$4,200); vehicle operating costs for 20,000 miles (\$5,200); cell phone (\$428) and uniform allowance (\$500).

Table 11. 2011-2012 Biennium supplemental budget request by object code.

Code	Class	Amount	Description
0103	Salaries classified	\$60,012	1 Permanent Position
0105	Employer pd benefits	\$61,138	1 Permanent Position
0110	AWEC salaries & benefits	\$379,900	29 AWECs
0197	Retiree benefits	\$359	1 Permanent Position
<i>Personal services</i>		<i>\$501,409</i>	
0202	Equipment rep & mntc	\$19,169	Vehicles, equipment
0203	Utilities	\$4,000	Propane (field supplies)
0204	Communication	\$30,000	Decal postage
0207	Dues-Lic-Registration	\$12,000	Training
0208	Advertising	\$20,000	News& radio adds
0221	Travel in-state	\$43,600	All AIS personnel
0231	Off supp-printing	\$51,440	Decals/flyers/brochures
0233	Mtr veh supplies	\$38,336	Fuel & repair supplies
0234	Food Supplies	\$24,500	Camp Groceries
0235	Med-Lab supplies	\$5,500	Field supplies
0236	Educ& rec supplies	\$21,000	Public outreach supplies
0237	Soft Goods & housekeeping	\$33,000	Uniforms & field supplies
0238	Farm & livestock supplies	\$13,500	Field supplies
0239	Other repair / maint sup.	\$57,000	Signage
0243	Transportation equip	\$24,749	Vehicles & campers
0251	Real property rental	\$5,800	Quarantine space rental
0252	Equipment rental	\$98,000	Vehicle leases
<i>Supportive services</i>		<i>\$501,594</i>	
0420	Telecomm	\$12,213	Cell phones
0901	Professional fees	\$45,760	Water samples/AIS hotline
Total		\$1,060,976	

*Note: This budget does not include the cost of a containment program, which if a state water tested positive for invasive mussels, would be necessary. The Department anticipates the cost of containment at one water to be approximately \$617,000, with the major cost being a large re-circulating decontamination unit which would be needed at the major boat ramp.

Appendix H: Partner contributions and federal funding requests for AIS prevention in Wyoming in 2010.

Partner contributions towards AIS prevention in Wyoming in 2010 totaled over \$163,000 and over 600 hours of time. The following agencies and groups contributed to the Wyoming AIS program in 2010:

- Bear River State Park: Camper space and electricity/water for camper.
- Boysen State Park: Logistical facility support for check station.
- Buffalo Bill State Park: Enforcement of watercraft not stopping at check station.
- Bureau of Reclamation Denver: Veliger laboratory analysis = \$17,000.
- Bureau of Reclamation Wyoming: Provided housing and utilities for inspectors at Seminoe check station.
- Carbon County Road and Bridge: Use of facility for Seminoe check station.
- Cheyenne Board of Public Utilities: Purchase of seven AIS information signs for boat ramps at five waters = \$700. Future plans for purchase of one decontamination unit (\$8,000).
- Curt Gowdy State Park: Use of site for inspection station and decontamination, enforcement of AIS regulation, and inspections of watercraft.
- Friends of Big Horn Lake: Outreach; distribution of brochures and information to local municipalities and county officials.
- Glendo State Park: Provided location for check station, enforcement of AIS regulation, installation of boat ramp signs.
- Guernsey State Park: Provided location for check station and enforcement of AIS regulation.
- Hawk Springs State Park: Provided location for check station.
- Jim Bridger Power Plant: Purchase and installation of AIS signs at Jim Bridger Pond.
- Keyhole State Park: Assistance with gravel blading at Keyhole Reservoir inspection site, use of facilities for inspectors, storage of inspector trailer, and enforcement of AIS regulation.
- Montana Fish, Wildlife and Parks: Veliger laboratory analysis = \$9,000.
- North Platte Walleyes Unlimited: Alcova Reservoir and Pathfinder Reservoir inspection site construction materials = \$4,812.
- National Park Service-Big Horn Canyon Recreation Area: Personnel assistance at Big Horn Lake check station (456 hours), purchase of decontamination unit (\$8,000), use of ranger station facilities for check station site.
- Natrona County Roads, Bridges and Parks: Alcova Reservoir and Pathfinder Reservoir inspection site construction labor = \$3,983.
- Pinedale Boat Club: Fremont Lake inspection site construction materials = \$1,100.
- Seminoe State Park: Enforcement of AIS regulation, and inspections of watercraft.
- Teton County Weed and Pest: Personnel assistance at Jackson Lake check station = 60 hours.
- Trout Unlimited: Purchase of boat ramp signs for Jackson Lake = \$900.
- U.S. Forest Service-Bridger Teton and Ashley National Forests: AIS outreach including brochures, pocket guides and sampling gear (\$30,000), personnel to conduct outreach and education (\$22,000), purchase of decontamination unit (\$8,000), seasonal technician for three years (\$39,000), sampling on USFS waters (\$3,000) = \$102,000.
- U.S. Forest Service-Medicine Bow-Routt National Forest: Installation of AIS signs on three waters within forest = \$1,000.

