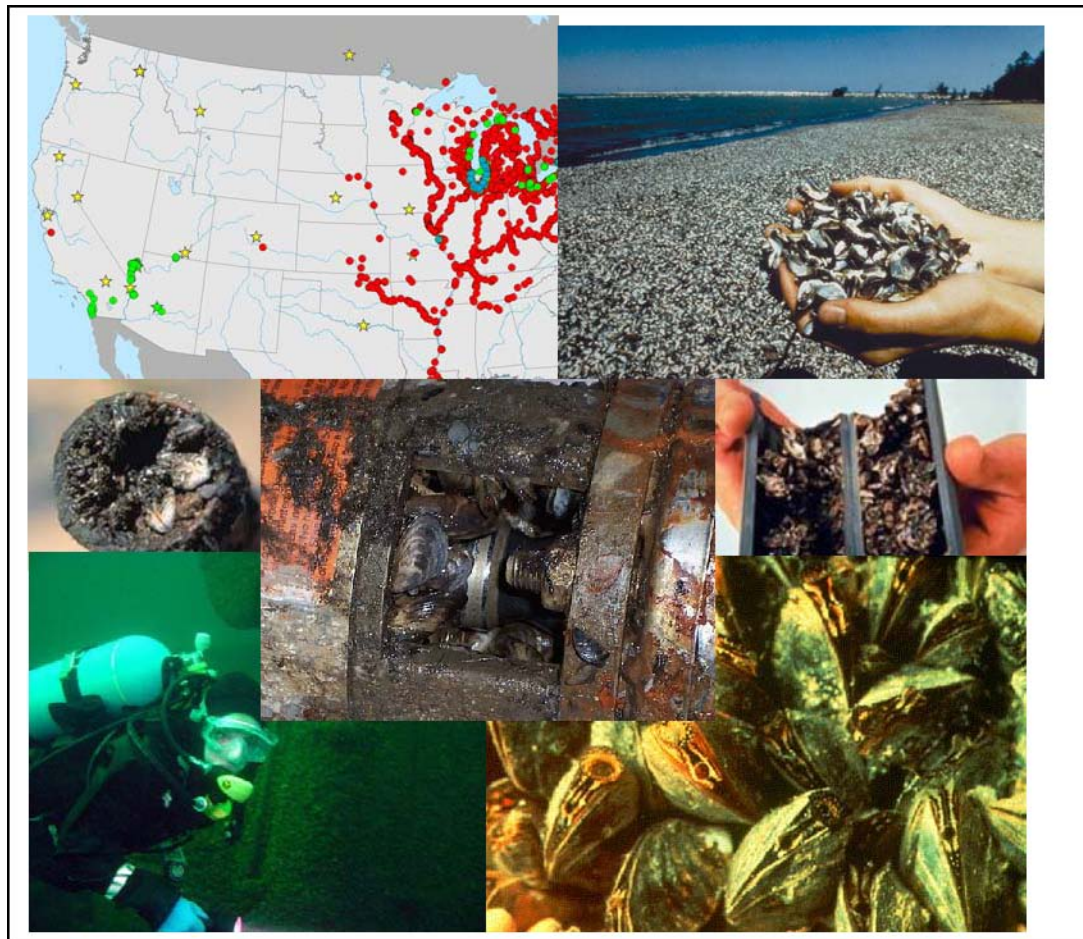




Colorado State Parks

Colorado State Parks Aquatic Nuisance Species (ANS) Inspection and Education Handbook

Version 3, 9/28/08



No Graphics Version

This version of the ANS Inspection Handbook does not contain graphics. This reduces the size of the document considerably. This smaller document is more easily moved by email. The full graphic version will be available on the Colorado State Parks website in mid September.

ANS Inspection Handbook

Status 9/29/08

Page Number

Introduction and Acknowledgements	
1. ANS Inspection Handbook Contents	1
2. Overall State response whitepaper	3
Budget/Staffing	
3. Levels of Protection Description	6
Procedures	
4. Inspection Procedures	11
5. Inspection Type Matrix	23
6. Inspection Flow Chart	27
7. Inspection Seal Policy Guidelines	28
8. ANS Specimen Collection Instructions	29
Resources	
9. Inspection Equipment List	31
10. Zebra/Quagga Mussel Map	32
11. Known Infested Water body List	33
12. Recommended Drying Time Information	34
Forms	
13. Standard Inspection Checklist	36
14. High Risk Inspection Form	37
15. Clean, Drain, Dry Checklist	38
16. Vessel Decontamination Form	39
17. Inspection Seal Receipt	40
Brochures	
18. Clean Drain Dry Rack Card/Brochure	42
19. Zap the Zebra	44
20. Park Specific Policies Brochure	46
Signs	
21. Entrance Signs	48
22. Inspection Preparation/Direction	49
23. Inspection Point	52
24. Stop ANS for Boat Ramps	53
Training Materials	
25. ANS Training Slide Show	55
26. ANS Training Video	69
Law Enforcement	
27. ANS Law	71
28. ANS Emergency Regulations	86
Chemicals	
29. MSDS sheet for Potassium Chloride	91
Letters/Surveys	
30. Letter to Boaters	94
Fact Sheets	
31. Zebra mussel	97
32. Quagga mussel	99
33. Asian clam	102
34. New Zealand mud snail	104
35. Eurasian water milfoil	106
Zebra Mussel Settler Pictures	
36. Zebra Mussel Settler Pictures	108
Park Managers Addendum	(Limited Distribution)

Introduction & Acknowledgements

This section contains the ANS Inspection Handbook contents page and The State of Colorado Zebra Mussel Response whitepaper.

This handbook is designed for use by Aquatic Nuisance Species (ANS) field staff.

When used as a part of a hands-on, complete training session, this document will prepare the user to perform ANS inspections in compliance with the State of Colorado ANS protocol.

Colorado State Parks wishes to acknowledge the following individuals for their contribution to this document:

Rob Billerbeck, Stewardship and Natural Area Program Manager, Colorado State Parks
Elizabeth Brown, Aquatic Nuisance Species Coordinator, Colorado Division of Wildlife
Gene Seagle, Seasonal Aquatic Nuisance Species Technician, Colorado State Parks
Logan Sholar, Seasonal Biology/GIS Technician, Colorado State Parks
Kevin Tobey, Ken Brink, Keith Kahler, Tim Metzger and Joe Brand, Colorado State Parks

All the State Park Managers and field staff
Deb Duke, Colorado State Parks,

Colorado Natural Resources Aquatic Nuisance Species (ANS) Response

11/10/08



**STOP AQUATIC
HITCHHIKERS!**
Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

What are Zebra and Quagga Mussels?

Zebra mussels and quagga mussels are a type of Aquatic Invasive Species (AIS) or Aquatic Nuisance Species (ANS) that are native to the Black and Caspian seas. They were discovered in the Great Lakes in 1988 and have since spread to 26 states in the United States. They are small bi-valve (two-shelled) mollusks, similar to a clam, but they have the unique ability to attach to hard substances under the water.

Why are Zebra and Quagga Mussels a Concern?

They grow and reproduce quickly! An individual female mussel can release millions of eggs per year that are fertilized in the water column resulting in microscopic larvae which can grow to adult densities of hundreds of thousands per square yard.

They clog water facilities. They attach to most underwater structures and can form dense clusters that impair facilities and impede the flow of water. The maintenance costs in water treatment plants, power plant intakes and dams have been in the billions of dollars in the Great Lakes area. They also affect the taste and smell of drinking water and alter densities and types of algae in the water.

They have significant ecological impacts. They are highly efficient filter feeders, filtering up to 1 liter of water per day, and removing much of the planktonic food sources for fish and aquatic organisms. They are also known to attach to native benthic organisms and smother them removing yet another source from the food chain. In the Great Lakes many fish populations were negatively impacted after the invasion by zebra mussels. These mussels also bio-accumulate heavy metals and have been linked to impacts higher up the food chain.

