

Wyoming Aquatic Invasive Species 2012 Program Summary



The Wyoming Aquatic Invasive Species (AIS) program was implemented in 2010 to prevent the spread of AIS to Wyoming waters through public outreach, watercraft inspections, and monitoring.

LEGISLATION

2012 amendments to the AIS statute mandate that all conveyances (watercraft, water hauling trucks, etc.) entering Wyoming by land be inspected for AIS before contacting or entering a Wyoming water. The AIS regulation (Chapter 62) was revised and several public meetings were held in September. The revised regulation was approved by the Commission in October and signed by the Governor on January 29, 2013. In addition, check stations were authorized to be placed at Wyoming Department of Transportation Ports of Entry (POE) and rest areas.

PERSONNEL

AIS personnel in 2012 included one permanent coordinator, one 12-month At-Will Employee Contract (AWEC) program assistant, six 6-month AWEC crew leads and 28 seasonal technicians (23 general funded; 2 U.S. Forest Service funded and 3 U.S. Fish and Wildlife Service funded).



OUTREACH AND EDUCATION

The goal of AIS outreach and education is educate boaters, anglers, water recreationists, and other publics about AIS threats and prevention steps.

Outreach messaging was broadened in 2012 from “Don’t Move a Mussel” to “Drain, Clean, Dry” which encompasses all AIS and resonates with a larger audience. Six new brochures were created with the new message which focused on specific user groups (general audience, motorized boaters, non-motorized boaters, anglers, waterfowl hunters, water transportation systems) and drain, clean and dry steps.



Radio advertisements were aired throughout the season that targeted different user groups; early season (April-May) focused on boaters returning from winter/spring break and later season (June-August) focused on preparing for inspections. Traveler information signs were used on interstate highways to alert boaters of inspection stations at nearby waters. Numerous presentations were conducted and booths set-up at various venues to spread the message to a wider audience. Most of the outreach in 2012 consisted of one-on-one contacts with boaters at check stations. This is likely the most effective way to spread the messages about the AIS threat and the drain, clean, dry protocol. In 2012, more boaters were aware of the AIS issue, how to

prepare for a watercraft inspection, and what they could do on their own to reduce the threat, than in the program's first two seasons.



A boater survey was conducted to collect information from water users in Wyoming. The survey was sent to a sample of people who had purchased an AIS decal. The survey questions related to the boater's knowledge of AIS and their experience at watercraft check stations and decal purchasing. The results of this survey will be compiled in 2013 and will be used to guide future outreach.

Increasing public awareness through outreach has proven to be the best method for successful AIS prevention. Based on watercraft inspection data from 2010 to 2012, there has been a reduction in the number of boats containing standing water at check stations. In 2010, 9% of boats had standing water present compared with 5% in 2011 and only 1% in 2012. At the end of each season, inspectors are asked to fill out a survey about their experience. Two questions related to how the inspector perceived boaters understanding of Drain, Clean, Dry (DCD) as a method of preventing the spread of AIS. In 2011, 96% of inspectors felt boaters were educated compared to 88% in 2010, indicating boaters may be more educated on the principles of DCD after two years. Inspectors also saw a slight increase in the number of boats arriving DCD at check stations. In 2011, 96% of inspectors responded that boats came through the check station DCD compared to 94% in 2010. Results from inspector surveys from 2012 have not yet been analyzed for comparison to previous years.

WATERCRAFT INSPECTIONS

The goal of watercraft inspections is to intercept watercraft potentially transporting AIS and to educate boaters on AIS threats and how to prevent the spread of invasive species.

Fifteen watercraft inspection and decontamination trainings were conducted in 2012. Inspectors that had been certified in 2011 were allowed to recertify online. All others (including those certified prior to 2011) were required to retake the training. Retraining was required due to substantial changes to the watercraft inspection and decontamination protocols since the program's inception in 2010. A total of 224 individuals attended training classes in 2012. Since the program inception in 2010, 366 individuals have been certified as inspectors. Training courses have been effective at increasing knowledge of AIS inspection and decontamination practices and in certifying individuals that can assist with inspections on holiday weekends and during fishing tournaments.