- U.S. Forest Service-Shoshone and Bighorn National Forests: Salary and travel for USFS personnel working on AIS (\$32,387), equipment (\$1,635), outreach materials (\$6,700) = \$40,722.
- Other: Public volunteer at Jackson Lake for check station assistance = 100 hours.

Requests for federal funding for Wyoming AIS prevention in 2010

- \$142,000 was requested in April 2010 through a grant from the Quagga Zebra Mussel Action Plan. This grant request was not funded by the USFWS.
- Senator John Barrasso for support for the 100th Meridian Invasive Species State Revolving Loan Fund that would provide additional aquatic invasive species program funds to states. February 12, 2010.
- Senator John Enzi for support for the 100th Meridian Invasive Species State Revolving Loan Fund that would provide additional aquatic invasive species program funds to states. February 12, 2010.
- Congresswoman Cynthia Lummis for support for the 100th Meridian Invasive Species State Revolving Loan Fund that would provide additional aquatic invasive species program funds to states. February 12, 2010.
- Endorsed letter of support to Secretary of interior Kenneth L. Salazar for additional funding to states through Quagga-Zebra Mussel Action Plan. February 15, 2010.
- Request to Wyoming Area Office of Bureau of Reclamation (John Lawson) for consideration of immediate and future financial support for the Wyoming AIS program. May 11, 2010.

Appendix I: Privatization of watercraft inspection and decontamination

An increase in commercial interest in certification to inspect and decontaminate watercraft would increase the capacity of the state. In 2010, an AIS inspector training session was opened to private entities such as boat dealers and marina operators. One boat mechanic did attend the training and become certified. Increased permanent AIS personnel would allow the WGFD to further pursue this as a viable option for increasing the capacity of the watercraft inspection program.

Private inspectors would be free to charge watercraft owners for inspection and decontamination services at their discretion. The state would continue to offer these services at no cost and would continue operation of watercraft inspections at waters throughout the state. Privatization of some watercraft inspections would allow increased locations for watercraft owners to have their watercraft inspected prior to launching in Wyoming. All inspectors, state or private would have to complete training by WGFD personnel. Increased permanent personnel would allow for more training opportunities for private individuals across the state. In addition, AIS personnel would conduct quality assurance checks on both private and state authorized AIS inspectors to ensure compliance with protocol.

Appendix J: Wyoming Aquatic Invasive Species Plan summary

The Wyoming Aquatic Invasive Species Management Plan was developed to ensure a coherent, cohesive response to the threat posed by AIS and to coordinate efforts between federal, state, tribal, local, and private entities. The goal of the Wyoming AIS Plan and program is to fully implement a coordinated strategy to prevent, control, contain, monitor, and whenever possible, eradicate aquatic invasive species from the waters of the state.