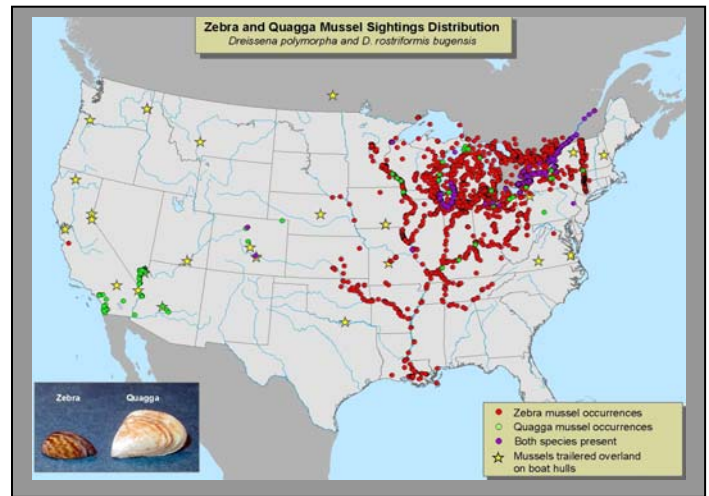
They also spread quickly to other water bodies. They can spread to other bodies of water by attaching to boat hulls and anchors, etc. Their larvae can be transported in bilge water, ballast water or live bait wells. Their larvae also disperse naturally downstream, and although they don't establish large populations in rivers, they can be carried to other lakes or reservoirs downstream or through water diversions.

They are very difficult to kill. Only one water body in the U.S. was able to eradicate zebra mussels and that was an isolated 12-acre quarry in Virginia where a large volume of chemical treatment was used. Eradicating or treating them in a large body of water is difficult, so prevention is very important. They can be killed on boats if they are washed off or dried out. Draining all water from boats and then washing the boats with hot water (140°F) or scrubbing with a 6% chlorine or bleach solution can destroy the mussels. When moving your boat between water bodies, keep your boat dry for more than a week in mid-summer or 3-4 weeks in spring or fall to ensure zebra mussels dry out (it depends on temperature and humidity – see a time calculator at www.100thMeridian.org).

Response to Confirmation of Zebra Mussels in Lake Pueblo

State Parks responded to this problem quickly and is basing its actions on the best management practices available from other states and other countries that have dealt with the same problem.

- **Boating Policies at Lake Pueblo (effective in late March 2008)**
 - Vessel Launching temporary restrictions on launching locations
 - Draining of all water before leaving the reservoir
 - Time Stamp vessels so that inspections can be focused on high risk vessels that have been on the water longer
 - Inspections of all high risk vessels
 - Marina - inspections on all boats leaving, or out-of-state arriving
 - "Clean, Drain and Dry" – public education



Impacts to infrastructure and ecology at El Dorado Reservoir, KS



- **Planning to implement Inspections and Draining at other key parks**
 - Varying levels of inspections at other parks based on priority
- **Public education at all reservoir Parks (June, 2008)**
 - Signs, brochures, public contact
- **Sampling at all higher risk reservoirs (Summer, 2008)**
 - Sampling implemented by Colorado Division of Wildlife in coordination with others.

The Lake Pueblo Response Plan

The Department of Natural Resources developed a response plan for the containment and treatment of zebra mussels at Lake Pueblo. Participants included State Parks, Division of Wildlife, Bureau of Reclamation, Colorado Water Conservation Board, Division of Water Resources, multiple water users and stakeholders.

- The Response Plan was finalized in August of 2008 and is available on the State Parks website.
- The plan addresses:
 - Potential Impacts within the Reservoir
 - Potential Treatment/Containment Options
 - Monitoring/Sampling Needs
 - Modeling of Larvae Releases and Adult Population Growth

The Statewide Rapid Response Plan

The Division of Wildlife is leading the development of a statewide multi-agency response plan to address the threat posed by zebra mussels and other Aquatic Invasive Species.

- The timeline for the Statewide Response Plan will be a draft in the winter of 2008/2009.
- The plan will address:
 - A variety of AIS species; including plants, animals and pathogens
 - Potential Impacts to the ecology and water infrastructure in Colorado
 - Potential Treatment/Containment Options Statewide
 - Statewide Sampling Plan
 - Risk Analysis and Modeling of Potential Spread

The Statewide Colorado ANS Management Plan (CANS)

A multi-agency steering committee was formed in the June 2007 to write a Statewide ANS plan in response to the threats posed by Aquatic Nuisance Species. A statewide management plan is required in order to obtain federal cost-share support under the National Invasive Species Act (NISA). The NISA is administered by the Aquatic Nuisance Species Task Force (ANSTF). Management plans are required to be approved by the State Governor and the Aquatic Nuisance Species Task Force in order to obtain funding for implementation under Section 1204 of the NISA.

The coordinated efforts contained within this plan are designed to protect residents of Colorado and the State's aquatic resources from the social, environmental, economic and recreational losses typically associated with ANS.

This Statewide Management Plan will be finalized in late 2008 and the plan will focus on:

- Preventing introductions of new ANS
- Limiting the spread of existing ANS
- Controlling or eradicating ANS where environmentally and economically feasible.
- Preparing for the management of destructive ANS
- Serving as the "go to guide" for government and private entities, individuals and other concerned stakeholders

The completion of this plan will provide a unified framework to address ANS issues and allow for the CANS Steering Committee to apply for federal and other funds to implement the methods and management practices that will be created in the CANS Management Plan.



Zebra mussels clogging a water delivery pipe, preventing the flow of water.



Zebra Mussels on a beach in the Great Lakes.



State Parks personnel performing boat inspections for zebra mussels/ANS.

Budget/Staffing

Please note the version and date and destroy out of date copies.

Risk Level Staffing Description:

Explains what you are trying to accomplish with that budget at each risk level.

**State Parks – Zebra/Quagga Response
Levels of Protection – Version 4, 9/13/08 DES**

Assumptions based on best available information:

1. Zebra/Quagga are NOT widespread in Colorado – only 1 to possibly a few infested water bodies (intense sampling this summer should reveal any others)
2. Most water bodies in Colorado are susceptible to Zebra/Quagga invasion (Risk Analysis to be completed in a few months may show some higher lakes aren't susceptible and a few may have too low calcium)
3. Economic and Ecological Impacts are expected to be very high, so costs of prevention, containment are worthwhile (CDOW will be estimating economic impacts this summer, agriculture, etc. still unclear).

If these assumptions change due to new information or significantly different levels of infestation in the state, then the responses can be altered.

Level 1 - Parks with a confirmed record of Zebra/Quagga

Response – Highest Protection - Containment

Confirmation Methods: Substrate sample, boat with mussels attached coming out of the water (unless it can be attributed to last location), shoreline rocks, or plankton microscopy with DNA verification.

1. Depending on population size and date of discovery, consider reduced hours/capacity or a temporary boat closure if necessary to ensure containment until containment response can be put in place.
2. Put in place program for inspection and boat washing to minimize risk of transport to the largest extent practical
 - Increase staffing sufficiently FTE (2-3) and large number of seasonals (commissioned, non-commissioned)
 - 24/7 operation or enforced night closure
 - 9 month coverage
 - Work with marina operators to notify all slipped vessels and require mandatory notification of boats coming/going. Inspect all boats at marina (mandatory when leaving, arriving with spot checks or notification of out of state).
 - Alter launch policies to ensure all higher risk vessels are only at control points
 - Mandate all vessels to drain water before leaving and oversee with continuous staffing doing CLEAN, DRAIN DRY Checks
 - Provide intense education to boaters on the issue (signs, pamphlets, contacts).
 - Time stamp boats and inspect vessels on the water longer than 24 hours, CLEAN, DRAIN DRY check on vessels less than 24 hours.
 - Conduct intense plankton and substrate sampling in coordination with CDOW/federal partners to understand distribution and seasonal densities of larvae and adults in this location. Alert and work with downstream parties if a larval 'spike' is observed.
3. Purchase boat washing facilities – at least one permanent unit

Level 2 – Parks with marinas, very high boating levels, very high risk of invasion or major financial investment in boating for State Parks

Response – Prevention “Very High Protection”

1. Put in place inspection program on the way into park to ensure boats are cleaned and drained prior to launch.
 - Increase staffing sufficiently FTE (1) and seasonals (commissioned/non-commissioned).
 - Coverage from 6am-10 pm, night policy of closure or no launching without prior inspection by state inspectors and proof of inspection.
 - 9 month coverage minimum
 - Inspect all boats at marina (coming and going)
 - Mandate all vessels to drain water before entering and leaving and oversee with spot inspections
 - Provide intense education to boaters on the issue (signs, pamphlets, contacts)
 - Coordinate assistance with substrate or plankton sampling with CDOW or federal partners, shoreline surveys with volunteers.

2. Purchase portable or permanent boat washing facilities to be able to decontaminate vessels found with water, plants or mussels

Level 3 – Parks with marinas, high boating levels or higher

Response – Prevention “High Protection”

1. Put in place inspections to cover peak launching periods and try to identify high risks. Educate with the CLEAN, DRAIN, DRY message.