Highway watercraft counts using trail cameras were conducted over several weeks in June and July at major routes of entry into the state. These cameras were set-up to count the number of watercraft entering the state and to assess traffic volume at potential 2013 border check stations. The busiest entrances were Cheyenne at Interstate 25, Alpine at US 89, and Evanston at Interstate 80. In addition to counts, a pilot study was conducted at the I-25 POE in Cheyenne and the I-90 POE in Sheridan over one weekend in August to determine the feasibility of performing inspections at a POE.

Inspections were conducted at major waters throughout the state from May 17 through September 9 to cover the peak boating season (Figure 1). Inspections consisted of either a standard inspection, high risk inspection, or drain, clean, dry exit inspection. Inspection protocol was modified in 2012 such that watercraft last used on infested water regardless of the time frame received a high risk inspection. Additionally, certain types of watercraft were assessed differently; inboard and inboard/outboard watercraft were considered higher risk because of the inability to completely drain all water out of the motor in these watercraft. As a result, any inboard or inboard/outboard watercraft used on infested water within the last 30 days received a motor flush decontamination. This increased vigilance increased the number of high risk inspections and decontaminations in 2012.

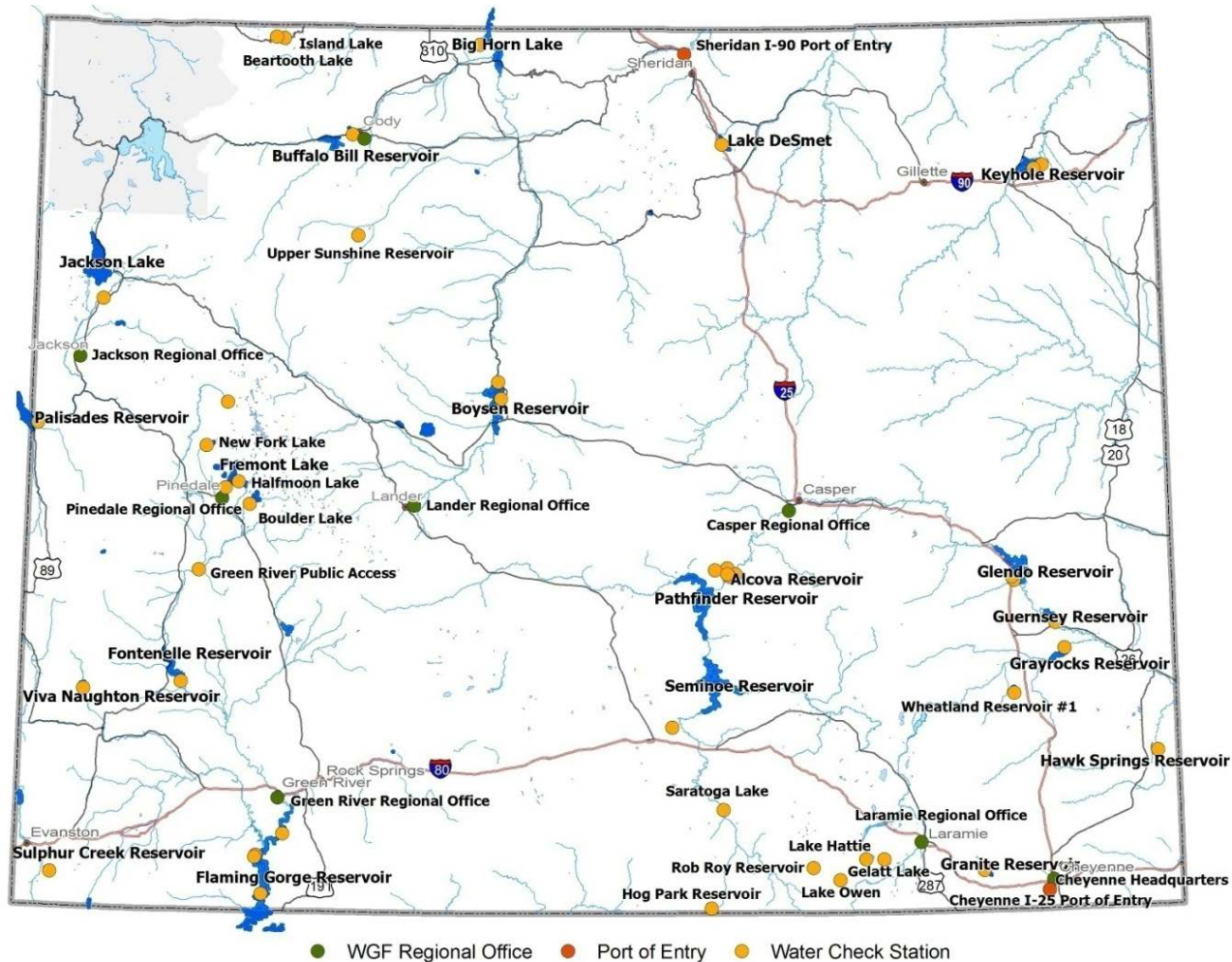


Figure 1. Location of watercraft inspection check stations operated during 2012.

A total of 38,705 inspections were conducted on 35 waters, and at eight regional offices and two POE. This included 36,612 standard inspections and 2,093 exit inspections (Table 1). A total of 19,490 unique boaters were contacted. A total of 251 high risk inspections were conducted and 104 resulted in decontamination. Ninety-seven decontaminations were a result of high risk standing water. Suspect AIS resulted in seven decontaminations. Four of those watercraft contained dead invasive mussels and were intercepted at Flaming Gorge Reservoir, Buffalo Bill Reservoir, Jackson Regional Office and the Laramie Regional Office. Since 2010, a total of 123,333 watercraft inspections have been conducted resulting in 49,764 unique boater contacts.

