

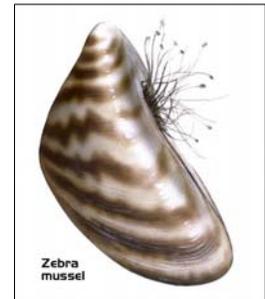


## **State Aquatic Nuisance Species (ANS) Program Summary for Colorado Legislators per SB 08-226**

**Colorado Division of Wildlife and Colorado State Parks  
January 2011**

### **Background**

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. Zebra mussels, and their close relatives quagga mussels, are highly invasive aquatic species that negatively impact plankton communities, fisheries, water based recreation, and water supply and distribution systems for municipal, industrial and agricultural supply.



The State Aquatic Nuisance Species (ANS) Act was passed by the General Assembly in May 2008. The Act defines ANS as exotic or nonnative aquatic wildlife or any plant species that have been determined to pose a significant threat to the aquatic resources or water infrastructure of the state. It makes it illegal to possess, import, export, ship, transport, release, plant, place, or cause an ANS to be released. 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 rules set the standard for watercraft inspection, decontamination, impoundment, sampling, monitoring, identification and reporting.

The DOW internally reallocated resources to create a fulltime position to coordinate Invasive Species activities statewide beginning July 1, 2008. The Invasive Species Coordinator oversees implementation of the State Zebra and Quagga Mussel Management Plan (ZQM Plan). The backbone of the ZQM Plan includes containment and prevention through watercraft inspection and decontamination, sampling and monitoring, education/outreach, communications and information, and applied research. The DOW provides ANS support to all waters of the state, and to all inspection stations, regardless of jurisdiction. Services provided by the DOW include site-specific planning, training/certification, watercraft inspection and decontamination, law enforcement support, educational materials, workshops and

conferences, sampling/monitoring, ANS identification, cost-share opportunities and Motorboat Colorado Grants for decontamination units.

In February 2009, Parks hired a full-time position to coordinate the Parks ANS program and train staff in inspection and decontamination procedures at 28 parks. As provided for in the ANS Act, Parks hired seven (7) additional full-time employees to implement the ZQM Plan with Parks, which includes education, boat inspections and decontaminations.

### **Program Goal**

The goal of the program is to prevent new introductions and reduce the spread of existing ANS, specifically zebra and quagga mussels, in Colorado.

### **Current Status**

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 (a classification used by multiple states in the west following inconclusive genetic analysis of juvenile mussel veligers - the free-floating, microscopic larval life stage of zebra and quagga mussels). Mussel veligers were also detected in Pueblo Reservoir in 2009. **However, there were no positive detections for zebra or quagga mussel veligers or adults at any water in Colorado in 2010.**

Rusty crayfish, an invasive species first detected in Colorado in the Yampa River and Catamount Reservoir in 2009, was found in Sanchez State Wildlife Area in 2010.

New Zealand Mudsnail was discovered in three new locations in 2010: South Delaney Buttes State Wildlife Area in Jackson County, and two sites within the City of Boulder along Dry Creek. The invasive snail was first found in Colorado in 2004 in Boulder Creek, the South Platte River below Eleven Mile dam and the Green River in Dinosaur National Monument. There were no detections from 2005-2009.

A new population of water hyacinth, an aquatic noxious weed, was discovered in Centennial in 2010. This is the second known population in Colorado to the San Luis Valley. Another destructive aquatic weed, Eurasian watermilfoil was discovered in four additional locations this year.

## **2010 Program Activities:**

### **Regulatory**

The Wildlife Commission finalized regulations in its five-year review of Chapter 1 – Fishing on November 12, 2010. In an effort to stop the spread of ANS and diseases, substantive changes included further prohibition on the transport and use of live baitfish, which now must be used in the same body of water from which they were taken, except for those fish captured within the Lower Arkansas River Basin (below Pueblo), which may be transported and used in other counties within that area. Use of live baitfish remains prohibited above 7,000 feet and in all areas west of the Continental Divide, except Navajo Reservoir.

In addition, all crayfish caught west of the Continental Divide must now be immediately killed and taken into possession, or immediately returned to the water from which they were taken. There are no crayfish native to the west slope. The same restriction applies to Sanchez Reservoir on the East Slope due to the invasive rusty crayfish found there in 2010.

