

**AQUATIC INVASIVE SPECIES PROGRAM
UTAH DIVISION OF WILDLIFE RESOURCES**

NORTHERN REGION SUMMARY

(January 1 thru December 31, 2012)

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General

The new Utah Division of State Parks and Recreation (SP&R) contract for aquatic invasive species (AIS) management has proven to be a success. Implementation shows that the number of boats interdicted (inspections, boater AIS education and decontaminations when needed) has increased. Also, compliance with the required Decontamination Certification Form has increased, too. SP&R has a distinct visibility advantage at the state parks, since personnel are present during all hours of operation, making pre-launch AIS contacts. The public is acutely aware of the State of Utah's AIS program, and they expect to be contacted by Department of Natural Resources employees, regardless of whether or not the representative is with Utah Division of Wildlife Resources (UDWR) or SP&R.

Region-wide Operations

One Biologist I position was funded for 12 months by UDWR (\$71,350) to manage the regional AIS Program and to supervise the Wildlife Technician II position and some of the Wildlife Technician I positions. Additionally, the Biologist coordinated multiple state parks in their implementation of the Utah Aquatic Invasive Species Management Plan (Plan).

One Wildlife Technician II position was funded for 6 months by UDWR (\$24,382) to supervise some of the Wildlife Technician I positions and to rove between regional waters as needed.

Multiple Wildlife Technician I positions and Lead Ranger Aides performed AIS duties at individual water bodies or state parks during the highest boating periods.

In summary the following was accomplished by AIS staff in the region performing for UDWR, SP&R or their partners:

- 58,351 boats were interdicted pre-launch and inspected.
- 130,706 folks (estimated) while boating, which includes the boat operator and those who accompanied them, were educated about:
 - (1) Risks from quagga and zebra mussels; and
 - (2) How to self-decontaminate the boat.

Note: The estimated numbers of people educated are based upon boater contacts made in the Southern Region (20,876) and Northeastern Region (15,748), which

documented the number of folks who accompanied a boat (57,560 in the Southern Region and 26,944 in Northeastern Region) and who were also educated about AIS risks and boat decontamination protocols, particularly the Clean, Drain & Dry method. So, this data shows 1.71 (Northeastern Region) to 2.76 folks per boat (Southern Region) via actual count were educated. Thus, on average 2.24 folks per boat (N = 84,504) are anticipated to be educated during a boater contact.

- 23 boats were professionally decontaminated due to their stated use in the prior 30 days on a quagga, zebra or false dark mussel affected water body.
- 2 boats were discovered to be encrusted with quagga mussels as follows:
 - 1 at East Canyon Reservoir; the mussel was dead and originated from Rye Patch Reservoir, NV.
 - 1 destined for Pineview Reservoir (quarantined at owners home); the mussel was dead and originated from Lake Mead, NV.
- Law Enforcement personnel from UDWR, SP&R or their partners made thousands of contacts to enforce Rule R657-60. These contacts are not included in the region or statewide totals, but stand alone. Most of the contacts were outreach oriented, although many involved issuance of a non-compliance notice, and a few written “warning” or “notice to appear in court” citations were issued. Compliance rates are considered to be good and improving.
 - An Administrative Checkpoint (5 hours of operation) was conducted on Saturday, 14 July 2012 at Rockport State Park. Operations intercepted 22 pre-launch boats; one was decontaminated, and none were encrusted with Dreissena mussels. No AIS violations or other code (wildlife or traffic) violations were discovered.
 - An Administrative Checkpoint (5 hours of operation) was conducted on Sunday, 05 August 2012 at the Echo Port of Entry along I-80. Operations intercepted 131 boats; one was decontaminated, and none were encrusted with Dreissena mussels. No AIS violations were discovered, however 26 other wildlife code or traffic code violations were handled.
- Watercraft Inspection and Decontamination Training (WIT) as either level I or level II occurred for all DWR Technician I & II positions and all SP&R employees involved with AIS boat inspections at state parks within the region.
- AIS Biologist conducted AIS presence/absence inspections at State Fish Hatcheries and at origination and destination sites for wild fish transfers to minimize inadvertent spread of AIS through routine wildlife management practices.