Table 1. Total number of inspections (standard and exit), high risk inspections, decontaminations, inspection hours, and inspection rate (inspections/hr) by watercraft check station location in 2012.

Location	Total inspections	High risk inspections	Decontaminations	Inspection hours	Inspection rate
Alcova Reservoir	2,271	7	4	937	2.4
Beartooth Lake	14	1	0	30	0.5
Big Horn Lake	2,044	5	0	866	2.4
Boulder Lake	31	0	0	144	0.1
Boysen Reservoir	1,880	3	0	1,342	1.4
Buffalo Bill Res.	3,329	23	6	1,353	2.5
Flaming Gorge Res.	3,201	17	9	2,102	1.5
Fontenelle Res.	51	0	0	228	0.2
Fremont Lake	1,379	4	0	873	1.6
Gelatt Lake	1	0	0	1	1.0
Glendo Reservoir	3,253	52	35	1,821	1.8
Granite Reservoir	958	12	1	719	1.3
Grayrocks Reservoir	997	14	8	781	1.3
Green River	20	0	0	29	0.7
Green River Lakes	15	0	0	29	0.5
Guernsey Reservoir	871	9	2	619	1.4
Halfmoon Lake	22	0	0	75	0.3
Hawk Springs Res.	479	7	1	539	0.9
Hog Park Reservoir	6	0	0	10	0.6
Island Lake	1	1	0	----	----
Jackson Lake	8,414	15	7	1,461	5.8
Keyhole Reservoir	3,306	28	11	1,509	2.2
Lake DeSmet	1,763	9	1	796	2.2
Lake Hattie	16	0	0	43	0.4
Lake Owen	3	0	0	11	0.3
New Fork Lakes	77	0	0	161	0.5
Palisades Reservoir	2,545	2	0	791	3.2
Pathfinder Res.	752	0	0	471	1.6
Rob Roy Reservoir	13	0	0	32	0.4
Saratoga Lake	2	0	0	20	0.1
Seminole Reservoir	506	9	5	663	0.8
Sulphur Creek Res.	43	0	0	161	1.2
Upper Sunshine Res.	191	0	0	144	0.3
Viva Naughton Res.	47	1	0	113	0.1
Wheatland #1 Res.	16	0	0	19	0.8
Casper WGF Office	10	6	1	4	4.3
Cheyenne HQ	2	1	0	----	----
Cody GF Office	2	2	0	----	----
Green River Office	29	3	3	30	1.0
Jackson WGF Office	8	8	4	9	0.9
Lander WGF Office	2	2	2	4	2.0
Laramie WGF Office	2	2	1	4	2.3
Pinedale WGF Office	2	1	0	1	2.0
POE - I-25 Cheyenne	73	7	3	100	0.7
POE- I-90 Sheridan	58	0	0	99	0.6
TOTAL	38,705	251	104	19,144	2.0

