



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



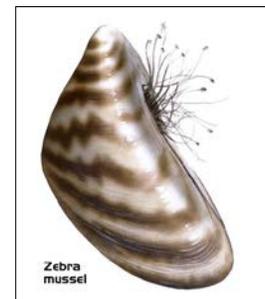
Colorado Parks and Wildlife January 2012

The former Division of Wildlife (DOW) and State Parks (Parks) have been merged into a single agency, Colorado Parks and Wildlife, beginning July 1, 2011. For the 2011 boating season, Parks and Wildlife continued to operate boat inspection stations independently per SB08-226. For the purpose of this report, the activities occurring between 2008-2011 are attributed to the former DOW and Parks agencies independently. Activities occurring after the 2011 boating season concluded are referred to as combined CPW activities.

The CPW Transition Process is ongoing and an Invasive Species Workgroup determined the best methods to merge the overall Invasive Species Program, which includes the ANS, Noxious Weeds and Forest Insect/Pest Programs in the future to gain efficiencies, save money and improve customer service. CPW Invasive Species Coordinators are currently working to merge the training, quality control and data management aspects of the ANS Program prior to boating season 2012, which begins in February.

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 DOW, in partnership with 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), along with a variety of other invasive species management duties, such as noxious weed and forest pest coordination. 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.

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 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 Invasive Species, specifically ANS such as zebra or quagga mussels, in Colorado.

Current Status

Pueblo Reservoir, Granby Reservoir, Grand Lake, Shadow Mountain Reservoir, Willow Creek Reservoir, Tarryall Reservoir and Jumbo Reservoir all tested positive for zebra and/or quagga mussels in 2008. Mussel veligers were also detected in Pueblo Reservoir in 2009. There were no positive detections for zebra or quagga mussel veligers or adults at any water in Colorado in 2010. The only positive result for a zebra or quagga mussel veliger in Colorado in 2011 was again at Lake Pueblo.

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). Disparate results in late 2011 indicated that quagga mussel DNA was present in Blue Mesa Reservoir, but no mussel veligers or adults were found. Therefore, Blue Mesa will remain on the suspect waters list for quagga mussels and we will continue to implement the containment and prevention boat inspection protocols as a joint partnership between DOW and the National Park Service.

DOW has detected numerous other New Zealand Mudsnail, Rusty Crayfish and Eurasian watermilfoil sites in the last few years.

- Rusty crayfish, an invasive species first detected in Colorado in the Yampa River and Catamount Reservoir in 2009, in Sanchez State Wildlife Area in 2010 and in Steamboat Reservoir State Park in 2011.
- New Zealand Mudsnail was discovered in three new locations in 2011: Eleven Mile Reservoir State Park, East Delaney Buttes State Wildlife Area, and College Lake, CSU, Fort Collins. In 2010, they were discovered at the South Delaney Buttes State Wildlife Area, 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.

- Eurasian watermilfoil, an expensive and destructive aquatic noxious weed which has been tracked by the state since 2004, was discovered at Eleven Mile Reservoir State Park (alongside the New Zealand mudsnails).

2011 Program Activities:

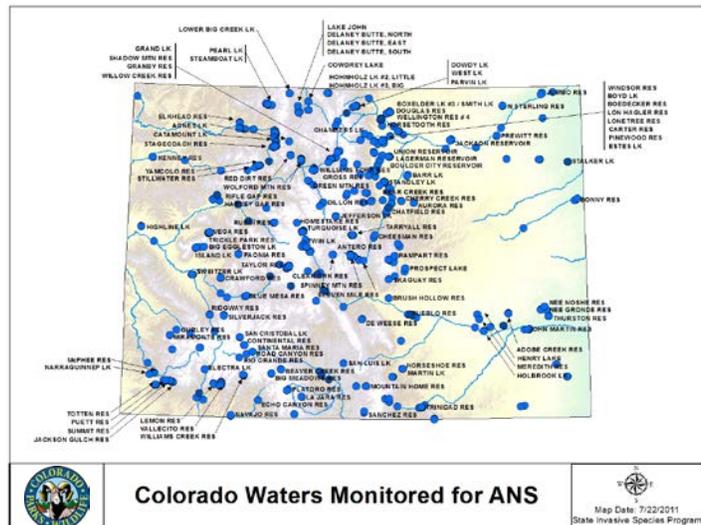
Sampling/Monitoring

The DOW has been sampling over 250 at-risk waters for aquatic invasive weeds animals over the last six 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 for the early detection of zebra or quagga mussels: 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 confirm genus and species.