Specific plan objectives to achieve this goal are 1) to coordinate and implement a comprehensive management program, 2) to prevent the introduction of new AIS into Wyoming, 3) to detect, monitor, and eradicate AIS in Wyoming, 4) to control and eradicate established AIS that have significant impacts on Wyoming waters, 5) to educate resource user groups about the risks and impacts of AIS and how to reduce their harmful impacts, and 6) to support research on AIS in Wyoming and develop efficient systems to disseminate information to research and management communities.

Plan recommendations are to continue and expand AIS outreach, watercraft inspections, and monitoring of AIS in Wyoming and to partner with state, federal, and local entities to increase efforts in these areas. While several state and federal entities have authority and programs related to AIS, there is a need to better coordinate activities to reduce redundancy and increase effectiveness.

The plan was completed in 2010 after review by affected stakeholders and the public. The plan has been approved by the Wyoming Game and Fish Commission, was signed by the Governor in September and then submitted to the Aquatic Nuisance Species Task Force for their final approval in November 2010. Once approved, the plan will allow Wyoming to be eligible to receive approximately \$35,000 annually in federal funding for AIS prevention and position Wyoming for future funding eligibility.

Appendix K: Summary of AIS Programs in states neighboring Wyoming with substantial AIS programs.

Colorado

Summarized from 2009 report “State Aquatic Nuisance Species (ANS) Program Summary for Colorado Legislators per SB 08226”:

Zebra and/or Quagga Mussels were identified in eight reservoirs in Colorado in 2008 as a result of a multi-year statewide sampling effort conducted by the Division of Wildlife (DOW) in partnership with State Parks (Parks), the U.S. Fish & Wildlife Service and the U.S. Bureau of Reclamation. The State Aquatic Nuisance Species (ANS) Act was passed by the General Assembly in May 2008. The Act allocated funding to ANS programs in both the DOW and Parks. It provides authority to qualified peace officers to inspect, and if necessary, decontaminate or quarantine watercraft for ANS. It also provides authority for trained authorized agents to inspect and decontaminate watercraft for ANS. Regulations required by the Act were passed by the Parks Board on February 20, 2009. The rules require mandatory watercraft inspection and if necessary decontamination of all boats coming in from out of state, leaving a known positive water in Colorado, and those entering a high risk water where inspections and decontaminations are required by the managing agency.

The DOW internally reallocated resources to create a fulltime position to coordinate Invasive Species activities statewide beginning July 1, 2008. In February 2009, Parks hired a fulltime position to coordinate the Parks ANS program and train staff in inspection and decontamination procedures at 27 parks. As provided for in the ANS Act, Parks hired seven fulltime employees to implement the ZQM Plan with Parks, which includes a comprehensive education, inspection and decontamination program.

Pueblo Reservoir, Granby Reservoir, Grand Lake, Shadow Mountain Reservoir, Willow Creek Reservoir, Tarryall Reservoir and Jumbo Reservoir are all considered positive for zebra and/or quagga mussels. In April 2009, Blue Mesa Reservoir was classified as ‘suspect’ for quagga mussels. This classification is used by multiple states in the west following inconclusive genetic analysis of juvenile mussel veligers. For the third consecutive year, juvenile mussel veligers were detected in Pueblo Reservoir. This indicates that there is a reproducing population of adult mussel population in Pueblo Reservoir. There were no positive detections for zebra or quagga mussels at any other water in Colorado in 2009.

The DOW has been sampling over 100 at-risk waters for aquatic invasive weeds and animals over the last five years. It was through this sampling program that zebra/quagga mussels were detected in Colorado. The state follows a three-tier sampling protocol: 1) conducting plankton tows to find the veligers, 2) deploy and check substrates to find the juvenile “settlers” or attached adult mussels, and 3) conduct surveys along the shoreline and existing structures for settled juveniles or attached adult mussels. In 2009, crews sampled 168 waters statewide on multiple occasions.