- Increase staffing with 2-6 seasonals (non-commissioned) to conduct marina inspections, standard inspections on the during peak hours, high risk inspection when risk identified (out of state boats, etc.).
 - Coverage during the week for marina and boat ramps during peak launching periods and on weekend for 2 shifts (5 am-9pm or 6am-10pm)
 - 6 month coverage (May 1-Oct 31)
 - Inspect all boats at marina (mandatory for arriving, notification/spot for leaving).
 - Encourage and educate all vessel owners with CLEAN, DRAIN, DRY message. Provide intense education to boaters on the issue (signs, pamphlets, contacts)
 - Coordinate assistance with substrate or plankton sampling with CDOW.
2. If funding is available from grants or water stakeholders for this area, purchase portable boat washing facilities.

Level 4 – Parks with boating, but medium risk

Response – “Active Education and Sampling”

1. Put in place active education, sampling and spot and voluntary inspections

- One dedicated ANS seasonal for 6 months, training provided to FTE staff
- Park FTE will train seasonals for 6 month boating period (May 1-Oct 31)
- ANS seasonal will man an inspection point and conduct education (CLEAN, DRAIN DRY message) and spot inspections at peak launching times. Will focus on out of state and high risks.
- If any boaters request inspections, it will be provided if staff is available, and any staff encountering out of state boats or boaters that report having just been out of state, should be offered a standard inspection and actively educated.
- Encourage and educate all vessel owners with CLEAN, DRAIN, DRY message. Provide education to boaters on the issue (signs, pamphlets, contacts)
- Coordinate assistance with substrate or plankton sampling with CDOW.

Level 5 – Parks with boating, but Low Risk

Response – “Active Education and Sampling”

1. Put in place active education, sampling and spot and voluntary inspections
 - No increased staffing, training provided to FTE staff
 - If any boaters request inspections, it will be provided if staff is available, and any staff encountering out of state boats or boaters that report having just been out of state, should be offered a standard inspection and actively educated.
 - Encourage and educate all vessel owners with CLEAN, DRAIN, DRY message. Provide education to boaters on the issue (signs, pamphlets, contacts)
 - Conduct substrate sampling with staff and report findings to Stewardship and CDOW.

Procedures

Please note the version and date and destroy out of date copies.

Inspection Procedures:

Our main document explaining State Parks ANS procedures

Inspection Type Matrix:

Tables including when to use which protocols and which level parks conduct which type of inspections coming or going

Inspection Flow Chart:

One page that shows when to do a high risk inspection or decontamination

Seal Policy

Explains our 'inspected boat' seal that goes between the boat and the trailer.

Zebra Mussel/ANS Procedures for Colorado State Parks

Version 11, 9/29/08

All State Parks with Boating have to initiate their response to the zebra mussel issue starting now. The key components of the response you need to implement are:

1. **Education** is the primary response. We need to teach and encourage the public to CLEAN, DRAIN, DRY – All boating parks need to implement education now with existing staff. Brochures and signage are being finalized and will be coming to your park soon.
2. **Inspections** will help ensure the public is doing the right practices – all boating parks will have to be able to perform an inspection if requested, high or very high risk parks will receive additional manpower to perform inspections.
3. **Boat Washing** – will be available at high risk parks to deal with any mussels found. Very few boats will need to be washed. Park staff will run the washing for no fee.
4. **Monitoring** – Colorado Division of Wildlife is monitoring for this boating season (2008). Future monitoring may require some participation from Park staff.

What do I need to do about Zebra Mussels at my Park NOW?

You need to start an education campaign with the public right now. Contact Rob Billerbeck for details right now. Public education about boat draining and cleaning has proved the MOST effective way to stop the spread of zebra/quagga mussels in other states.

ANS Mussel Education Plan

Get your staffed trained to do public education starting NOW

Primary Message: **CLEAN DRAIN DRY** your boat between reservoirs!

Secondary Messages:

- Clean Boats, Clean Waters
- Protect your Boating, Protect your Waters
- Don't move a Mussel
- Zap the Zebra
- Stop Aquatic Hitchhikers

Visitor Contact

The biggest step you can take now is to have staff or volunteers out on the boat ramps explaining to people that they need to start showing up CLEAN, DRAINED and DRY, and they need to empty all their water (bilge, ballast, live wells and bait wells) from the boat before they leave.

Education Materials

- **Zap the Zebra Brochures** – Expensive but slick and attention getting. We have limited numbers, so this should be made available in offices/visitor centers only. Deb Duke can do additional printings later in summer as needed.
- **Zebra Rack Cards** – These are the yellow cards that have been distributed to the parks. They are for distribution at park entrance and at boat ramps or on windshields at campgrounds. Provide to boaters at entrance stations, but not to everyone.
- **Posters** – posters are under development and will soon available in several sizes and suitable for putting up on walls in offices, behind glass out in kiosks, or on trifold foamboard for displays at conferences
- **Zebra/Quagga specimens** – 1 specimen encased in plastic ordered for each park – if you need more, contact Rob and they can be ordered for your park out of ANS education budget or you can order directly from 100th Meridian website. We are working on getting some rocks, pipes and

boat motor parts covered in Zebra mussels from Lake Mead. We are trying to get both adults and the small settler stage for training and educational purposes.

- **Signs** – We are shipping signs now.
 - **Entrance signs** – Attention Boaters – warn them they are subject to inspection and inform of new CLEAN, DRAIN, DRY policy. One required at each entrance station.
 - **Inspection Direction/Prepare signs** – Informs that inspections are mandatory and direction to inspection point. Suggests preparing for inspection.
 - **Inspection checkpoint signs** – to be placed at the inspection points.
 - **Boat Ramp signs** – these are a new version of the “ANS stop signs”. These have a clear CLEAN DRAIN DRY message. These signs should be placed both at the top of boat ramps facing away from the water and at the bottom facing toward the water. Replace other ANS signs that lack the CLEAN DRAIN DRY message. Give those to river parks. Put in a request to Rob for how many you need – we have money and can get you signs.
 - Contact Rob Billerbeck at the Denver office to discuss how many signs you need and whether they can be purchased out of the statewide ANS fund.
- **Media** – read up on mussels, be clear on state parks policies on this, and consider an interview with the local paper. We are coordinating many interviews and a big Q&A session of info is available at www.fishexplorer.com.
- **Billboards** – CDOW will be getting out CLEAN DRAIN DRY billboards this summer. They have also coordinated with CDOT to get highway signs to broadcast “Attention Boaters, Stop Aquatic Hitchhikers, Clean Drain and Dry”
- **Mailings** - We have sent out a mailing to all Colorado registered boaters. Included in this package is a copy of that letter.

What resources will I get to implement inspections at my park?

CWCB grant - For Pueblo, we obtained a \$1 million grant from CWCB that paid for most of the response at Pueblo from April 1-June 30, and over \$200,000 was dedicated for statewide education materials and monitoring/scientific studies. Rob Billerbeck will be using some of that education budget to help with signs and pamphlets at some of the parks.

An emergency budget from the legislature just past with a full \$3.2 million budget for State Parks was made available July 1, 2008 for this response. We have the fiscal note for that legislation that details the budget. However, that will be allocated out to parks based on the risk/priority. The region managers and Dean/Larry have made final decisions on those allocations and which parks have which level response. See the attached memos from Dean and Larry for details.

CDOW Risk Assessment –The risk assessment is attached but it still may undergo some changes this summer as new information comes in about temperature effects and chemical characteristics of lakes. CDOW is doing a boater survey and a model that will inform us of where risks are highest with more sophisticated methods. A risk assessment document is attached to this showing what Parks and CDOW staff decided.

How are we going to pay for this long term?

We have an earmark for next year of \$2.6 million, but we will need to find ways to make this more cost effective. Considerations will include:

- More use of volunteers
- Consider adding inspections and decontamination to any new marina lease agreements. Considering contract run inspections or boat cleaning for special events like fishing/sailing tournaments where charging may be appropriate
- Considering charging for boat washing

- Considering fee increases, such as boat registrations, launch fees, out of state boat fees, etc. All of these will be evaluated over time, but no decisions have been made as of yet.

What inspections need to be implemented now?