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 two to three 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 2011, crews sampled approximately 180 standing and approximately 80 flowing waters statewide. In total for 2011, there were approximately 1590 plankton tows collected and analyzed for veligers (approximately 390 more than in 2010), 149 substrates were checked approximately 660 times for settled mussels, approximately 490 shoreline surveys conducted (lake and stream), approximately 170 crayfish sampling sites, and 11 state hatchery inspections for ANS. In addition, water quality measurements were recorded at approximately 1130 sites.



The DOW, in collaboration with the Bureau of Reclamation, held the State ANS Sampling and Monitoring Training School for the third 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 48 plankton tow samples, including Colorado Springs Utilities, the National Park Service, and the US Forest Service.

The DOW updated the *State ANS Sampling and Monitoring Manual* (original draft finalized in July 2009). 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 *100th Meridian Initiative's Interagency Dreissena Monitoring Plan for Western Waters* (September 2009).

CPW is currently completing the development of an online ANS sampling and monitoring database. 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 CPW.

CPW and their partners taught 101 watercraft inspection and decontamination certification courses in 2011. CPW also trained staff from the states of Nebraska, North Dakota, South Dakota, Wyoming, New Mexico and Minnesota. Together, CPW and their partners trained and certified 708 individuals last year, for a total of 2,254 certifications since the training program's inception in 2009. Both the training and the inspections focus on educating the boaters.

Number of People Trained by Entity			
Entity Type	2009	2010	2011
Division of Wildlife	396	378	282
Larimer County	64	44	17
Municipalities	51	7	12
National Park Service	0	0	1
Private Industry	4	0	1
State Parks	219	383	395
Annual Totals:	734	812	708
Total:	2,254		

A total of 89 locations were authorized to perform watercraft inspection and decontamination in 2011. Of the 89 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 ANS Program office manages the 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 implement both prevention and containment protocols at the suspect 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 81 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, municipalities, marinas, concessioners, private clubs, and marine dealers.

Number of Authorized Locations by Entity				
Entity Type	2008	2009	2010	2011
Division of Wildlife	5	160	19	19
Larimer County	0	2	2	2
Municipalities	3	7	11	9
National Park Service	0	1	1	1
Private Industry	3	11	51	30
State Parks	24	28	28	28
Total:	35	209	112	89

A total of 40 boats with attached adult zebra or quagga mussels have been intercepted coming into Colorado's waters from out of state at watercraft inspection and decontamination stations since 2009. Infested vessels have been intercepted at Blue Mesa, Carter, Cherry Creek, Chatfield, Crawford, Denver DOW Headquarters, Highline, Horsetooth, Jackson, Martin, Navajo, Pueblo, Ridgway, Shadow Mountain, Taylor Park, Turquoise, Vallecito and Williams Fork Reservoirs. The infested vessels were coming from Arizona, California, Illinois, Indiana, Louisiana, Michigan, Minnesota, Missouri, New York, Ohio, Texas and Wisconsin. The majority of the intercepted vessels were coming from the Great Lakes, the Mississippi River, or Arizona (Lake Pleasant or Lake Havasu). These boats were fully decontaminated to ensure all mussels were dead, and no mussels were attached to the vessel.

Intercepted Mussel Boats by Entity	# of Mussel Boats		
	2009	2010	2011
Division of Wildlife	2	2	2
Larimer County	1	3	3
Municipalities	0	0	0
National Park Service	7	1	0
Private Industry (Rocky Mountain Recreation Company)	0	1	0
State Parks	9	6	3
Annual Totals:	19	13	8
Total Intercepted Vessels:	40		

A total of 415,302 inspections and 2,833 decontaminations were performed in Colorado in 2011. A summary of annual inspection numbers can be found in the table to the right, and a summary of inspections and decontamination performed by entity type each year can be found on the next page.