The DOW, Parks and their partners conducted 93 watercraft inspection and decontamination certification courses throughout Colorado in 2009. A total of 209 locations were authorized to perform watercraft inspection and decontamination in 2009. Of those, eight locations were containment operations at positive or suspect waters. The focus of the containment programs is to inspect watercraft leaving the lakes/reservoirs to prevent boats from moving mussels or other ANS overland from positive waters into currently uninfested areas. The other 201 authorized locations were implemented to prevent the introduction of mussels into currently uninfested waters, including boat ramps on lakes and reservoirs, and off-water locations such as at DOW offices and private industry locations. The prevention stations are operated by a variety of entities, including the DOW, Parks, Larimer County, several municipalities, marinas, concessioners, private clubs and marine dealers. The Colorado Marine Dealers Association has been an active supporter of the inspection program and a majority of their members have been state certified.

The State of Colorado and partners collectively inspected over 400,000 boats and conducted over 3,300 decontaminations in 2009. In order to guarantee quality assurance of the inspections operated by the various certified entities, the DOW implemented a Quality Assurance & Field Support Team in 2009. The team evaluated all watercraft inspection stations, certified by the DOW, to ensure that state protocol was being followed.

Throughout 2008, the DOW, Parks and other partner agencies developed a comprehensive, multifaceted, public-education campaign to inform boaters and anglers about zebra and quagga mussels and how to prevent the further spread of these harmful species and other ANS in Colorado's waterways. The cooperative effort utilized a variety of mediums, including billboards, boat ramp signage, ANS brochures and agency Web pages to convey this message.

The DOW was authorized through the State of Colorado Legislature a total of \$3,917,244 for FY 08-09. Parks was allocated \$3,289,392 by the legislature for FY 08-09. Total legislative allocation for FY08-09 for AIS prevention in Colorado was over \$7.2 million.

For FY 09-10, the DOW was appropriated \$1,304,544 and Parks was allocated \$2,701,000. Total legislative allocation for FY09-10 for AIS prevention in Colorado was over \$4 million.

Idaho

Summarized from Idaho Department of Agriculture 2010 Western Regional Panel report:

During the 2010 legislative session, a fee increase for the invasive species boat sticker passed to allow for reimbursement of a vendor fee. Fees in 2010 are \$10 for resident motorized, \$22 for nonresident motorized, and \$7 for non-motorized.

In 2010, 20 roadside inspection stations were established throughout the state for the boating season. Inspection stations operated from 7:00am to 7:00pm, 7-days a week throughout the summer months. The stations were run by a combination of Idaho Department of Agriculture (IDA) employees, contractors, and local governmental organizations. Improved compliance was due in large part to the cooperation of County Sheriff's Offices.

Locations, photographs of each site and a map of the stations can be found at:

http://www.agri.idaho.gov/Categories/Environment/InvasiveSpeciesCouncil/Inspection_Stations2010.php. To conduct inspections, more than 300 people were certified as inspectors in 2010.

Preliminary inspection results from 2010 indicate that more than 37,000 inspections were conducted at the 20 roadside inspection stations. Boaters from 49 states and Canada were inspected in Idaho. Eight fouled boats were intercepted and decontaminated during the 2010 season.

Idaho continued their highway billboard campaign on all major highways entering the state. Live read radio and radio spots were conducted in all Idaho markets, plus Logan (UT) and Spokane (WA). Inspectors distributed outreach "packets" at all inspection stations. The packets included "Zap the Zebra brochures, Idaho-specific boat sticker information, stickers and other locally important invasive species related material.

The IDA initiated an outreach campaign for oversized load haulers that bring boats through and to Idaho. The Idaho Transportation Department notifies IDA when an oversized boat is destined for Idaho, and IDA contacts the hauler directly to inform them of state laws related to transporting invasive species. Idaho also activated a real-time mapping application online for each inspection station location that allows individuals to track inspections and boat traffic and origin of inspected boats for each inspection station throughout the season.

Idaho sampled high priority waters (over 600 samples) throughout the season. Other cooperators and volunteers monitored several hundred artificial substrates statewide. Idaho Transportation Department dive teams were trained in mussel identification and inspected bridge pilings as part of routine maintenance activities.