1. We have 3 different types of inspections to use in different situations:
 - Standard Inspections – For use on the way in to screen and do a quick visual/feel test
 - High Risk Inspections – If there are indications it might be a mussel or other ANS carrier, then this is a procedure for carefully and slowly looking over the entire boat
 - Clean, Drain, Dry Checks – this is a quick procedure for checking a boat on a way out
 There inspections are all explained the Inspection Matrix document and the relative risks of certain activities and types of boats are also explained in that document. If you look that over carefully, then when you look at the forms and checklists, they will make more sense.

The types of inspections all parks should implement immediately NOW are:

1. **Marina boats** are the highest risk, so you need to talk to your region manager and then coordinate with your marina operator. If you can get them to agree to inform you of any boats coming in, particularly commercially hauled boats, then you should ask that you be given a chance to inspect any of these BEFORE they are launched.
2. **Voluntary and spot inspections** – all boating parks need some staff trained and able to do inspections if a visitor asks. Spot checks can be used to educate boaters about CLEAN, DRAIN and DRY. There are a lot of logistics you need to consider now that will be very important for busy weekends this summer.

Where should inspections/draining/boat washing be conducted?

- Ideally inspections and draining of water should be conducted in the same area. Separating those two could be difficult.
- This should be a control point where boats can be clearly prevented from launching, but far enough from the waters edge or boat ramp that a small amount of bilge water couldn't reach the water.
- There also should be slight slope to the area to assist with draining bilge/ballast water.
- It looks like a high percentage of boats (80-95%) are likely to show up dry (completely dry or very little water).
- Boat washing or draining of major ballast water will be need to be at a location carefully identified and worked through with development staff and the land owner.
- A gravel parking lot may be suitable, but check with regional development staff about approval steps concerning the Clean Water Act and dealing with tanks with oil and gas issues.
- If a location is not available yet for major draining, then a boat with large ballast tanks (speed boats/ski boats) that are full may need to be turned away to drain elsewhere.



What are the most important/key points of inspections?

- **Education is more important than inspections.** Not every reservoir in the state will be able to put inspectors in place, so it's key to show the boaters how to inspect their boats

themselves and explain WHY we are doing this. Drive home the reasons why they should want to CLEAN DRAIN DRY every time. Impress on the boater how zebra and Quagga mussels damage boats, fishing and water infrastructure.

- **We are looking for rare events.** This is like airport security. We will have to look at a lot of boats quickly and determine if there is a high risk. If its lower risk, then do a Standard Inspection (quick look, quick feel and be sure it is drained). Then move them along quickly to keep them happy. If there is a high risk then we need to get in a different frame of mind quickly. If you believe the boat has been out of state, in infected waters, or if it has a clear waterline below which there is a lot of 'junk', then conduct a High Risk inspection. Be sure inspectors understand the relative risks of different events and different types of boats.
- **If you find something, then make sure you report and decontaminate.** Follow documentation and reporting procedures and don't let the boater leave with mussels attached. Do everything you can to get their willing cooperation to keep the boat there to decontaminate.
- **More people make it go faster.** More than one person inspecting a boat allows for better educational contact with the boat owner and a more thorough inspection. Also if the inspector is a law enforcement officer, they need to be careful of their firearm while inspecting the boat, and having 2-3 inspectors work on the same boats moves it through more quickly and more safely. So at times/locations where more than one inspector is available, then supervisors should weigh whether its better to have more than one staff person working on the same boat versus having multiple lanes with one inspector at each. Experience suggests less lanes/more inspectors is better.

How do I get my staff trained?

- Coordinate training with Rob Billerbeck out of the Denver office. Rob Billerbeck can visit and go through a short training and do some hands one boat inspections.
- Pueblo and Eleven Mile Spinney Staff have been doing an excellent job and may be able to conduct trainings.
- Some additional trainings with out of state experts will be set up if needed.
- The "Don't Move a Mussel" video and a training slideshow will be provided with these instructions and forms. The video is excellent and all staff working with this issue should watch the whole video.
- Inspections are currently being conducted at many State Parks, so sending staff to work a shift there is an excellent way.
- Supervisors should conduct some training tests, placing some dot stickers or something like pistachio nuts on a boat to ensure inspectors are being thorough. This may need to be done every month or two to keep staff motivated to search thoroughly.

Safety issues

We will have a lot of vehicles and boats moving around with a lot of inspectors ducking their heads under the wheels. Safety will be very important:

- Inspection points should be designed for a lot traffic, and should have clear signs, clear lanes and inspectors wearing orange vests.
- Inspectors should be sure to ask the driver to put on the parking brake and step out of the vehicle, and then they should put chocks under the wheels (inspectors will have to climb and look under the trailer and the inspection points should be on an incline, so we don't want any rolling...)

- For larger craft, we want to get in the vessel to look at bait and live wells. Ask for permission first and ask the owner to climb in first. Then we follow the same way they got in. We need to watch out for the boaters or our staff falling and getting hurt – it will happen at some point unless we are careful.
- On larger craft, ask the owner to kick start the bilge pump to be sure its drained. But be sure to ask the boater to not start the engine, and be sure inspectors are clear of the propellers and of the bilge outlet. Call out CLEAR before they run the bilge pump.
- When inspection is complete, be sure inspectors are clear of the boat and have completed inspecting all areas, and the chocks are removed before informing the driver to get back in the car. Yell out CLEAR so that no one will be hurt as they pull away.
- When a high risk is determined, other inspectors should be alerted that this is a high risk vessels and requires more scrutiny, but using the a verbal cue such as “Hey, be sure you are using Form 2 or the HR form on this” would be better than announcing to the boater that his vessel is being classified as High Risk.
- If boater is uncooperative, or if there are other issues that present a safety or law enforcement concern (firearms, drugs, person seems to be under the influence), then inspector should step away and call a ranger. They should not try to detain the boater if they are uncooperative and aggressive.
- If there is a storm or a medical emergency in the Park, then those public safety issues take priority over inspections.

What is our policy on WET boats –

- Some non- State Parks reservoirs are requiring boats to show up completely dry and turning away anyone with any bilge, ballast or live well water. We can’t require that of our boaters. We want to ENCOURAGE the public to show up dry, but if a boat is lower risk, then draining will be sufficient for most boats entering State Parks. Larvae are less hardy than shelled juvenile settlers or adult mussels, so it’s lower risk.
- However, there are two HIGHER RISK situations with WET boats:
 1. If a boater reports that they have been in infected waters recently (**30 days** or less)
 2. If they have a large volume of water (10+ gallons)
 - Our current policy is to require them to fully drain and go through decontamination for both of these scenarios.
 - The difference in the scenarios is that we will require decontamination for those parks that have heated power washers. Parks without this equipment will need to make a judgement call on how to decontaminate. Parks staff may, in some instances, allow boats with low risk to drain and launch without decontamination. If there is any doubt as to the boat harboring veligers, then a chemical treatment may be in order. An alternative would be to turn them away and tell them they can return when fully DRY. We should have them drain (if they will, at an approved draining location (away from the reservoir) before they leave to hopefully reduce the risk for the next place they put in. This is definitely not the best long-term solution because they are likely to be upset, but also they are likely to go somewhere else and just lie the next time they are asked.

The preferred method for decontamination is hot water pressure wash. We are ordering hot water pressure washers for most of the Parks. We will expedite them as fast as we can. We will use the wash units to wash out live wells, bilge/ballast area and flush the lower unit of engine. We can’t do this on a large volume of boats because its staff intensive. However, if a park does have a boat wash unit, using it for this purpose may be relatively reasonable as an alternative to turning them away or

quarantining them. Blue Mesa claims they are doing this on all high risk boats and it takes about 15 minutes on most of them and is pretty easy and boaters have not complained. Again though, its only boaters that REPORT being on infested waters. The disadvantage if the incentive to lie but if its relatively quick and free, then maybe that incentive to lie isn't too strong. The advantage of applying this only to boats that report being in infested waters is that it won't be a huge number of boats, so it's something we could actually afford to have staff do.

Dry – if the water can be completely drained and dried with a towel or a wet/dry vacuum. These aren't likely to be perfect solutions, but are a possible way to go, depending on the situation.

Another possible solution would be:

Chemical treatment with potassium chloride or bleach or other chemicals. The problem with this is that the time needed for these chemicals to work is too long. At this time this is something that boaters can consider at home, but is not a reasonable solution at our parks for boats entering. CDOW is encouraging boat owners to do this on their own at home to reduce risks. At this time, Parks will offer these as a solution until hot water pressure washers get to the Parks

How do we deal with PWCs?