## **Sampling/Monitoring**

The DOW has been sampling over 100 at-risk waters for aquatic invasive weeds 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 and a three-phase identification process: 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. Identification of plankton tows includes a cross-polarized light microscopic visual analysis, followed by two-phase DNA analysis (polymerase chain reaction [PCR] and gene sequencing) to identify genus and species respectively.

In 2008, the DOW implemented a comprehensive early detection program for zebra and quagga mussels. Waters were selected from a prioritization ranking resulting from a risk assessment, which was conducted specifically to determine the potential risk of introduction of zebra and quagga mussels. The risk assessment identified 19 very high risk waters (sampled every three to four weeks), 17 high risk waters (sampled every three to four weeks), 58 medium risk waters (sampled twice), and 64 low risk waters (sampled once).

In 2009-2010, the DOW continued the early detection program for zebra and quagga mussels, along with monitoring for other high priority ANS. In 2010, crews sampled approximately 200 standing and approximately 30 flowing waters statewide. In total for 2010, there were approximately 1,200 plankton tows taken and analyzed for veligers, approximately 150 substrates were analyzed over 600 times for settled mussels, 581 shoreline surveys conducted (lake and stream), 516 crayfish sampling sites, and 23 state hatchery inspections for ANS. In addition, water quality measurements were recorded at approximately 875 sites.

The DOW, in collaboration with the Bureau of Reclamation, held the State ANS Sampling and Monitoring Training School for the second year. Trained partners help to collect samples at waters they own or manage, while analysis is conducted at the DOW’s Aquatic Animal Health Lab at no cost to partners. Partner agencies contributed 84 samples, including Colorado Springs Utilities, the National Park Service, the US Forest Service and others. For the 2011 sampling season, State Parks will roll out a pilot substrate sampling program on Parks waters to augment the monitoring conducted by CDOW.

The DOW completed the State ANS Sampling and Monitoring Manual in July 2009 and made refinements in 2010. This document describes in great detail the standard protocols for the various baseline inventories and species-specific ANS sampling and monitoring protocols, in addition to identification and laboratory processes. The Manual incorporates recommendations detailed in both the *Zebra/Quagga Mussel Early Detection and Rapid Response: Blue Ribbon Panel Recommendations for the DOW* (February 2009) and the *100<sup>th</sup> Meridian Initiative’s Interagency Dreissena Monitoring Plan for Western Waters* (September 2009).

Currently, the DOW is developing an online ANS sampling and monitoring database, scheduled for completion in January 2010. The system allows tracking a sample from collection to final identification, including the results from microscopy, PCR testing, and gene sequencing. This database also enables us to better communicate with our partners and reservoir owners/managers regarding our efforts specific to their water bodies. Reclamation has partnered with the DOW to cost-share its development and assists with implementation.

### **Watercraft Inspection and Decontamination**

Per the State ANS Regulations, trailered watercraft must submit to an inspection, and decontamination if needed, prior to entrance in Colorado’s waters following boating out of state or boating on a positive or suspect water. Boaters are also required to submit to an inspection prior to entering a water body where inspections are required by the managing agency. All persons performing inspections and/or decontaminations in Colorado must be certified by either the DOW or Parks.

The DOW, Parks and their partners conducted 78 watercraft inspection and decontamination certification courses throughout Colorado in 2010. The DOW also trained Wyoming Department of Game and Fish personnel and Parks trained New Mexico personnel. Together, the DOW, Parks, and their partners trained and certified 812 individuals between March and October. Both the training program and the inspection programs focus on educating the boaters, in addition to inspecting the boats.

A total of 112 locations were authorized to perform watercraft inspection and decontamination in 2010.