Northern Region Water-By-Water Reports (listed in alphabetical order)

Bear Lake, East Canyon Reservoir, Hyrum Reservoir, multi-reservoir complex 1 (Causey, Echo, Lost Creek and Smith & Morehouse reservoirs), multi-reservoir complex 2 (Cutler, Mantua and Newton reservoirs), Pineview Reservoir, Rockport Reservoir and Willard Bay Reservoir

Bear Lake State Park (Utah)

- The Bear Lake budget was \$5,295 and AIS personnel performed for 3.11 months (Memorial Day thru Labor Day) or 0.26 FTE as follows:
 - Contracted SP&R to implement the Plan.
- 1 trailer-mounted decontamination unit is stationed at Utah's Bear Lake State Park.
- 12,927 boats were interdicted, inspected as needed, and educated about AIS.
- 1 boat was decontaminated due to its stated use within the prior 30 days on a quagga, zebra or false dark mussel affected water body; it came from Lake Mead.
 - No boats were encrusted with invasive mussels.
- Boater History of Last Water Visited (N = 100 interviews)
 - a. Top 6 Last Waters Visited
 1. Bear Lake = 61 (61%)
 2. Willard = 7
 3. Lake Powel = 4
 4. Pineview = 4
 5. Flaming Gorge = 3
 6. Jordanelle = 3
- Plankton samples for presence/absence of *Dreissena veligers* were sent to the Bureau of Reclamation's microscopy lab in Denver, CO; all were found to be negative.
- Regional Conservation Officers and State Park Rangers assisted with the interdiction, inspection and education of boaters during their routine boater/angler checks. Written warnings citations were given to boaters that were non-compliant with the self-certification process. No "Notice to Appear" in court citations was issued.

Bear Lake State Park (Idaho)

- AIS work conducted by Idaho State Parks.
- 1 decontamination unit is stationed at Idaho's Bear Lake State Park.
- 1,327 boats were interdicted pre-launch, inspected as needed, and educated about AIS.
- No boats were decontaminated due to their stated use in the prior 30 days on a quagga, zebra or false dark mussel affected water body.
- Idaho Parks and Recreation staff working under agreement with the Idaho Department of Agriculture enforced AIS laws. No written warnings citations were given to boaters and no "Notice to Appear" in court citations was issued.

East Canyon State Park

- East Canyon Reservoir budget was \$5,295 and AIS personnel performed for 3.11 months (Memorial Day thru Labor Day) or 0.26 FTE as follows:
 - Contracted SP&R to implement the Plan.
- 1 trailer-mounted decontamination unit is stationed at the State Park.
- 3,245 boats were interdicted, inspected as needed, and educated about AIS.

- 9 boats were decontaminated due to their prior 30 day use history as follows: unknown history or rental (4), Lake Mead (3), Lake Havasu (1), and Rye Patch Reservoir (1).
 - 1 boat was encrusted with quagga or zebra mussels as follows: it contained a single shell (one valve) and other broken pieces from an adult quagga mussel and an Asian Clam. Its owner indicated that it was last used on Rye Patch Reservoir, NV. This boat was professionally decontaminated.
- Boater History of Last Water Visited (N = 118 interviews)
 - a. Top 7 Last Waters Visited
 1. East Canyon = 48 (41%)
 2. Willard = 14
 3. Pineview = 8
 4. Lake Powel = 7
 5. Utah Lake = 7
 6. Jordanelle = 5
 7. Bear Lake = 5
- Plankton samples for presence/absence of *Dreissena veligers* were sent to the Bureau of Reclamation's microscopy lab in Denver, CO; all were found to be negative.
- Regional Conservation Officers and State Park Rangers assisted with the interdiction, inspection and education of boaters during their routine boater/angler checks. Written warnings citations were given to boaters that were non-compliant with the self-certification process. No "Notice to Appear" in court citations was issued.