Year	Total Inspections	Total Decontaminations
2008	119,000	129
2009	400,704	3,364
2010	437,520	3,385
2011	415,302	2,833
Total:	1,372,526	9,711

Number of Inspections				
Entity	2008	2009	2010	2011
Division of Wildlife	4,587	52,608	70,165	63,155
Larimer County	-	62,595	64,813	61,489
Municipalities	-	20,569	24,563	24,422
National Park Service	-	27,582	35,557	21,913
Private Industry	-	18,060	17,782	20,584
State Parks	114,000	214,690	224,640	223,739
Annual Totals:	118,587	396,104	437,520	415,302
Total:	1,367,513			

Number of Decontaminations				
Entity	2008	2009	2010	2011
Division of Wildlife	47	1,025	775	1,443
Larimer County	-	635	1,029	271
Municipalities	-	554	590	415
National Park Service	-	219	239	290
Private Industry	-	420	122	99
State Parks	79	511	365	315
Annual Totals:	126	3,364	3,120	2,833
Total:	9,443			

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, 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 of all watercraft inspection stations to ensure that state protocol was being followed in 2011. 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 56 unannounced secret shopper evaluations of inspection stations and numerous announced evaluations. Parks conducted announced evaluations at all 28 locations. The DOW also called 33 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 2012 with unannounced checks by the Coordinators, secret shopper visits and regular monitoring of inspection stations by both agencies.

In the past, the DOW and Parks have maintained separate Watercraft Inspection System Databases to track information associated with inspection stations. These have already been merged under CPW. 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. A pilot program was implemented at Boyd Lake, Barr Lake and State Forest State Parks utilizing a handheld device to streamline and improve the on-ramp data collection process. This prototype application was successfully tested last year and will be deployed on a larger scale and phased in statewide.

In 2011, Parks continued their pre-inspection program, in which a proof of prior inspection system is in place outside of inspection hours: 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.

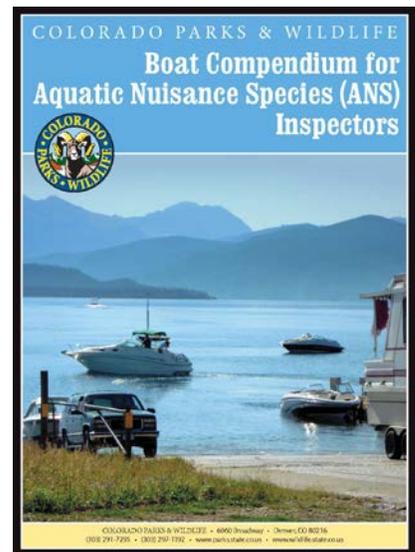
Protocol Development for Watercraft Inspection and Decontamination

CDOW published extensive protocol manuals in 2011: *the Colorado ANS Watercraft Decontamination Manual* and *the Colorado Boat Compendium for ANS Inspectors and Decontaminators*.

The *Colorado Scuba Diving Manual for Underwater Surveying and Sampling of ANS* is currently being finalized for publications by CPW.

CDOW was granted USFWS funding through the *Quagga Zebra Action Plan for Western Waters* for development of the *Colorado Watercraft Containment Manual for Waters Positive with Zebra or Quagga Mussels*. During the 2011 boating season, there was significant testing of field protocols and drafting of this manual. This project is scheduled for completion by CPW prior to March 2012.

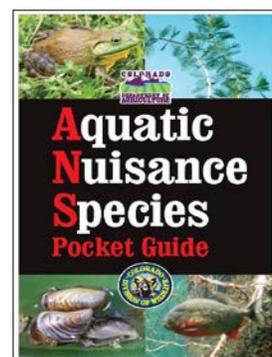
CPW is currently revising the watercraft inspection and decontamination certification/training program manual, *Colorado ANS Watercraft Inspection and Education Handbook* (2009), which will be available for the 2012 boating season.



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 tens of thousands of printed rack cards, brochures, handouts, DVDs, posters and signs at offices, boat ramps and water-access points. 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.

CDOW developed and published the *Aquatic Nuisance Species Pocket Guide* in partnership with the Colorado Department of Agriculture. This booklet combines all four prohibited species lists (in three state agencies) into a single book that instructs the reader how to report the species if they were to find it. CDOW also revised and republished *A Field Guide to Freshwater Mollusks of Colorado*.

There were four handouts developed for inspection stations and customer service centers in 2011: *Stop the Spread of Invasive Species* which outlines why invasives are a problem and provides an overview of the top four species of concern in addition to providing cleaning recommendation or waders and anglers; *ANS Tips for Boats with Ballast Tanks*; *ANS Tips for Pontoon Boats*; and *Tips for Handling Live Aquatic Bait*.

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. There is only one current project underway:

- A boater choice model and risk assessment for the movement of zebra or quagga mussels in Colorado. Colorado State University. Anticipated completion July 2012.