<b>Entity Type</b>	<b># of Authorized Locations</b>	<b>% of Total Locations</b>
County	2	1.79%
Federal	1	0.89%
Municipal	11	9.82%
Private Club	3	2.68%
Private Concessioner	4	3.57%
Private Industry	27	24.11%
Private Lake	3	2.68%
Private Marina	14	12.50%
State - DOW	19	16.96%
State - State Parks	28	25.00%
<b>Total Inspection Stations in 2010 =</b>	<b>112</b>	<b>100%</b>

Of the 112 total stations, 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. Parks manages the containment program at Pueblo Reservoir. The DOW implemented containment procedures at the federally managed impoundments in Grand County (Granby Reservoir, Shadow Mountain, and Willow Creek and Grand Lake), in addition to two State Wildlife Areas (Tarryall Reservoir and Jumbo Reservoir). The DOW and the National Park Service jointly implemented both prevention and containment protocols at

Blue Mesa Reservoir. In addition to zebra/quagga mussel containment, 3 locations (Douglas State Wildlife Area, Lathrop State Park and Standley Lake) implemented containment protocols in response to infestations of an aquatic weed, Eurasian watermilfoil.

The other 102 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. Prevention stations focus on inspecting watercraft prior to entering an uninfested water to prevent a new invasive species from being introduced. 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.

In 2010, a total of **14** boats with attached adult zebra or quagga mussels were intercepted coming into Colorado’s waters from out of state at watercraft inspection and decontamination stations. The infested vessels were intercepted at Horsetooth Res, Blue Mesa Res, Pueblo Res, Shadow Mtn Res, Chatfield Res, Vallecito Res, Turquoise Lake, Navajo Lake, Highline Lake, and Carter Res. The vessels were mostly coming from the Midwest (WI, IL, OH, MI, IN), but also Lake Pleasant AZ, Lake Havasu AZ-CA, and Lake Texoma TX-OK. These boats were fully decontaminated to ensure all mussels were dead, and no mussels were attached to the vessel.

In comparison, last year in 2009, a total of **19** boats with attached adult zebra or quagga mussels were intercepted coming into Colorado’s waters from out of state at watercraft inspection and decontamination stations. The infested vessels were intercepted at Blue Mesa, Cherry Creek, Denver DOW Headquarters, Horsetooth, Navajo, Pueblo, Ridgeway and Williams Fork. These vessels were coming into Colorado from Arizona, Illinois, Louisiana, Minnesota, New York, and Ohio. The majority of the intercepted vessels were coming from the Great Lakes, the Mississippi River, or Arizona (Lake Pleasant or Lake Havasu).

A total of 437, 520 inspections and 3,938 decontaminations were performed in Colorado in 2010. This is an increase of over 35,000 inspections and 600 decontaminations from 2009. A summary of inspection station numbers by entity type is listed in the two tables below.

2010 Inspection Summary by Entity Type	Total High Risk Inspections	Total Standard Inspections	Total CDD Inspections	Total Inspections	% Of Total
State Parks	8,399	132,051	84,190	224,640	51%
CDOW	22,202	18,278	29,685	70,165	16%
Larimer County	20,388	17,759	26,666	64,813	15%
National Park Service	6,542	17,537	11,478	35,557	8%
Municipal	11,240	3,446	9,877	24,563	6%
Private	6,375	5,993	5,450	17,782	4%
<b>Grand Totals*</b>	<b>75,146</b>	<b>195,064</b>	<b>167,346</b>	<b>437,520</b>	<b>100%</b>