Hyrum Reservoir State Park

- Hyrum Reservoir budget was \$5,295 and AIS personnel performed for 3.11 months (Memorial Day thru Labor Day) or 0.26 FTE as follows:
 - Contracted SP&R to implement the Plan.
- 1 trailer-mounted decontamination unit is stationed at the State Park.
- 3,499 boats were interdicted, inspected as needed, and educated about AIS.
- 3 boats were decontaminated due to their stated use within the prior 30 days on a quagga, zebra or false dark mussel affected water body: 1 from Tennessee as per the owner's request; 1 from Sand Hollow; and 1 rented boat with an unknown use history.
 - No boats were encrusted with quagga or zebra mussels.
- Boater History of Last Water Visited (N = 37 interviews)
 - a. Top 5 Last Waters Visited
 1. Hyrum = 23 (62%)
 2. Willard = 3
 3. Bear Lake = 3
 4. Cutler = 3
 8. Newton = 2
- Plankton samples for presence/absence of *Dreissena veligers* were sent to the Bureau of Reclamation's microscopy lab in Denver, CO; all were found to be negative.

- Regional Conservation Officers and State Park Rangers assisted with the interdiction, inspection and education of boaters during their routine boater/angler checks. Written warnings citations were given to boaters that were non-compliant with the self-certification process. No “Notice to Appear” in court citations was issued.

Multi-reservoir complex 1 (Causey, Echo, Lost Creek and Smith & Morehouse reservoirs)

- This reservoir complex’s budget was \$24,382 and AIS personnel performed for 6.0 months (May thru October) or 0.50 FTE.
 - UDWR implemented the plan.

Note: This roving Technician II, employed by UDWR (cost reported earlier), supervised some of the Technician I positions at other water bodies, prioritizing his individual effort per water body based upon boat use. Thus, Echo followed by Lost Creek, Smith & Morehouse and Causey received his respective attention.
- One \$13,400 decontamination unit is stationed at the Ogden office for dispatch to a reservoir as needed and to conduct decontamination of UDWR equipment and public boats who request service at the office.
- Approximately 1,500 boats were interdicted, inspected as needed, and educated about AIS.
- One professional boat decontamination occurred at the Echo Port-of-entry. The boat was coming from a Dreissena affected water body in Wisconsin.
 - No boats were encrusted with quagga, zebra or false dark mussels.
- Boater History of Last Water Visited:

Note: Surveys for the given water bodies did not total sufficient data for analysis.
- Plankton samples for presence/absence of *Dreissena* veligers were sent to the Bureau of Reclamation’s microscopy lab in Denver, CO; all were found to be negative.
- Regional Conservation Officers and State Park Rangers assisted with the interdiction, inspection and education of boaters during their routine boater/angler checks. Written warnings citations were given to boaters that were non-compliant with the self-certification process. No “Notice to Appear” in court citations was issued.

Multi-reservoir complex 2 (Cutler, Mantua and Newton reservoirs)

- This reservoir complex’s budget was \$11,402 and AIS personnel performed for 3.11 months (Memorial Day thru Labor Day) or 0.26 FTE.
 - UDWR implemented the plan.

Note: This roving Technician I, employed by UDWR, prioritized his individual effort per water body based upon boat use. Thus, Mantua followed by Newton and Cutler received respective attention.
- One \$13,400 decontamination unit is stationed at the Ogden office for dispatch to a reservoir as needed (reported earlier) and to conduct decontamination of UDWR equipment and public boats who request service at the office.
- Boat interdictions:

- 378 boats were interdicted, inspected as needed, and educated about AIS at Mantua.
- 105 boats were interdicted, inspected as needed, and educated about AIS at Newton.
- 26 boats were interdicted, inspected as needed, and educated about AIS at Cutler.
- No boats were professionally decontaminated.
 - No boats were encrusted with quagga or zebra mussels.
- Boater History of Last Water Visited:
Note: Surveys for the given water bodies did not total sufficient data for analysis.
- Plankton samples for presence/absence of *Dreissena veligers* were sent to the Bureau of Reclamation's microscopy lab in Denver, CO; all were found to be negative.
- Regional Conservation Officers and State Park Rangers assisted with the interdiction, inspection and education of boaters during their routine boater/angler checks. Written warnings citations were given to boaters that were non-compliant with the self-certification process. No "Notice to Appear" in court citations was issued.