Personal Water Craft/Jet Skis are trailered watercraft, but they present a lower risk than other types. Some can carry ballast water, and they certainly can hold water. However, at some parks these are allowed to launch at locations other than the main boat ramps. Because they are lower risk and the main boat ramps may get congested on major weekends, it's reasonable to treat these differently and focus more on an education and spot inspection strategy rather than changing launch policies to provide more control. At Pueblo, staff reports that if they had required PWC to launch from boat ramps that would have significantly complicated operations there. However, they have done a good deal of education contacts and spot inspections. Staff reports they have sent some PWC to be washed at a local carwash prior to putting in because they were very dirty/muddy and it was impossible to conduct an inspection for mussels. If a watercraft is so dirty/muddy that a reasonable inspection can't be conducted, then this is a reasonable request.

What do we do if we find a mussel?

See the Specimen Collection Instructions form for details. Basically you will want to:

1. Take several digital photos BEFORE it is detached (from a boat, a buoy, a rock, etc.)
2. Send the photos and a description of:
 - a. How and where it was found
 - b. Who found it
 - c. If it was firmly attached to a surface or not
 - d. Everywhere the boater reports having been in the last 6 months (this is VERY important – where did they GET mussels and where could they have ALREADY SPREAD them).
3. Send this information immediately to:
Rob.billerbeck@state.co.us, greg.gerlich@state.co.us, and Vicki.Milano@state.co.us
4. Call Rob Billerbeck – 303-548-6169
5. Scrape off a few mussels and if there is any living tissue, then put them in an ethanol sample jar (grain alcohol, not rubbing alcohol). If no living tissue Rob will provide information on where to send the sample for formal ID, probably will include DNA verification. If it was found on a boat – then do not allow the boat to leave – fill out a high risk inspection and decontamination form as you proceed with decontamination. See below for whether to quarantine after decontamination.

What options do we have for decontamination if we don't have a boat wash unit?

Options will vary depending on the infestation on/in the boat, as well as what's available at the park:

1. If there is a cold water sprayer at the maintenance shop, this could be used with and a scrub brush (if this is at a maintenance area or a marina, you obviously want to be sure you aren't knocking live mussels off into the water!). This is not ideal, hot water or chlorine or potassium chloride solutions are better, but this is a viable option if nothing else is available.
2. Could use a Hotsy at the marina if they have one – again be sure waste will not go in the water. If there is a charge from the marina, then you will need to offer the boater a choice to use that one and pay the marina, or use one of the other free methods or quarantine.
3. If the boat has a very high density of infestation then these methods may be unlikely to work to completely decontaminate. Getting a portable wash unit from another park or getting this boat to another location with a portable wash unit may be an option, but the boater **MUST** not be allowed to leave without escort to that location. Again quarantine may be the best option if there are too many complications with getting this worked out.
4. Quarantine – see the 100th meridian website for the proper number of days. This is not ideal, as it will likely cause a confrontation. Check with your supervisors and with Rick Storm for legal issues. If we are sure there are mussels and we can't easily clean them, then this is important to do. Even after the quarantine, they will still need to clean their boat prior to putting in at another reservoir (at least any with inspectors).

At this time using a scrub brush and 6% chlorine bleach or potassium chloride solution is being considered, but is secondary to hot water and pressure wash. With chemicals, the contact time is not sufficient to ensure killing of the mussels, so if there is any possibility of live mussels surviving, the hot water and pressure wash option should be used.

What are decontamination policies if/when we do have a boat wash unit?

- Follow the decontamination procedure on the High Risk inspection form and fill out the form completely and keep photo documentation of the boat prior to washing and during and after washing.
- Only Parks staff or trained concessionaires (or possibly volunteers) should operate the high pressure high temperature wash units.
- State Park policy is that we will only wash boats that have been found to have mussels on it or in for flushing water from boats that have recently been in infected waters. We won't wash boats for the public just if they ask us to – there needs to be a possible ANS.
- Division Staff decided that State Parks policy for the summer of 2008 is that there will be no charge for boat washing by state employees. We can't guarantee this policy won't change in the future, but it won't this summer.
- If marinas operators or other concessionaires want to charge for optional approved decontamination, then this is possible and desirable in the long run. You should work out a solution to allow for this and work through lease modifications with region advice and support. This may be the way to make this cost efficient in the future as the number of 'dirty' boats is likely to increase each year.

Should we still Quarantine after Decontamination?

This is a difficult issue. This has been discussed at the highest levels in State Parks, and here is the direction from above:

- If the boat can be cleaned and staff has a high degree of confidence that no live mussels could be left in any small crevices, then the boat can be released.
- If the boat has a high density of mussels or if there is a doubt as to whether it all live mussels have been killed and removed, then park staff should quarantine for the drying time determined from the 100th meridian website (it has a time calculator based on temp and humidity for the number of day to quarantine a boat to completely ensure mussels can't survive).

Further steps that must be taken to determine this:

- The decision to quarantine or not must be made by the Park Manager (or acting Park Manager)
- The boat must be inspected a second time after decontamination by a person other than the one that did the decontamination to have a different set of eyes go over it fully with the High Risk Inspection form. The person should take ALL the time they need and go over it VERY carefully.
- The decision to quarantine a boat or not should also be based two additional factors
 - Identity of the specimens found (if the ID seems very certain it is zebra/quagga mussels, then quarantine would be very justified, if less certain, we may be reluctant to quarantine).
 - The likelihood of mussels being alive – how long was the boat out of the water (more than 30 days is lower risk). This should be based on observation as well as boater response to when it was last in the water.

How many 'dirty boats' do we expect to find?

Probably very few this year, likely less than 50-100 in the entire state. At the California border they found 100 boats with mussels, mostly out of Havasu in the past year. However if or when the populations explode at Lake Granby, Lake Powell, Pueblo, or additional lakes in Kansas, then we will start having more sources closer by. This is likely in the next few years. Also it is possible it will be found in a few additional lakes in our state or surrounding states due to increased monitoring efforts. But every boat we stop is a success. Also we will never know how effective draining of water is – we may have stopped much more by educating and enforcing the practice of draining.

We need to track number of inspections we have performed and which have been STANDARD, HIGH RISK or CLEAN, DRAIN, DRY checks. This will help explain what we are accomplishing. I think also tracking boat washing or treating/washing water from boats that have been in infected waters is necessary.

How do we deal with Live Bait?

- Remember, live bait is not legal west of the Continental divide or about 7,000' in Colorado, except at Navajo Reservoir.
- Our policy is to ask where the boater got the bait. If it's from home or baitshop, they can launch. If it's from a lake or they don't know, the bait wells must be emptied/ drained prior to entering a State Park reservoir.
- If a live bait well is filled with ice and beer, it does not need to be drained and emptied – mussels are highly unlikely to be transmitted in an iced container.
- A new, clean container filled with water from the reservoir they are at would be acceptable for transfer.
- When they leave the reservoir, all unused bait should be disposed of in the trash and the live bait well completely drained.

There is not a perfect solution for these issues yet. There may be ways to use receipts from a bait shop as a way to verify safe bait, or we may be allowed to treat live bait wells/buckets with potassium chloride, but we are waiting on more guidance from CDOW on this.

How do we do Monitoring for Zebra Mussels?

Sampling methods for zebra/quagga mussels are not as sensitive for early detection as we would like. So using several methods to look for them is necessary.

- **Substrate samplers**
 - The samplers are simply some plastic tubing and netting that can be put underwater on a rope and can be pulled up every 2 weeks to see if any mussels are attached.
 - They will typically be placed on marina docks, close to dam structures and on buoys.
 - Vicki Milano is coordinating putting out 2-10 samplers at each lake and should be able to provide a map, put clear tags on the samplers and provide a spreadsheet with detailed descriptions of each one.
 - Park staff's may have to assist with getting CDOW staff to some of these, but that should only be at a few parks and CDOW will ask for that help in advance.
 - Anything found should be documented and reported immediately with the same procedures as mussels found on boats.

- **Plankton tow surveys**
 - These are a special net survey done vertically in the water to catch planktonic larvae.
 - CDOW or federal agencies will be responsible for this at most parks, at some parks we will likely have to work out an agreement with companies doing other water quality testing for us, or do these through the new Parks ANS biologist.
 - Park field staff may have to assist by providing a boat if the surveys are to be performed by boat.
 - Nets should not be moved between infected and uninfected waters (don't share nets with Pueblo!) and they should be decontaminated thoroughly between uses, to avoid getting a false positive.