Montana

Summarized from Montana Fish, Wildlife and Parks 2010 Western Regional Panel report:

The Inspect, Clean, Dry campaign was launched during the boating season of 2010 and is ongoing. The campaign involved billboards, paid TV, radio and print media advertisement, tailgate wraps, signage at boat ramps and Fishing Access Sites, PSAs, presentations, website and direct mailings.

The State implemented training for resource agency staff, NGO's and other groups. The trainings covered ANS identification, early detection, prevention strategies and watercraft inspection/decontamination. All state hatcheries and biologist staff are encouraged to develop and maintain HACCP plans. Training is provided when necessary.

Every major waterbody in Montana is monitored annually for aquatic invasive species. To date no zebra/quagga mussel adults or veligers have been detected within the state. Populations of New Zealand mudsnails are generally declining in both density and distribution and have yet to be found in any waters west of the divide within the state.

A hatchery ANS inspection program was developed in 2005 and is ongoing. The program requires that all state, federal and private hatcheries be inspected for any ANS within their inflow, effluent or within the hatchery. Since 2005 one commercial hatchery has tested positive for New Zealand mudsnails however, measures adopted during 2006 now ensure of New Zealand mudsnails from the facility is being prevented. Fish stomachs are analyzed annually to determine if the measures are being effective and no mudsnails were found in any of the 120 stomachs collected in 2010. One State Hatchery is currently considered positive for Eurasian watermilfoil, although no milfoil has been found on the hatchery property it was found in the hatchery water supply.

All state hatcheries are being analyzed for their vulnerability to ANS and management actions being taken to help prevent any ANS infestations in these facilities. This is an ongoing process and is being incorporated with updating and maintaining HACCP plans at each of the facilities.

Montana has established a Dreissenid Veliger Lab. The Montana lab processes the majority of plankton samples for the entire Missouri Basin.

Montana FWP operates roving watercraft inspections throughout the state. Angler/Boater surveys are conducted as part of the watercraft inspections. Montana Department of Agriculture operated roving check stations at highway entry points that inspected approximately 3000 boats and 500 ATVs over the summer. Montana Department of Agriculture established an Invasive Species Management Area for Eurasian watermilfoil with two mandatory inspection stations that inspected approximately 4000 boats.

Utah

Summarized from Idaho Department of Agriculture 2010 Western Regional Panel report:

In 2008, the Utah State Legislature made it illegal to possess or transport invasive mussels. If you have been in an infested water, you must now decontaminate your boat and equipment before entering or travelling in Utah. In addition, it is mandatory for all watercraft to complete a self-certification prior to launching in any Utah

water. Detailed information about the Utah Aquatic Invasive Species Plan and the ongoing program to combat the invasion of quagga and zebra mussels is available at: <http://www.wildlife.utah.gov>.

Utah is currently concluding the 2010 boating season therefore definitive data for 2010 AIS program activity is not yet available. During 2009, the Utah Division of Wildlife Resources and its partner agencies intercepted 300,000 pre-launch boats at 41 different waters statewide. More than 2,500 of the boats needed decontamination due to previous 30-day use on mussel affected waters, of which 15 were found to be encrusted (one or more mussels) with live quagga or zebra mussels. Ongoing early detection efforts showed no evidence of mussel veligers in 50 tested water bodies.

During the 2010 Legislative session Utah Division of Wildlife Resources was funded with \$1.35 million to carry out a statewide AIS program in FY2011. Additionally, funding partners again provided substantial funds (\$328,000) to assist. Currently 78 personnel (29.4 FTE) are assigned to the program--most are technicians (64 personnel) working at boat launch ramps--and similar interception, inspection and decontamination activity as compared to 2009 has been ongoing.

Unfortunately, a single, live adult quagga mussel was detected in Sand Hollow Reservoir during late May, 2010. Containment management immediately ensued. No further evidence of mussels, either adults or veligers, has been detected. To date, more than 6,000 watercraft have been decontaminated at just Sand Hollow Reservoir.

Plankton samples for veligers at 50+ statewide water bodies continue to show no evidence of mussel veligers, including at Red Fleet Reservoir and Electric Lake, where quagga and zebra mussel veligers, respectively, were discovered in 2008.