The greatest numbers of inspections were conducted at Jackson Lake followed by Buffalo Bill Reservoir and Keyhole Reservoir (Figure 2). A total of 19,144 hours were spent conducting watercraft inspections. There were fewer technicians available to conduct inspections in 2012 than previous years and as a result efforts shifted to the highest risk waters (those waters that see the highest use overall and the highest use from out of state traffic). The program also re-distributed technicians from certain sites that have shown to not require as much staffing. Therefore, there was a slightly higher inspection rate (inspections/hour) than the previous two years (2.0 inspections per technician hour versus 1.9 in 2011 and 1.8 in 2010). Inspection rate was greatest at Jackson Lake and Palisades Reservoir in 2012 (Table 1). The busiest hour of inspection activity occurred from 11:00am to 12:00pm at all waters. Inspection hours were greatest at Flaming Gorge Reservoir (2,102 hours), where inspectors typically covered multiple boat ramps each inspection day. The greatest numbers of inspections (4,407) were conducted over the July 4th holiday weekend (Figure 3). As in previous years, watercraft inspections increased with the highest number in early July and then tapered off for the season with a second smaller peak over Labor Day weekend (Figure 3).

Watercraft seals were applied to 1,201 watercraft after a drain, clean, and dry exit inspection and 752 watercraft seals were removed in 2012. Of those seals removed from watercraft, the most had been issued