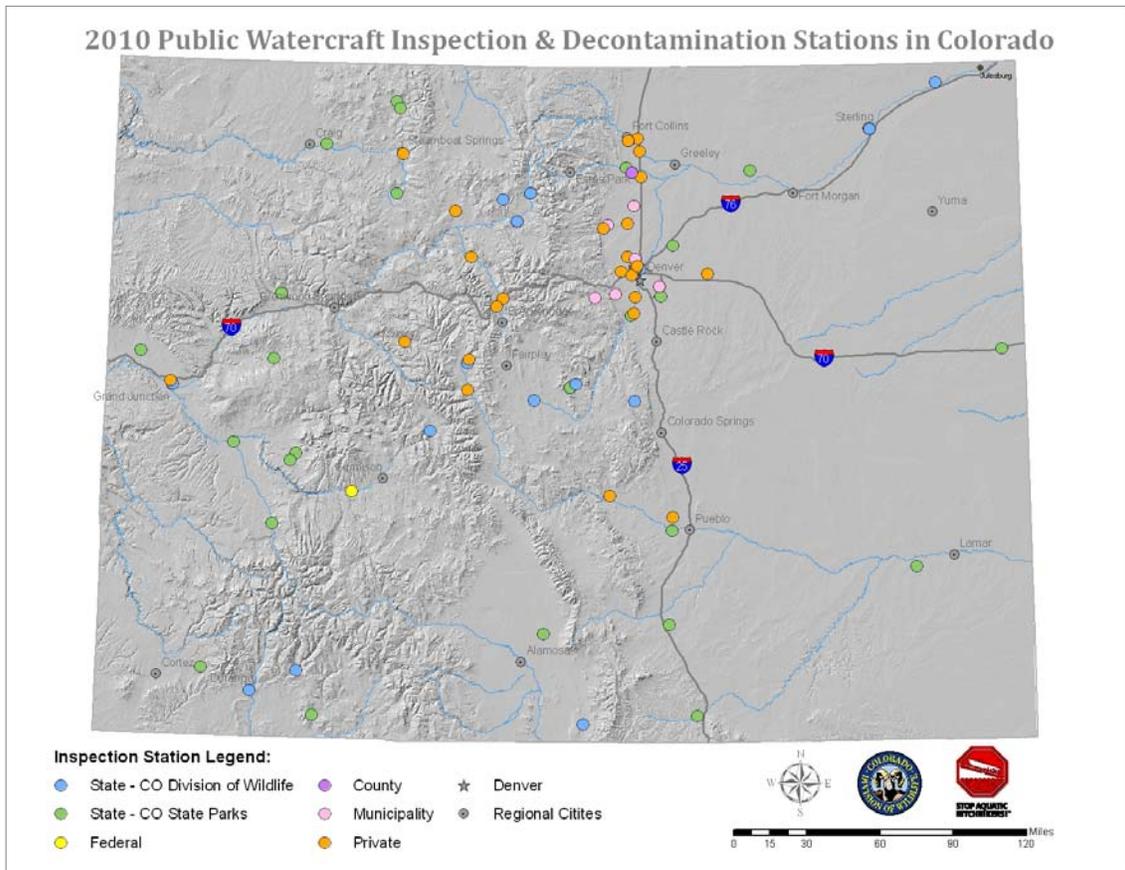
2010 Decontamination Summary by Entity Type	Total Standing Water Decons	Total Plant Decons	Total Bait Treatments	Total Full Decons	Sum of Total Decons	% Of Total
State Parks	336	818	(included in plant decons)	29	1,183	30%
Larimer County	940	4	39	46	1,029	26%
CDOW	225	5	6	539	775	20%
Municipal	2	4	7	577	590	15%
National Park Service	221	8	0	10	239	6%
Private	99	4	0	19	122	3%
<b>Grand Totals*</b>	<b>1,823</b>	<b>843</b>	<b>52</b>	<b>1,220</b>	<b>3,938</b>	<b>100%</b>

*\*As of 1-15-11, there are inspection station data reports from partners that have not been recieved.*

In order to guarantee quality assurance of the inspections operated by the various certified entities, the DOW implemented a Quality Assurance & Field Support Team last year, which continues annually. State Parks implemented a quality control program for watercraft inspection stations under their jurisdiction in 2010. The two teams performed quality control evaluations all watercraft inspection stations to ensure that state protocol was being followed. The teams also ensured all stations were adequately stocked with educational materials and proper signage, and provided on the job training to inspectors and supervisors. DOW conducted 70 unannounced secret shopper evaluations of inspection stations and Parks conducted five volunteer secret shopper checks. The DOW and Parks conducted two cooperative quality control evaluations jointly. The DOW also called 63 state, local and federal offices, private businesses and inspection stations to assess the quality of telephone customer service with respect to ANS. The quality control program will continue in 2011 with unannounced checks by the Coordinators, secret shopper visits and regular monitoring of inspections stations by both agencies.

In 2010, Parks continued a proof of prior inspection system at night; in early spring and late fall (boat seals and inspection receipts are dropped in a drop box at the boat ramp). The boat ramps are not staffed during those times, yet Parks verifies all boats are inspected prior to launch and intercepts and fines those that launch without prior inspection. Parks with small hand-launch craft conduct education programs and spot inspections only.