Completed projects 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. March 2011.
- Potential Zebra and Quagga Mussel Control Studies: Focus on Boat Decontamination of Interior Compartments. Colorado State University. May 2011.
- 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. The DOW conducted extensive surveys statewide and detected a population in Sanchez Reservoir State Wildlife Area in 2010 and Stagecoach State Park in 2011.



The Director issued an Emergency Administrative Restriction: Crayfish Collection Closure for Sanchez Reservoir which restricts the taking of a live crayfish from Sanchez. CPW implemented regulations passed by the Wildlife Commission in November 2010, in an effort to stop the spread of ANS and diseases. Those regulations included substantive changes to further prohibit 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.

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 Mudsail

New Zealand Mudsail was discovered in three new locations in 2011: Eleven Mile Reservoir State Park, East Delaney Buttes State Wildlife Area and College Lake, CSU, Fort Collins. In 2010, they were discovered at the nearby South Delaney Buttes State Wildlife Area, 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.

Aquatic Weed Coordination

The DOW has been the 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 Wildlife, 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 2011, EWM was discovered at Eleven Mile State Park, alongside the NZMS.



An EWM weed mat

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 seed head 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

CPW is involved in several regional efforts to stop the spread of zebra and quagga mussels and other ANS, including:

- Vice-Chair of the Western Regional Panel (WRP) on ANS
- Member of the Western Association of Fish and Wildlife Agencies (WAFWA) Invasive Species Committee
- Member of the Association of Fish and Wildlife Agencies (AFWA) Invasive Species Committee
- A Core Team Member of the Champion States Invasive Species Initiative
- Participation in the Navajo Regional ANS Workgroup.

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 DOW 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, including the Invasive Species Coordinator.

DOW Boating Season 2008	\$433,000.69
DOW Boating Season 2009	\$2,233,423.91
DOW Boating Season 2010	\$1,861,615.57
DOW Boating Season 2011	\$ 2,002,344.20

Of the amount stated above for the 2011 Boating Season, \$1,614,883.39 was funded with monies appropriated by SB 08-226. In order to maintain the ANS programs at its current staffing level and provide the services Coloradoans have come to expect, Wildlife obtained a federal motorboat grant to help cover the escalating costs. For the 2011 boating season, from August 1st through December 31st, \$60,158.86 of ANS costs has been funded by the motorboat funds.

Over the last few years, the DOW leveraged current funding by forming partnerships with a variety of entities. The following partnership contributions total \$638,600 through cost-share agreements and contracts between the DOW and its partners, plus \$603,233 of partner in-kind contributions for jointly implemented programs with DOW, which totals \$1,241,833 of partner contributions in 2011. Please note that some of these agreements are for fiscal years instead of calendar year so they may have provided funding for the 2010 boating season or will provide funding for the 2012 boating season. A summary of partner agency contributions is in the table below:

Partner Agency	Summary of 2011 Partnership Funds
CO Springs Utilities	\$31,600
Denver Water	\$ 100,000
Larimer County	\$ 303,233*
US Army Corp of Engineers	\$ 4,000
US Bureau of Land Management	\$77,000
US Bureau of Reclamation	\$50,000
US Fish & Wildlife Service	\$49,000
US Forest Service	\$327,000
US National Park Service	\$300,000*
Total:	\$1,241,833 **

**Figures represent partner contributions directly into jointly implemented boat inspection programs with DOW and not funds coming into DOW.*

***The total includes those funds we have or will be receiving during the period of the agreement.*

Not all of the agreed upon funds will have been spent during the 2011 boating season.

Parks was also funded through Senate Bill 08-226 created the Colorado State Parks Aquatic Nuisance Species fund within the state treasury and authorized funding from Severance Tax (Tier II). FY 08-09 was funded at \$3,289,392. For FY 09 and beyond is funded at \$2,701,461. In 2011, Parks ANS funding was reduced by \$400,000 to \$2,301,461. The ANS Law also provided for seven ANS FTE in Parks. In 2011, two of these FTE were eliminated.

Parks ANS - Fiscal Year	Total Expenditures
08-09	\$1,788,654
09-10	\$2,221,494
10-11	\$2,985,000
11-12	\$2,429,000

Three partners have contributed to the ANS effort in Parks.

Partner Agency	Summary of Partnership Funds
Denver Water (Eleven Mile State Park)	\$100,000
City of Aurora (Spinney Mountain State Park)	Road improvements, restroom repair
Army Corps of Engineers (John Martin S.P.)	Provide ACOE ANS Inspectors

CPW is 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.