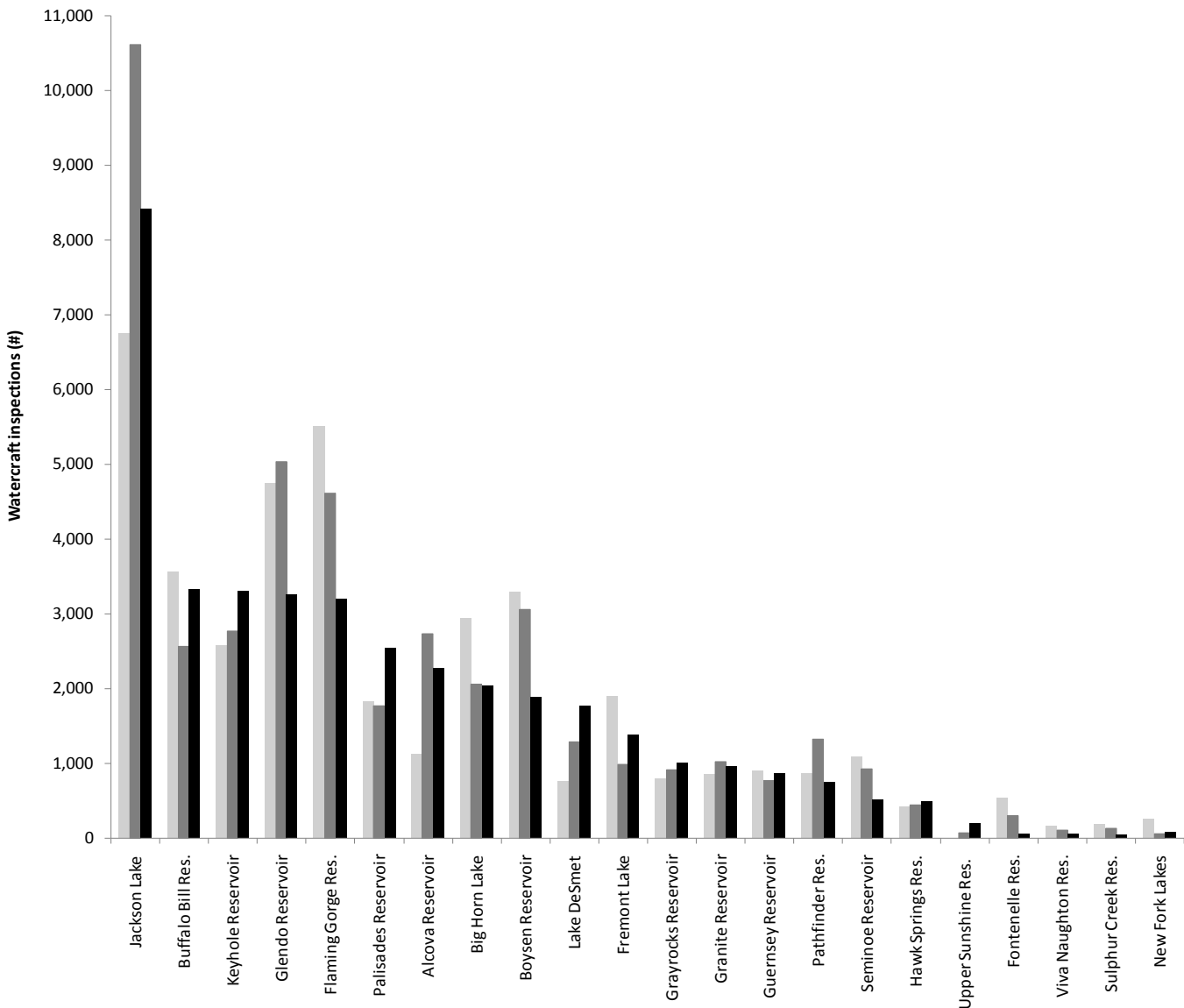


Figure 2. Total watercraft inspections during 2010 (light gray), 2011 (dark gray), and 2012 (black). Waters with fewer than 50 inspections are not included in the graph.