- **Shoreline surveys**
 - Zebra/Quagga have been found in many locations on rocks on the shoreline.
 - A volunteer protocol is being written for shoreline surveys and reporting.
 - Faye or the Stewardship staff can help you organize some volunteer searches of your shoreline.

- **Marina Boats**
 - All marina boats should be checked coming and going. They are the most likely to have zebra/quagga mussels attached. So inspecting those coming AND going is actually another way to survey for zebra mussels in the lake – it's a big substrate sample.

How much has the public complained?

- The boating public seems to be getting the message that this is important, and the fact that a few reservoirs have been closed to boating is helping with compliance. Once people see the procedures are pretty efficient and there is no cost, they seem to be agreeable about it all. The biggest problem Pueblo has had is that visitors want to ask a lot of other questions of the inspectors.
- The public has been very supportive and cooperative with the inspection program, even with a big fish tournament. Most visitors reported that they had heard a lot about zebra mussels and understood the idea. Again the free and quick inspections and the threat of closure of the reservoirs seem to be prompting a lot of compliance.

- At Stanley and Aurora Reservoirs, they have had good compliance with even more severe restrictions and longer procedures.

What are common questions/misconceptions

Q: Is this just a State Parks way to charge additional fees?

A: No, right now all state inspections and any decontamination processes required will be free.

Q: Is this an excuse to do inspections for all sorts of things beyond just ANS?

A: No, non law enforcement (LE) inspectors are looking for ANS only, but they will still have to inform rangers/LE personnel of any obvious safety issues or obvious legal concerns. If rangers perform the inspections then they will be compelled to deal with issues that they come across even though their primary reason for inspecting will be ANS.

Q: Do the inspections take a long time or cause big back ups?

A: No, most inspections are quick, under 3 minutes and Pueblo and Eleven Mile have not had long waits.

Q: Why are inspections at some places but not others?

A: Inspectors will be phased in at a number of locations across the state, but there will never be enough money to have inspectors everywhere. That is why it is KEY that the boaters themselves practice CLEAN, DRAIN and DRY and inspect their own boats and report findings.

Q: Isn't the spread of these inevitable anyway?

A: No, states with a lot of education and some inspections have significantly slowed or even stopped the spread. An even if we only slow it, each year could save us tens to hundreds of millions of dollars and will protect our game and endangered fish for that many more years.

Q: Aren't zebra mussels actually good for fishing or don't they improve water quality?

A: No. They significantly impact many fish species by removing most of the nutrient base, but some species are less affected if they don't depend on those nutrients. A few species may do better, but a lot of major game fish and commercial fish have declined very significantly with zebra mussel invasion. They do clear the water significantly, but that is not necessarily good. They eat all the good algae and leave the problematic algae and the clear water provides more habitat for water weeds to grow.

Q: Isn't there anything that eats them?

A: There is, but so far no biocontrols have been effective. Some predatory fish from their native waters were introduced to the great lakes, but they did not control the zebra mussels there, and in fact had major impacts to species such as small mouth bass. The public should NOT try to introduce new fish predators. A new bacterial biocontrol is showing promise and may be available in a few years.

Q: Can they be spread by birds?

A: Yes theoretically, but it is very insignificant vector for transferring these species to new watersheds. All new locations where they have been found have been in high use boating areas, not wildlife refuges. Recreational boating is the primary method of spread in the Western US and it is the one we can control.

Q: Is this an over-reaction, shouldn't we wait and see what will happen in the next few years?

A: No, any states that have waited have found that it has spread significantly while they waited and they are almost impossible to get rid of once they are in a system.

Q: Will we get rid of them in Lake Pueblo or Lake Granby?

A: It's not very likely. Only one water body in the entire country got rid of them and that was a 12 acre isolated quarry where a huge amount of Potassium Chloride was used to eradicate them. No larger bodies of water have been able to get rid of them, even with drawdown.

Q: Should I stop boating at Lake Pueblo or Lake Granby?

A: No, the zebra mussel population there is at a very low level, so you just need to take some precautions to CLEAN, DRAIN and DRY very well between Pueblo and other places and you will do fine. Right now some lakes in the state will treat you differently if you have been in Pueblo, but we are working on some ways to communicate to reduce problems with this. Just clean and DRY and you should be in good shape.

Q: How are you going to wash thousands of boats?

A: We don't plan to. Other agencies are using boat washing differently, but we are only going to wash boats actually found with mussels, or possibly on boats that have been in infested water very recently as a way of decontaminating wells, bilge and ballast. We expect to only wash a small number of boats.

Q: Are you going to give a ticket to anyone found with mussels on their boats?

A: No, the idea of the ANS law is only to fine or prosecute people who don't comply with inspections, decontamination or quarantine?

Q: Are you going to quarantine a lot of boats?

A: No. Some other agencies are using quarantine differently, but we would only be use this option on a boat found with actual mussels, and we would use all the tools we have available to try to decontaminate and make quarantine unnecessary. If quarantine was needed, then it could be for as short of a period of time as 5 days or as much as several weeks, but again it would be option of last resort to ensure that mussels don't spread.

Q: Are they harmful to humans?

A: Not directly. They do not represent any direct health risks to humans when they are in a waterway, but if there is a large population in a lake, then the shoreline can have sharp shells.

Q: Can you eat them?

A: No, you shouldn't. They bioaccumulate heavy metals and have caused some problems with birds that eat them because of the metals, so we can't just steam them and eat them with butter to get rid of them.

Q: What do we do if a boat owner asks an ANS Inspector for a Boat Safety Inspection?

A: As an ANS Inspector, your primary mission is to inform the public about ANS and perform inspections. Your response in this instance is totally dependent on your workload at the moment and the availability of qualified boat safety inspectors.

COLORADO STATE PARKS ANS INSPECTION MATRIX

Draft Version 3 dated 5/26/08

Forms and Procedures

DEFINITIONS			
TYPE OF INSPECTION	TYPE OF WATERCRAFT	DESCRIPTION	EST. TIME
Standard Inspection	All Trailered Watercraft	Provide Handout, Interview And Exterior Inspection Based On California Border Protocol. Ensure Drained.	2-3 min
High Risk Inspection	Any Trailered Watercraft Identified As High Risk, or if Watercraft Owner requests an inspection	Interior And Exterior Inspection Based On Lake Mead Protocol. Ensure Drained.	Variable 5-25 min
Clean Drain Dry Check	All Trailered Watercraft	Time Stamp Collection. Rapid Exterior Check. Ensure Drained.	1 min

PROTOCOL FORMS	
PROTOCOL USED	PROTOCOL FORM AND USE
Standard Inspection	Checklist as Guidance, No Forms Filled Out
High Risk Inspection	Form Must Be Filled Out
Clean Drain Dry Check	Collect TimeStamp (If issued). Ensure Watercraft is Drained and Dry. No Forms Filled Out.

Risk Factors (for Mussels and Other ANS)

WATERCRAFT USES AND ACTIVITIES	
ACTIVITY	RISK FROM ACTIVITY
Barges, Dredging	High Biological Risk
Fishing Tournaments	High Biological Risk
Power Boat Races	High Biological Risk
Water Skiing Clubs	High Biological Risk
Sail Boat Regattas	High Biological Risk
Out of State Use	High Biological Risk
Marina Slipped Boats, Particularly Commerially Hauled	High Biological Risk
Work Boats (agency boats going to several reservoirs)	Medium to High Biological Risk
Boats Moored overnight	Medium to High Biological Risk
Day use boats	Low Biological Risk on Hulls, Medium Risk in Ballast or Bilge or plants hanging off

WATERCRAFT RISK TYPES	
ACTIVITY	RISK FROM ACTIVITY
All Trailered Watercraft	
House Boats	
Cabin Cruiser	High Biological Risk - give very thorough inspection
Ski Boats with Ballast Tanks	Medium to High Biological Risk, risk of mussels on hulls or larvae in bilge/live bait well. Verify no mussels on hull, engine, trailer and verify Ballast, Bilge, Live Well are dry. Verify no plants hanging off.
Large Open Boat	
Sail Boat	
Smaller Open Boats with outboard motors (no live wells, no bilge tanks)	Low Risk - just verify no mussels on trailer and no live bait and no plants.
Personal Watercraft (PWC, jetskis)	Low Biological Risk - verify no mussels on trailer and no ballast and engine water kicked out.
All Handlaunch Craft	
Canoes, Kayaks	
Belly Boat, Inflatables	Very Low Biological Risk, Educate public to dry.
Equipment	
Waders, Gear	
Pets, Decoys	Very Low Biological Risk, Educate public to dry.