Both the DOW and Parks maintain separate Watercraft Inspection System Databases to track information associated with inspection stations. The databases includes information related to trainers, certification courses, certified individuals, identification cards, site operating procedures, supervisors, cooperative management agreements and key partner contacts. They allow us to better communicate with the inspectors and decontaminators in the field, along with reservoir owners and managers, in a timely fashion. It enables us to provide alerts and to receive feedback from the field to better support our employees and partners. The second phase of the database project is to develop an electronic format for storing inspection data at the ramp which can be utilized by all authorized locations to better evaluate watercraft risk on site. Parks is developing a Personal Data Assistant (PDA) application to streamline and improve the on-ramp data collection process. This prototype application has successfully been field tested at one Park and will to to multiple-site field tests in 2011.

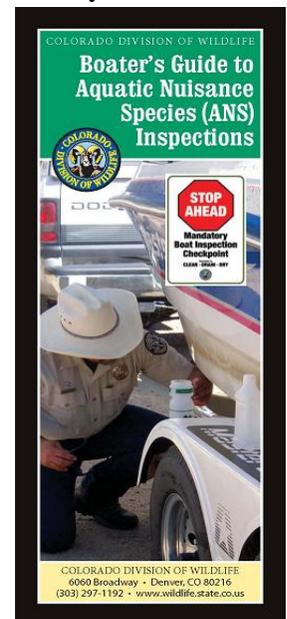


## Information and Outreach

Beginning in 2008, the DOW, Parks and partner agencies developed a comprehensive, multi-faceted, 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.

Over the last three years, the cooperative effort utilized a variety of mediums, including billboards, boat ramp signage, ANS brochures, agency Web pages, and staffing tradeshow and expo booths to convey this message. Accomplishments include: distribution of thousands of "Zap the Zebra" brochures and ANS rack cards, installation of more than 600 signs at boat ramps and water-access points and the distribution of hundreds of "Don't Move a Mussel" DVDs to boating and angling groups. In addition, they have implemented an aggressive media relations campaign, using press releases and conducting Web-based, radio, print and television interviews. Division staff hosted numerous outreach seminars to boating and angling groups, marine dealers, HOAs, watershed groups, basin roundtables, ditch companies, municipal water managers and providers.

The campaign focused largely on notifying resident and nonresident boaters about Colorado's revised boating regulations and mandatory watercraft inspections. To supplement this effort, Parks developed over 50 ANS training and outreach videos in the last year. They are in final production at the time of



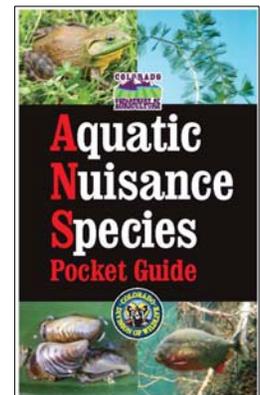
writing. Also in recent months, the DOW published a new brochure: "Boaters Guide to ANS Inspections," detailing Colorado-specific boating guidelines and inspection requirements. The brochure was partially funded by a grant from the Bureau of Land Management and will be available on boat ramps and at offices in spring 2011.

Along with over 15,000 rack cards on ANS in English and Spanish, the very popular Zap the Zebra pamphlet, Parks put out two new ANS posters, displays of actual mussels and photos of mussels and Eurasian watermilfoil for use by inspectors when working with the public. DOW has recently distributed displays of actual mussels to agency and partner inspection stations for use in 2011.

The DOW conducted seven presentations, not including a series of guest lectures and hands on activities for the Youth Environmental Stewards Program for grade school students and three University guest lectures. Parks also conducted seven ANS presentations and was invited to present the Parks ANS experience at the Nebraska AIS Workshop. The DOW presented Colorado's ANS Program at the Wyoming AIS Summit and the California Invasive Mussels Summit. Parks and DOW both staffed ANS booths at the Denver Boat Show. Parks also staffed ANS booth at the National Get Outdoors day. The DOW also staffed ANS Booths at the International Sportsman Expo, the Colorado Lakes and Reservoir Management Association Annual Conference, All Eyes on Walleye Expo, World Water Day Expo, Sterling Water Festival and the North American Weed Management Association Annual Conference.