Pineview Reservoir

- Pineview Reservoir budget was \$33,180 and AIS personnel performed for 9.33 months or 0.778 FTE as follows:
 - UDWR implemented the plan as follows:
 - 2 UDWR funded Technician I positions; 6.22 months (3.11 each— Memorial Day thru Labor Day);
 - 1 US Forest Service funded Technician I position; 3.11 months— Memorial Day thru Labor Day).
- Two \$13,400 decontamination units--one purchased with USFS funds (Port ramp) and the other purchased with UDWR funds (Cemetery Point ramp)—are assigned at Pineview.
- 8,500 boats were interdicted, inspected as needed, and educated about AIS.
- 7 boats were professionally decontaminated due to:
 - a. Owner request prior to travel to Washington state (1)
 - b. Prior use in an unknown California water body (2)
 - c. Prior use in Lake Geneva, WI (1)
 - d. Dirty boat (covered in algae from Blackfoot Reservoir in ID) (1)
 - e. Prior use in an affected water in CO (1)
 - f. One quagga encrusted boat from Lake Mead and destined for Pineview was interdicted as a result of a communication from Nevada Department of Wildlife. This boat was quarantined at the owner's home in Ogden and professionally decontaminated twice prior to launching.
- Boater History of Last Water Visited and Next Destination (N = 304 interviews)
 - a. Top 6 Last Water Visited
 1. Pineview = 162 (53%)
 2. Willard = 40

3. Lake Powel = 18
 4. East Canyon = 14
 5. Utah Lake = 14
 6. Bear Lake = 13
- Plankton samples for presence/absence of *Dreissena veligers* were sent to the Bureau of Reclamation's microscopy lab in Denver, CO; all were found to be negative.
 - Regional Conservation Officers and State Park Rangers assisted with the interdiction, inspection and education of boaters during their routine boater/angler checks. Written warnings citations were given to boaters that were non-compliant with the self-certification process. No "Notice to Appear" in court citations was issued.

Rockport State Park

- Rockport Reservoir budget was \$5,295 and AIS personnel performed for 3.11 months (Memorial Day thru Labor Day) or 0.26 FTE as follows:
 - Contracted SP&R to implement the Plan.
- One \$13,400 decontamination unit purchased with UDWR funds was transferred to SP&R in 2012.
- 6,619 boats were interdicted, inspected as needed, and educated about AIS.
- 2 boats were professionally decontaminated due to an unknown use history (1), and residual standing water from Minnesota (1).
 - No boats were encrusted with quagga or zebra mussels.
- Boater History of Last Water Visited and Next Destination (N =113 interviews)
 - a. Top 5 Last Water Visited
 1. Rockport = 44 (39%)
 2. Jordanelle = 17
 3. Lake Powell = 6
 4. Pineview = 5
 9. East Canyon = 5
- Plankton samples for presence/absence of *Dreissena veligers* were sent to the Bureau of Reclamation's microscopy lab in Denver, CO; all were found to be negative.
- Regional Conservation Officers and State Park Rangers assisted with the interdiction, inspection and education of boaters during their routine boater/angler checks. Written warnings citations were given to boaters that were non-compliant with the self-certification process. No "Notice to Appear" in court citations was issued.

Willard Bay State Park

- The budget was \$5,295 and AIS personnel performed for 3.11 months (Memorial Day thru Labor Day) or 0.26 FTE as follows:
 - Contracted SP&R to implement the Plan.
- One \$13,400 decontamination unit purchased with UDWR funds was transferred to SP&R in 2012.
- 21,552 boats were interdicted, inspected as needed, and educated about AIS.