Response Levels, By Park Priority/Risk Level

CONTAINMENT PARKS, PARKS WITH CONFIRMED ZEBRA/QUAGGA MUSSEL

Level 1 Response, Highest Protection, Focusing on Containment

TYPE OF WATERCRAFT	IN	OUT
Marina Boats, particularly commercially hauled	Notification Required, High Risk Inspection Spot Checks	Mandatory High Risk Inspection
All Trailered Watercraft	Standard Inspection Spot Checks, if Risks Identified, then High Risk Inspection	If less than 24 hrs, then Mandatory Clean, Drain, Dry Check
		Any Watercraft On The Water Longer Than 24 Hours, then Mandatory High Risk Inspection
PWC	Education Contact	Education Contacts on All, Clean, Drain, Dry Spot Checks
All Handlaunch Craft	Education Contact	Education Contact

PREVENTION PARKS - VERY HIGH RISK LEVEL, PARKS WITH VERY HIGH BOATING LEVELS

Level 2 Response, Focusing on Prevention, Very High Protection

TYPE OF WATERCRAFT	IN	OUT
Marina Boats, particularly commercially hauled	Mandatory High Risk Inspection	Notification Required, High Risk Inspection Spot Checks
All Trailered Watercraft	Standard Inspection, if Risks Identified, then High Risk Inspection	Clean, Drain Dry Spot Checks
PWC	Education Contacts on All, Standard Inspection Spot Checks	Education Contact
All Handlaunch Craft	Education Contact	Education Contact

PREVENTION PARKS - HIGH RISK LEVEL, BOATING WITH MARINAS, HIGH BOATING LEVELS

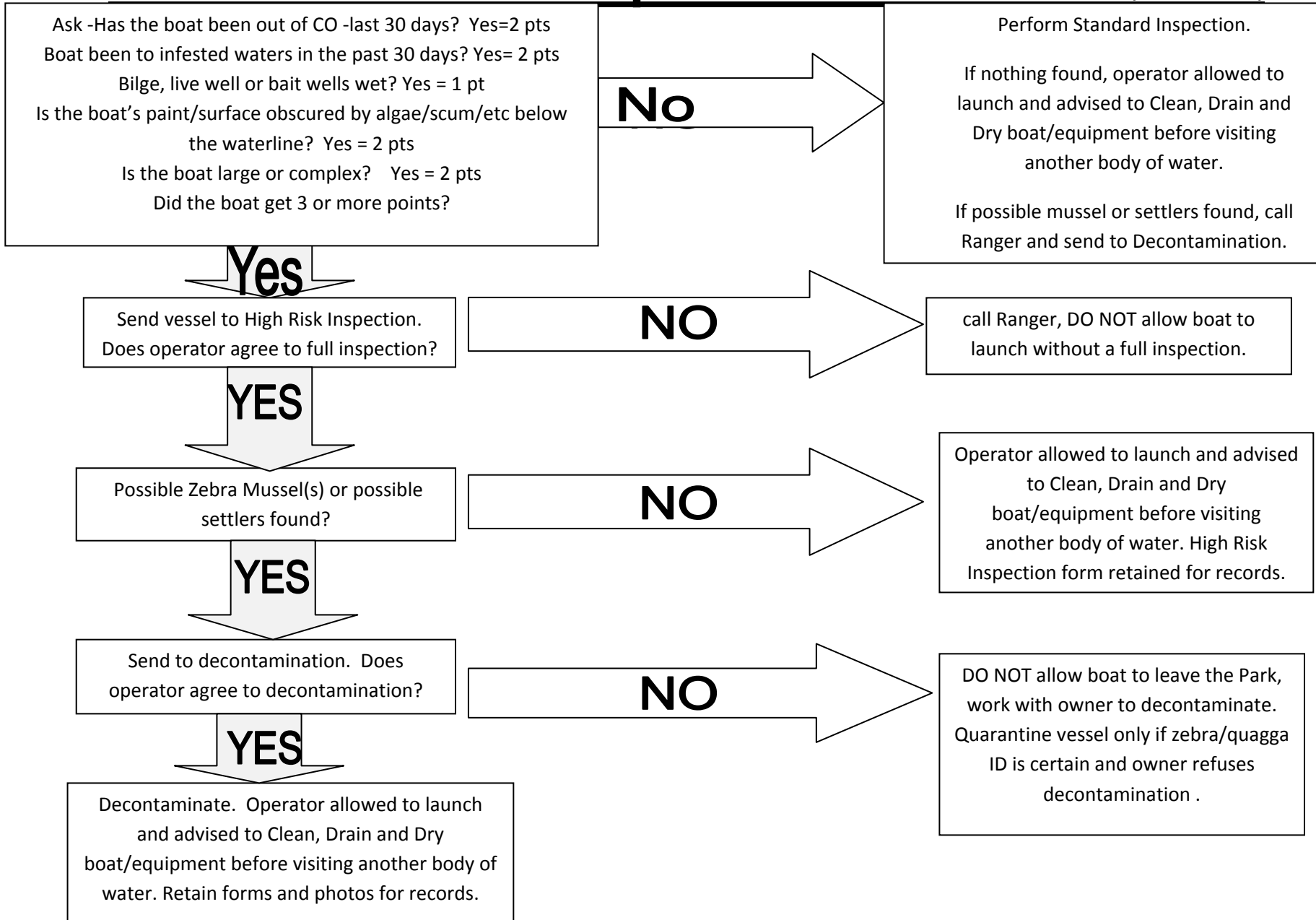
Level 3 Response, High Protection, Focusing on Prevention

TYPE OF WATERCRAFT	IN	OUT
Marina Boats, particularly commercially hauled	Mandatory High Risk Inspection	Notification Required, High Risk Inspection Spot Checks
All Trailered Watercraft	Education Contacts. At peak launching dates/times, Standard Inspection, if Risks Identified, then High Risk Inspection	Clean, Drain Dry Spot Checks
PWC	Education Contacts on All, Standard Inspection Spot Checks	Education Contact
All Handlaunch Craft	Education Contact	Education Contact

PREVENTION PARKS - MEDIUM TO LOW RISK LEVEL, PARKS WITH LOW RISK BOATING**Level 4 Response, Active Education**

TYPE OF WATERCRAFT	IN	OUT
Marina Boats, particularly commercially hauled	Mandatory High Risk Inspection	Notification Required, High Risk Inspection Spot Checks
All Trailered Watercraft	Education Contacts on All, At Peak launching dates/times, Spot Checks using Standard Inspection, if Risks Identified, then High Risk Inspection	Clean, Drain Dry Spot Check
PWC	Education Contacts on All, Standard Inspection Spot Checks	Education Contact
All Handlaunch Craft	Education Contact	Education Contact

State Parks Boat Inspection Flow Chart (Ver 3, 8/13/08)



Colorado State Policy for “Inspected Boat” Seals

Version 5, 8/7/2008

This is the “Inspected Boat Seal” policy for State Parks. It will reduce the time for inspections at busy reservoirs and provide a reasonable way to communicate risk between reservoirs and agencies statewide.

We will use two colored seals to communicate risk to everyone in the state:

TYPE OF SEAL	INSPECTION TYPE	WHEN/HOW APPLIED	USE
GREEN	High Risk Inspection (with form filled out)	This could be applied <u>only</u> after a High Risk Inspection on the way out of a reservoir. That inspection would be a very thorough search of interior and exterior and only at reservoirs with that are not currently infested with ANS.	GO – with this seal, they can launch at any state reservoir without an additional inspection. They just need to pull up to an inspection point to be checked to ensure seal is intact, but then it would be allowed to launch without further inspection.
YELLOW	Clean, Drain, Dry check on the way out - used when the boat had a standard inspection coming in. Standard Inspection on the way out – used if boats is being pre-inspected.	This could be applied at any reservoir on the way out after a clean drain dry check. Typically the boat would have also had a standard inspection on the way in. Inspectors would ensure it was drained and there were no visible plants or animals and then apply the seal.	CAUTION – Check prior to launch. This would indicate the <u>location and receipt date need to be checked</u> . If it had been out of the water for longer than the Meridian drying time, or the boat was sealed at the same location it was launching at, then it would be allowed to launch without any further inspection. If it was sealed at a different location and it was less than the drying time, then it will require a standard inspection.