## Education

There were two youth education publications about ANS distributed at boat ramps, classrooms, public events and state offices statewide in 2010. Both publications were created by the Colorado Foundation for Agriculture in partnership with the Colorado Lakes and Reservoir Management Association, Colorado Department of Public Health and the Environment and the DOW. The first is a comic about zebra and quagga mussels that was initially published in the Denver Post Kids Section in August 2009. The second is a *Colorado Reader* specifically about ANS. The Reader was distributed to grade school science classrooms statewide in addition to the various outlets mentioned above. The goal of these products is to inform children about the impacts of invasive species using geography, math and science educational points. They also reinforce the importance for children to help keep their family's boats and equipment cleaned, drained and dry to prevent the spread of ANS.



The Pocket Guide to ANS was created for professionals to use to assist with identification of ANS in the field. The book was a joint publication between the DOW and the Colorado Department of Agriculture and was completed in November 2010. It includes photos, general descriptions, habitat characteristics, current status and reporting contact information for animals, fish, plants and pathogens of concern. It is currently available for distribution from either agency.

## State Fish Hatchery Program

To date no mussels have been identified in any Colorado hatchery, including the hatchery at Pueblo Reservoir. However, proactive measures have been put in place statewide to protect hatcheries and state waters from an invasive species introduction. Those measures include Annual Fish Health Inspections,

HACCP, Trainings and Workshops. All hatcheries are monitored regularly for a mussel or other ANS introduction.

Statewide preventative measures also include implementation of standardized disinfection protocols for wild spawn, fish transfers and egg transfers. Through a contract with the Bureau of Reclamation, the DOW explored methodologies for disinfection for fish being transported from Pueblo Fish Hatchery. In addition, specialized trailer units have been constructed for all wild fish spawning operations to ensure no ANS are transported. Biologists are certified inspectors and decontaminators. They have decontamination units and clean boats and equipment in between each use.

## Research

The state is funding or participating in research projects related to zebra and quagga mussel management. Current projects underway include the following:

- A risk assessment of recreational boating traffic and aquatic nuisance species (*Dreissena* mussel) invasion to lakes, rivers and reservoirs of the Western United States. Western Regional Panel and University of California Davis. Scheduled for Completion in March 2011.
- Potential Zebra and Quagga Mussel Control Studies: Focus on Boat Decontamination of Interior Compartments. Colorado State University. Scheduled for Completion in May 2011.

Completed projects include the following:

- A Cost-Benefit Analysis of Prevention Management for Zebra and Quagga Mussels in the Colorado Big-Thompson Project. Colorado State University. July 2010.
- Statewide Risk Analysis and Modeling of *Dreissena* Mussels. University of Toledo. September 2010.
- Colorado State Parks Risk Analysis and Modeling of *Dreissena* Mussels. University of Toledo. September 2010.
- Assessment of Quagga Mussel Veliger Treatments for Pueblo State Fish Hatchery Transport. Reclamation. October 2010.

## Other ANS of Concern

### Rusty Crayfish

Rusty crayfish is an invasive species that was first discovered in 2009 in a main-stem impoundment of the Yampa River and at two river locations between Stagecoach Reservoir and Steamboat Springs. Following the first finding in Colorado last year, the DOW conducted extensive surveys statewide and detected a population in Sanchez Reservoir State Wildlife Area in October 2010. The Director issued an Emergency Administrative Restriction: Crayfish Collection Closure for Sanchez Reservoir which restricts the taking of a live crayfish from Sanchez. In November, the Wildlife Commission set new regulations prohibiting the live movement of crayfish west of the Continental Divide (see above).



Rusty crayfish are native to the Ohio River Basin and have expanded their native range to include several U.S. states and Ontario, Canada. They colonize lakes, rivers, and streams throughout North America. They are more aggressive than native crayfish, better able to avoid fish predation, and can

harm native fish populations by eating their eggs and young. They can displace native crayfish and hybridize with them. They graze on and eliminate aquatic plant populations that provide necessary habitat and food source for native fish and waterfowl.