- a. 5 boats were professionally decontaminated due to their prior 30-day use history as follows: Sand Hollow (2), Lake Mead (1), Lake Mohave (1), and unknown California water body (1).
 - o No boats were encrusted with quagga or zebra mussels.
- Boater History of Last Water Visited (N = 216 interviews)
 - Top 5 Last Water Visited
 1. Willard Bay = 188 (82%)
 2. Pineview = 10
 3. Bear Lake = 5
 4. Mantua = 4
 10. Strawberry, Lake Powell, S. Hollow = 3
- Plankton samples for presence/absence of *Dreissena* veligers were sent to the Bureau of Reclamation's microscopy lab in Denver, CO; all were found to be negative.
- Regional Conservation Officers and State Park Rangers assisted with the interdiction, inspection and education of boaters during their routine boater/angler checks. Written warnings citations were given to boaters that were non-compliant with the self-certification process. No "Notice to Appear" in court citations was issued.

Work Completed on Other Non-Dreissena AIS

- **Non-Dreissena AIS sampling and work conducted throughout the Northern Region**
 - o AIS presence/absence surveys were completed on Kamas Fish Hatchery in the spring head, raceways, side channel, hatchery building, sloughs, overflows, effluent stream, and confluence with Beaver Creek. Sampling was conducted October 16th 2012 by AIS biologist and hatchery technician at Nad 83 UTM: 12T 480469, 4497017. No AIS were found.
 - o AIS presence/absence surveys were completed on Mantua Fish Hatchery in the spring head, raceways, side channel, slough, hatchery building, and effluent stream. Sampling was conducted October 18th 2012 starting at Nad 83 UTM: 12T 422641, 4593234 by AIS Biologist. No AIS were found.
 - o AIS presence/absence surveys completed on Willow Pond near Rosette, UT. Sampling was conducted on June 6th, 2012 by AIS biologist and technicians at Nad 83 UTM: 12T 270834, 4601013. No AIS were found.
 - o AIS presence/absence surveys completed at Keg Springs on the Grouse Creek Range. Sampling was conducted on July 17th, 2012 by AIS biologist and technician at Nad 83 UTM: 12T 267475, 4607290. No AIS were found
 - o AIS presence/absence surveys completed at Stoddard Slough (UDWR property) on October 16th, 2012 by AIS biologist at Nad 83 UTM: 12T 439949, 4546098. New Zealand Mud Snails (NZMS) were found in high densities, sent for a second opinion, and confirmed **POSITIVE** as NZMS by George Oliver.
 - o AIS presence/absence surveys completed at Red Knolls pond and trough in the Grouse Creek Range on May 8th, 2012 by AIS biologist and

technicians at Nad 83 UTM: 12T 262735, 4617004. New Zealand Mud Snails were found in high densities in the trough, but not in the nearby pond. The snails were confirmed by George Oliver via ocular examination. In early June, 2012 the pond was sampled for presence of NZMS eDNA and sent to Pisces Molecular in Colorado. The results came back **POSITIVE** for the presence of NZMS eDNA. The trough was treated to kill NZMS with Quaternary Ammonium compound (sparquat) the same day the eDNA sample was obtained.