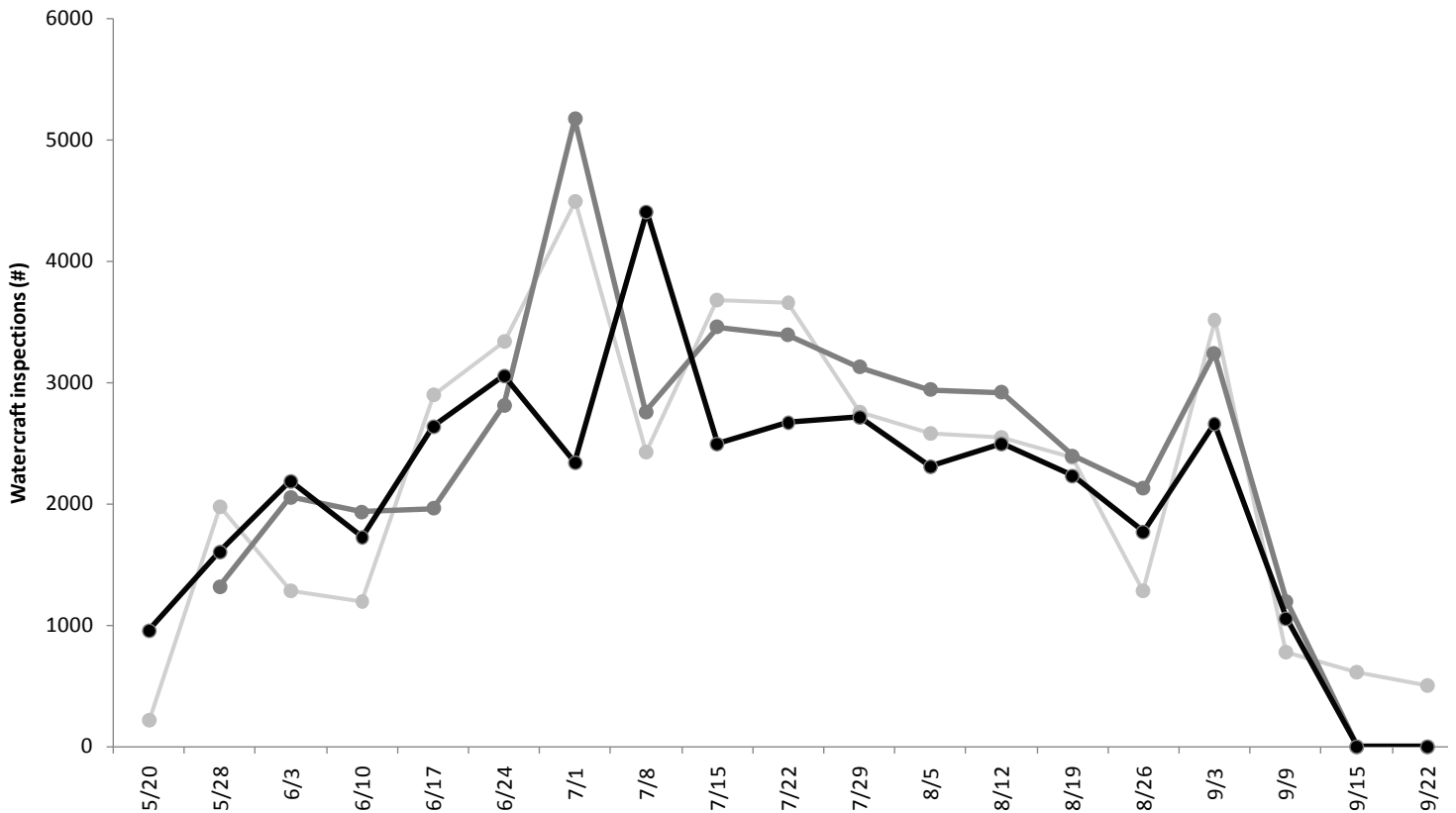


Figure 3. Weekly watercraft inspection totals for all waters during 2010 (light gray), 2011 (dark gray), and 2012(black).

An estimated 24.6% of inspections were conducted on nonresident watercraft from 48 different states and Canada. The greatest numbers of nonresident watercraft were from Colorado, Utah, Idaho and Montana (Figure 4). Of all the registered watercraft inspected in 2012, 61.2% were inspected one-time, while 38.8% were inspected more than one time during the season. Of those repeat boaters, most were inspected 2 times; the most was one Wyoming registered watercraft that was inspected 24 different times during the season. The majority of watercraft at the inspection station were motorized (74.5%) compared to just over one-quarter non-motorized use (25.5%). The majority of motorized watercraft were outboard (45.3%), followed by inboard/outboard (37.0%), personal watercraft (10.8%) and inboard (7.0%).

As part of every standard inspection, boaters are asked where they had last used their watercraft. The most common response from boaters was the Snake River (10.4%) followed by Keyhole Reservoir, WY (8.4%), Flaming Gorge Reservoir, WY (8.4%), Glendo Reservoir, WY (7.5%) and Alcova Reservoir, WY (6.2%). Boaters indicated they had been to 660 different waters in 40 states, Canada and Mexico. Aside from Wyoming (90%), Colorado (3.4%), Montana (1.8%), Idaho (1.6%) and Utah (1.1%) received the highest visitation. Of the waters last visited, 36 are infested with invasive mussels. Overall, 10.0% of watercraft inspected were last used out of state. Of the watercraft inspected, the majority (86.1%) had launched on another water within 30 days of visiting the check station.