### **New Zealand Mudsnailed**

The New Zealand Mudsnailed was discovered in three new locations in 2010: South Delaney Buttes State Wildlife Area in Jackson County, and two sites within the City of Boulder along Dry Creek. The invasive snail was first found in Colorado in 2004 in Boulder Creek, the South Platte River below Eleven Mile dam and the Green River in Dinosaur National Monument. There were no detections from 2005-2009. The DOW has been actively monitoring the populations since their discoveries and will continue to do so. An angler education program was enacted in 2004 and continues to be highly visible.



New Zealand Mudsnailed

### **Aquatic Weed Coordination**

The DOW is a lead agency on aquatic weed mapping and education, in close partnership with the Colorado Department of Agriculture’s Noxious Weed Program. There are a few distinct aquatic weed efforts led by the DOW, which is summarized below.

### ***Eurasian watermilfoil (EWM)***

Beginning in 2005, EWM management has been coordinated by the ANS partnership. A detailed Geographic Information System (GIS) database of EWM locations and control efforts was developed and is maintained by the DOW. In 2010, four new populations were detected, in addition to the 22 exotic sites and 2 hybrid populations already known.



An EWM weed mat

The DOW supplied the mapping data to CDA for incorporation into the State EWM Management Plan, which was adopted into rule by the Agriculture Commission in May 2010. The EWM Plan designated positive waters as mandatory eradication, suppression or containment, as part of the State Weed Law. Both the DOW and Parks manage waters infested with EWM and there are containment boat inspection programs in place currently at Douglas SWA and Lathrop State Park to prevent the spread of this highly invasive water weed on watercraft.

### **Purple Loosestrife**

Beginning in 1993, the DOW has been the lead coordinator on the Denver metro purple loosestrife management effort. The goal of the program is to make sure that purple loosestrife is controlled to protect waterfowl habitat and maintain in-stream flow. Approximately 31 cities and counties, public agencies, private landowners and private entities are involved. For example, Parks aggressively controlled purple loosestrife at Cherry Creek with spraying and hand pulling small plants and seedhead cutting on larger plants and continues to shrink the population there. The DOW and CDA share the responsibilities for the continuance of this program.



Purple Loosestrife

## Regional Participation

The DOW and Parks are involved in several regional efforts to stop the spread of zebra and quagga mussels and other ANS.

The DOW serves as:

- Chair of the national Association of Fish and Wildlife Agencies (AFWA) Invasive Species Committee
- Executive Committee Member of the Western Regional Panel (WRP) on ANS
- A member of the Western Association of Fish and Wildlife Agencies Invasive Species Committee
- Member of the Steering Committee and Writing Team for the Quagga/Zebra Action Plan for Western Waters (approved by Federal ANS Task Force in October 2009)
- A Core Team Member of the Champion States Invasive Species Initiative

Parks serves as:

- Parks continues to coordinate PDA use and development with Iowa and other states.
- Member of the WRP's Boat Inspection and Decontamination Workgroup

The DOW and Parks serve together as:

- Members of the Western Regional Panel on ANS
- Participants in the Navajo Regional ANS Workgroup.
- Continue to coordinate with other western states to develop reciprocity for ANS seals.

## Operating and Financial Statement

Senate Bill 08-226 created the Division of Wildlife Aquatic Nuisance Species fund within the state treasury and authorized a funding of \$3,917,244 in FY 08-09 towards the prevention, containment and eradication of aquatic nuisance species in state waters. This funding was a mix of \$1,250,000 wildlife cash combined with \$2,667,244 of funding from the operational account of the severance tax (Tier II). SB 08-226 appropriated \$1,304,544 of severance tax funding for the state fiscal year commencing July 1, 2009 and for every state fiscal year thereafter.

Figures reported here are for boating seasons which are based on a calendar year of January through December. The Division did not receive appropriated funding prior to July 1, 2008, so expenditures made for the 2008 Boating Season, prior to July 1, 2008 were paid for out of wildlife cash. Permanent DOW staff time spent on aquatic nuisance species work is paid for with wildlife cash. The 2009 boating season expenditures include purchases of decontamination equipment.

DOW Boating Season 2008	\$433,000.69
DOW Boating Season 2009	\$2,233,423.91
DOW Boating Season 2010	\$1,861,615.57

Budget projections indicate the current annual allocation to the DOW is not sufficient to maintain the 2010 level of ANS coverage beyond 2011.