- AIS presence/absence surveys completed at Rosebud ponds near Rosette, UT on May 8th, 2012 by AIS biologist and Aquatics assistant manager at Nad 83 UTM: 12T 282674, 4608201. No AIS were found.
- AIS presence/absence surveys completed at Lucine Springs near the Grouse Creek junction on May 8th, 2012 by AIS biologist and Aquatics assistant manager at Nad 83 UTM: 12T 257234 4581162. No AIS were found.
- AIS presence/absence surveys completed at Salt Creek Springs on Sept 28th, 2012 by AIS biologist at Nad 83 UTM: 12T 397845, 4618375. New Zealand Mud Snails were found, sent for a second opinion, and confirmed **POSITIVE** as NZMS by George Oliver. Snails were also sent to Pisces Molecular in Colorado for PCR confirmation. The results were also **POSITIVE**.
- AIS presence/absence surveys completed at Bettridge Creek in the Pilot range on May 8th, 2012 by AIS biologist and Aquatics assistant manager at Nad 83 UTM: 11T 751810, 4548860. No AIS were found.
- AIS presence/absence surveys completed at Johnson Creek near the temporary fish barrier in the Raft River range on May 8th, 2012 by AIS biologist and Aquatics assistant manager at Nad 83 UTM: 12T 289106, 4640171. No AIS were found.
- AIS presence/absence surveys completed at Teal Spring west of Snowville, UT on August 27th, 2012 by AIS biologist and Aquatics assistant manager at Nad 83 UTM: 12 T 340077, 4618098. No AIS were found.
- AIS presence/absence surveys completed at Bar M Spring west of Snowville, UT on August 27th, 2012 by AIS biologist and Aquatics assistant manager at Nad 83 UTM: 12T 340141, 4619306. No AIS were found.
- AIS presence/absence surveys completed at Baker Spring west of Snowville, UT on August 27th, 2012 by AIS biologist and Aquatics assistant manager at Nad 83 UTM: 12T 339714 , 4620224. No AIS were found.
- AIS presence/absence surveys completed at West Locomotive Spring on August 27th, 2012 by AIS biologist and Aquatics assistant manager at Nad 83 UTM: 12T 339220, 4620701. No AIS were found.
- AIS presence/absence surveys completed while sampling Fat Whorled Pond Snail at Shotgun Spring near ATK on November 15th, 2012 by AIS biologist, Natives biologist at Nad 83 UTM: 12T 381982, 4609549. New

Zealand Mud Snails were present and known to be present from past sampling. No other AIS were found.

- AIS presence/absence surveys completed while sampling Fat Whorled Pond Snail at Pipe Spring near ATK on November, 15th, 2012 by AIS biologist and Natives biologist at Nad 83 UTM: 12T 382119, 4609585. No AIS were found.
- AIS presence/absence surveys completed while sampling Fat Whorled Pond Snail at Fish Spring near ATK on November, 15th, 2012 by AIS biologist and Natives biologist at Nad 83 UTM: 12T 385071, 4608042. New Zealand Mud Snails were present and known to be present from past sampling. No other AIS were found.
- AIS presence/absence surveys completed while sampling Fat Whorled Pond Snail at Horse Spring “A” near ATK on November, 15th, 2012 by AIS biologist and Natives biologist at Nad 83 UTM: 12T 385794, 4607723. New Zealand Mud Snails were present and known to be present from past sampling. No other AIS were found.
- AIS presence/absence surveys completed while sampling Fat Whorled Pond Snail at Horse Spring “B” near ATK on November, 15th, 2012 by AIS biologist and Natives biologist at Nad 83 UTM: 12T 385583, 4607831. New Zealand Mud Snails were present and known to be present from past sampling. No other AIS were found.
- AIS presence/absence surveys completed on the Weber River (Section 2: Mouth of the canyon down to Slaterville diversion) around US 89 Bridge foundations/concrete, substrate, woody debris, and upstream / downstream of bridge on September 20th, 2012 by AIS biologist and technicians at Nad 83 UTM: 12T 423484, 4554088. No AIS were found.
- AIS presence/absence surveys completed on the Weber River (Section 7: Between Echo and Rockport Reservoirs) on September 20th, 2012 by AIS biologist and technicians at Nad 83 UTM: 12T 466183, 4518072. No AIS were found.
- AIS presence/absence surveys completed on the Weber River (Section 8: Above Rockport Reservoir) on September 20th, 2012 by AIS biologist and technicians at Nad 83 UTM: 12T 468439, 4511572. No AIS were found.
- AIS presence /absence surveys completed at Causey Reservoir on September 20th, 2012 by AIS biologist and technician at Nad 83 UTM: 12T 451562, 4573245. Inlets, substrate, and dam were inspected. No AIS were found.
- AIS presence/ absence surveys completed at Echo Reservoir on September 20th, 2012 by AIS biologist and technicians at Nad 83 UTM: 12T 465416, 4533970. No AIS were found.
- AIS presence/absence surveys completed at East Canyon Creek in Thurston’s Walk-in-Access property on September 20th, 2012 by AIS biologist and technician at Nad 83 UTM: 12T 440058, 4544931. No AIS were found.

END