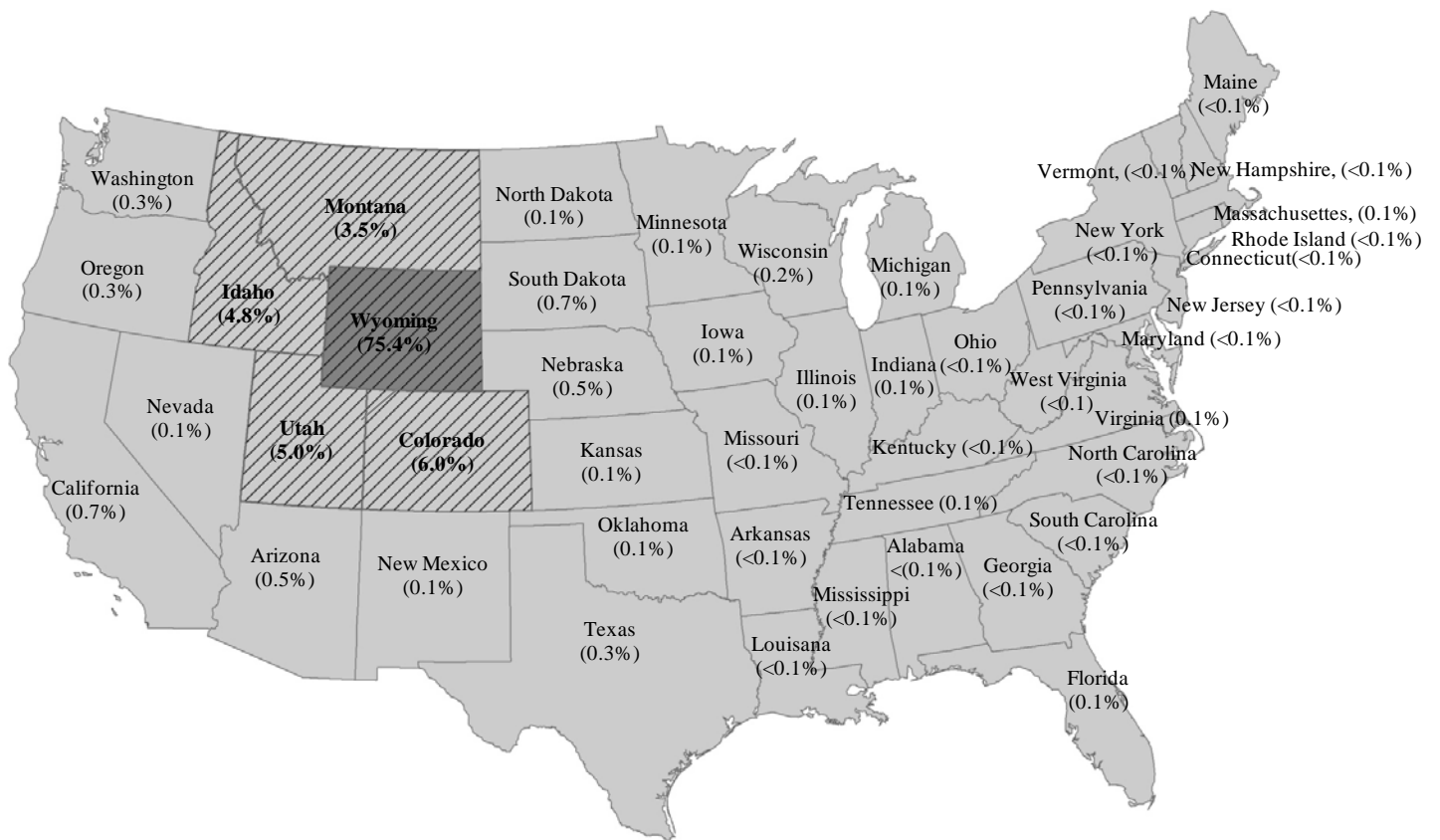


Figure 4. Map indicating state of registration for watercraft or trailer (state and percent of total) inspected in Wyoming in 2012. Watercraft were also registered in Alaska (<0.1%); not pictured. States constituting > 3.0% of total are highlighted.

MONITORING

Monitoring of waters is critical for early detection of invasive mussels and other AIS, and facilitates use of containment strategies if a water becomes infested. Monitoring consists of sampling for larval (veliger), juvenile, and adult mussels, crayfish, clams, snails, aquatic plants, and water quality (temperature, pH, dissolved oxygen, conductivity, water clarity, calcium and hardness). Sampling effort was expanded in 2012 to determine distribution of existing populations of New Zealand mudsnail and curly pondweed.



A total of 63 waters were sampled for AIS in 2012 (Figure 5). Analysis of plankton tows and substrate samples from all waters found no presence of mussels. New Zealand mudsnail were confirmed in the Bighorn River and in Polecat Creek (Jackson Region). Surveys also confirmed curly pondweed in Lake DeSmet and found additional populations in the North Platte River at the Miracle Mile and in New Fork Lake. Asian clam had previously been found in the Laramie River upstream of Grayrocks Reservoir. However, surveys in 2012 did not find the species in Grayrocks Reservoir. One dried Asian clam shell was found near the boat ramp at Hog Park Reservoir. Surveys in 2013 will attempt to confirm whether a population is present in this watershed.