Over the last year, the DOW leveraged current funding by forming partnerships with a variety of entities. The following is a list of 2010 partnership contributions totaling \$862,380 through cost-share agreements and contracts between the DOW and its partners, which is an increase of almost \$300,000 from the previous year. A summary of partner agency contributions is in the table below:

Partner Agency	Summary of Partnership Funds
CO Springs Utilities	\$ 31,600
Denver Water	\$ 200,000
Larimer County	\$ 85,000
US Army Corp of Engineers	\$ 4,000
US Bureau of Land Management	\$ 45,000
US Bureau of Reclamation	\$ 50,000
US Fish & Wildlife Service	\$ 49,000
US Forest Service	\$ 137,780
US National Park Service	\$ 260,000
<b>Total</b>	<b>\$ 862,380</b>

Parks was allocated \$2,701,000 that became available on July 1, 2009 for the FY '09-10. Approximately \$2,221,494 was spent by June 30, 2010. Many equipment purchases and construction projects totaling about \$200,000 were encumbered in FY09-10 that is being spent out in this fiscal year. For the FY '10-11 fiscal year, Parks was allocated \$2,701,000, and is planning to spend about \$3,193,000 million by June 30, 2011 using this year allocation and carryover from the previous year. Of the \$3.193 million to be spent this year, \$2.3 million is allocated for operational costs and \$893,000 is allocated for supplies, equipment and construction.

Both Parks and the DOW are planning to retain budget carryover between fiscal years because some projects span two fiscal years and because of the potential for zebra or quagga mussels to be detected in new waters during the middle of a boating season. The cost of operations at a major recreational water body following infestation could double in order to implement containment measures. The future risk of infestation could moderate if more monitoring is conducted and other agencies within Colorado and surrounding states put in place programs to prevent the spread of zebra and quagga mussels.

STOP AQUATIC NUISANCE SPECIES



STOP THE SPREAD!

Why Should You Care About Zebra and Quagga Mussels?

- Mussels reproduce quickly. Each female can release up to 1 million eggs!
- Once established in a large reservoir, they are impossible to eliminate. Chemical and biological controls are ineffective. The most effective way to control them is to prevent getting them in the first place.
- They damage boat motors, steering components and intakes.
- They cause millions of dollars in damage to fisheries, recreation, and water facilities.
- Stopping their spread is critical to protect fishing. They take away nutrients from fish and greatly reduce fishing opportunities as well as impact other native aquatic species.
- They spread by attaching to boat hulls, anchors, motors or on trailers.
- They can also be transported as microscopic larvae in water (through bilge, ballast or live wells).

Where Are These Mussels?

They were introduced from Europe to the Great Lakes in 1988 in the ballast tanks of large ships and have spread over a 30 year period.



Distribution of Zebra and Quagga Mussels in the U.S.

They are new to the Western U.S. Discovered in Lake Mead, Nevada in 2007 and quickly spread downstream to reservoirs in Southern California and Arizona.



Zebra / Quagga Mussel Locations

Colorado water bodies with Zebra or Quagga mussels.

Full-scale adult populations do not yet exist in Colorado, but mussel larvae have been positively detected in 7 reservoirs. There are still hundreds of uninfested reservoirs in Colorado we can protect.

What You Can Do

- Keep your boat **CLEAN**. Remove all plants, animals, and mud. Thoroughly wash everything that comes into contact with the water.
- **DRAIN** all the water. Drain all water before leaving the area including live wells, bilge, ballast, motors, and any other areas of your boat that holds water.
- **DRY** your boat and gear. Dry all parts of the boat and all gear completely before launching at another reservoir.
- To reduce the risk of ANS, don't move live **BAIT** between waters. If you catch live bait, don't transport into another location. If you buy bait, be sure to keep a valid receipt. When leaving, dispose of unused live bait in the trash.

CLEAN - DRAIN - DRY



Above photo shows *Ranunculus abortivus* disturbed by mussels. Nevada boat motor covered in mussels (far right). Mussels attach with their byssal threads (right).

Don't Let This Happen to our Waters!

FOR MORE INFORMATION PLEASE CALL:  
Gene Seagle at 303-866-3203 ext. 4343 or  
Rob Billerbeck at 303-866-3203 ext. 4341