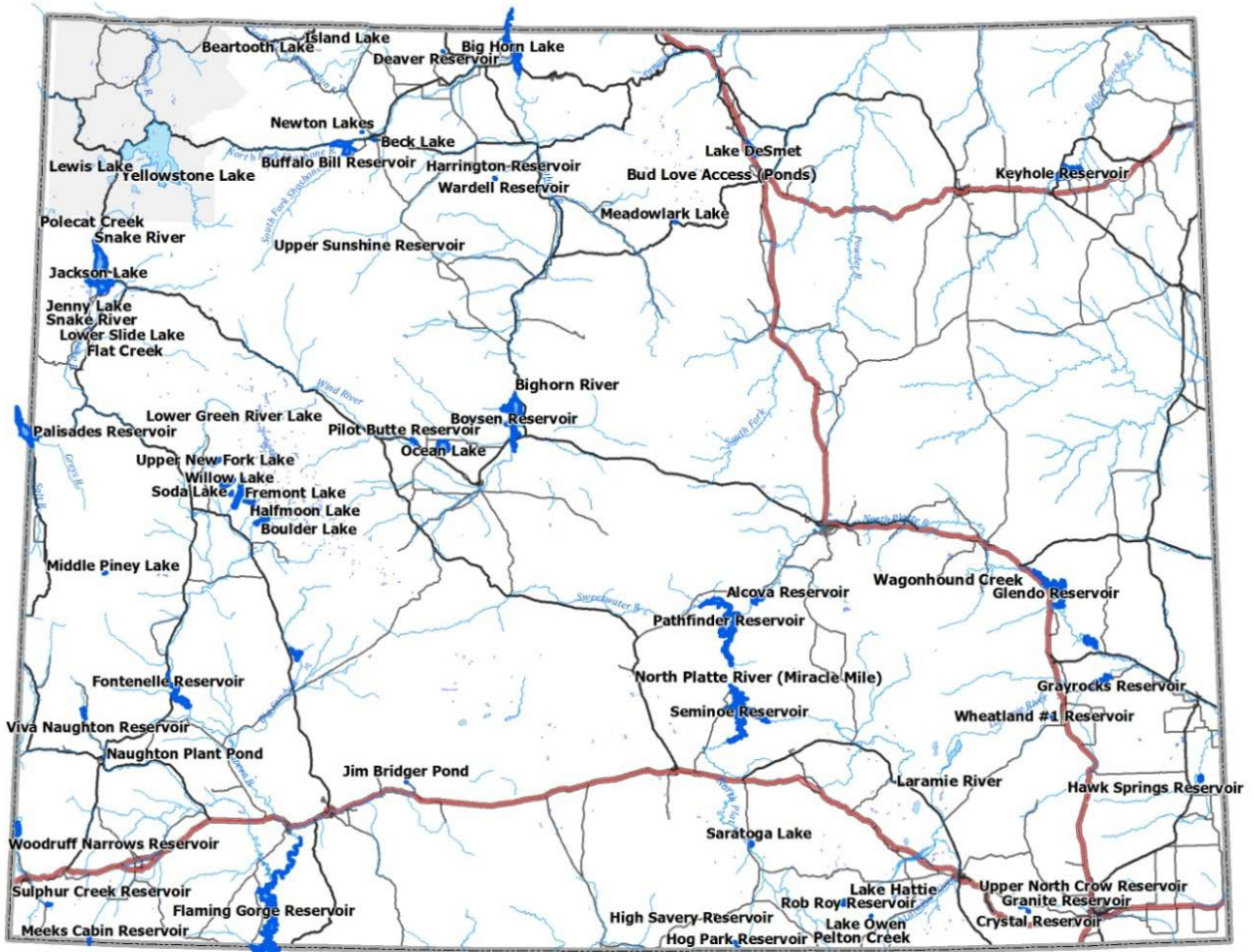


Figure 5. Map of waters surveyed for aquatic invasive species during 2012.

DECAL

In calendar year 2012, a total of 39,456 decals were sold resulting in receipt of \$486,725 (Table 2). Approximately 86% of all watercraft registered in Wyoming purchased a decal. Since decal sales began in 2010, a total of 108,771 decals have been sold resulting in sales of \$1,369,895.

Table 2. Type, count, and monies generated from AIS decals sold in 2012.

Decal type	Count			Sales		
	2010	2011	2012	2010	2011	2012
Resident	20,675	19,913	21,612	\$206,750	\$199,130	\$216,120
Motorized						
Resident	6,505	6,732	8,359	\$32,525	\$33,660	\$41,795
Non-motorized						
Nonresident	5,755	5,252	5,769	\$172,650	\$157,560	\$173,070
Motorized						
Nonresident	2,521	2,872	3,716	\$37,815	\$43,080	\$55,740
Non-motorized						
TOTAL	34,546	34,769	39,456	\$449,740	\$433,430	\$486,725