At infested waters, such as Lake Pueblo or Granby Lake, we would apply a yellow seal on the way out if it has been inspected. However, we would be unable to apply a green seal because we could not verify that it was dry as we would only be draining at that time. If we move to a point where we are charging for boat washing, then it is possible we could use the boat wash to actually clean a boat with no visible contamination and/or use potassium chloride to decontaminate water. These would give us enough assurance to have a green seal.

Seals

Seals will be placed between the eye hook and the trailer as a boat is leaving a reservoir. The seal is a metal cable and a plastic cable lock with a plunger that can be pushed in and then can't be removed without destroying the cable lock.

- This ensures that once the boat is inspected and the lock is put on then the boat has not been moved off of the trailer and therefore, it has not been in any other water bodies.
- The cable locks are preprinted with a serial number and location.
- We will supply the boater with a written receipt showing the date of the inspection.
- This tag and receipt communicates where and when the boat was last in the water and document that it was inspected.

Important Information

These seals should not be explained or referred to as “clean boat seals” – but rather as “inspected boat seals”. We will never be able to guarantee that these boats are clean. However it is critical that we only apply these seals to boats that have been properly inspected. We have to be diligent. If a boat with our seal is later found to have ANS on it, then it would seriously undermine our program. Please check boats carefully.

Resources

Included in this section are:

Inspection Equipment List

Zebra/Quagga Mussel Map

Known Infested Water List

Recommended Drying Time Information

State Parks – Zebra/Quagga Response
Suspected Aquatic Nuisance Species Specimen Collection Instructions
Version 3, 8/06/08

Use these instructions when you find any suspected ANS. You must get a specimen, preserve it correctly, and ship it to Vicki Milano at Colorado Division of Wildlife for positive ID.

1. **Call Rob Billerbeck** at 303-548-6169 (cell) with the message that you have a suspected zebra mussel or other ANS
2. **Take digital pictures of the boat or area found,**
 - a. An overview of the entire boat,
 - b. The rear of the boat (for name verification on some vessels),
 - c. The registration number and
 - d. The area of the boat where the specimen was found.
3. **Take digital pictures of the specimen,**
 - a. Take an overview of the entire area,
 - b. Take a close up on the specimen, especially any byssal threads,
 - c. Take a picture with a pencil, penny or other common object to show relative size of the mussel.
4. If the mussels are wet/live/closed, **remove** as many specimens as will fit in the specimen **vial**. If the specimen is dry/dead/open, **remove** as many specimens as will fit in the specimen envelope.
5. **Place** the specimens in the vial/envelope and if using a vial, fill the vial 1/4 full with Everclear, fill the remainder with tap water. Do not use rubbing alcohol.
6. **Tightly close** the vial/envelope.
7. **Write** the date/location and park contact person on the vial/envelope with a permanent marker.
8. **Place** the vial/envelope in a ziplock bag.
9. **Place** the ziplock bag containing the vial into a Fedex mailer.
10. **Fedex** the package to Vicki Milano, CDOW, 122 E. Edison, Brush, CO 80723
Phone: 970-842-6308
11. **Call Rob Billerbeck** at 303-866-3203 x4341 and Vicki Milano at 970-842-6308 with the message that the suspected ANS package is on it's way to Vicki via Fedex.

Equipment List for Inspections

Bold Text indicates purchased by Denver Office, provided to Parks

Traffic Direction

Signage identifying inspection station.

Traffic cones

Orange traffic safety vests

Direction signage if needed.

Traffic signboards if needed (rentals)

Inspection Equipment

Crescent wrench to take out bilge plugs (9/16" socket also handy)

Digital Camera

Hand wipes

Hand sanitizer

Paper towels

Inspection mirrors

Flashlights

Magnifying glass

Sample collection kit (bags, checklist, etc.)

Work lights for night inspections and associated utilities or generator if needed

Radios

Associated staffing equipment = shirts, badges, LE gear if LE

Chocks for the trailer

Rolling stepladder for boat access (optional)

Inspection Forms/Tracking

Clipboards

Pens/pencils

Inspection report forms

Hand counter to keep track of clean, drain, dry or standard inspections

Education Materials

“Zebra Rack Cards” brochures

Boating regulation brochures

Fishing regulation brochures

Maps of reservoir

Supply of voluntary statement forms for complaints (none needed so far)

Staffing Equipment

Chairs

Access to drinking water

Access to restrooms

Access to shelter in case of weather

Sun block

Trash can

**Zebra/Quagga Mussels are known or suspected to be
in the following waters (as of November 2008):**

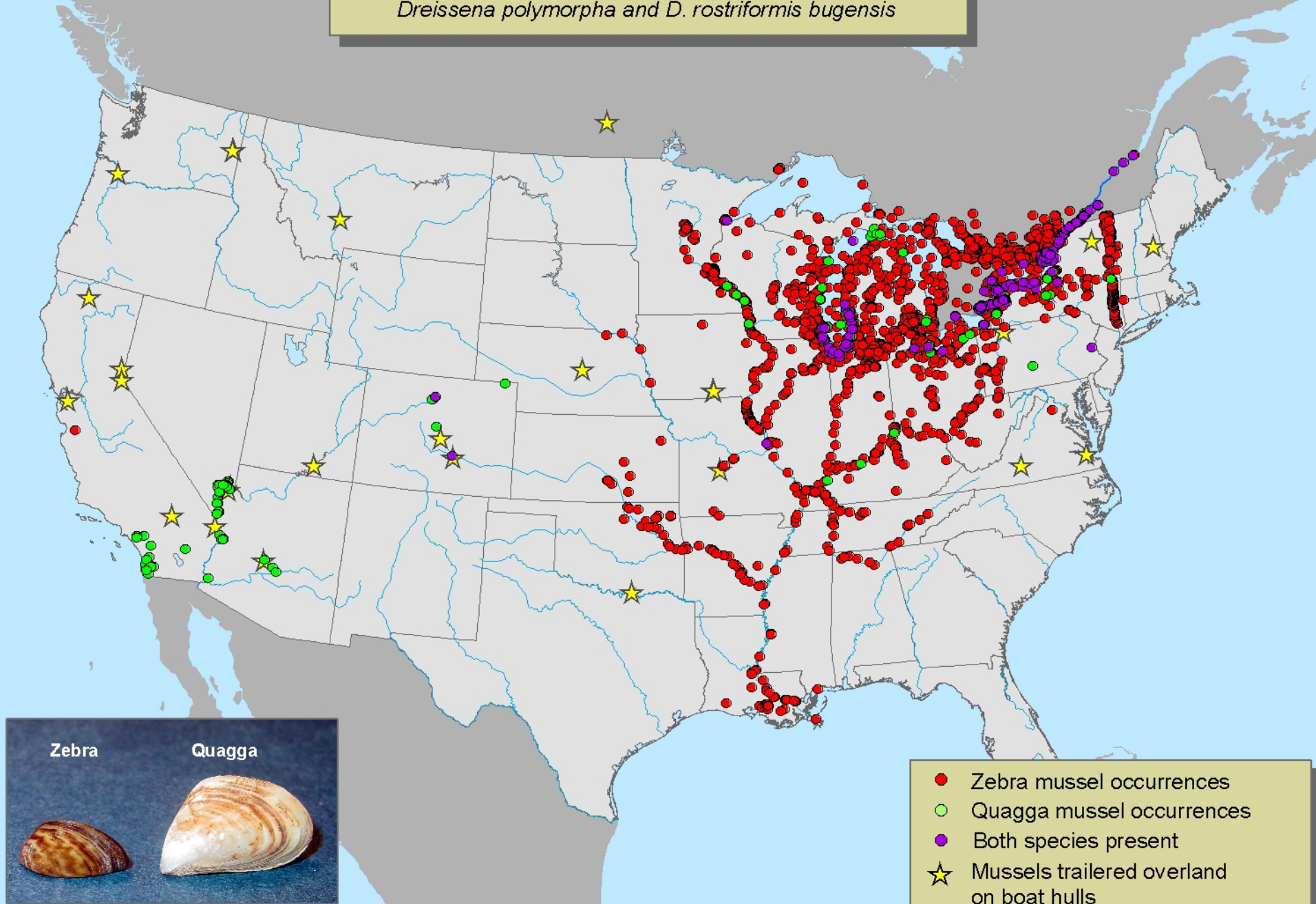
<p><u>COLORADO</u></p> <ul style="list-style-type: none"> -Granby Lake -Grand Lake -Jumbo Lake -Pueblo Res. -Shadow Mtn Res. -Tarryall Lake -Willow Creek Res. <p><u>ARIZONA</u></p> <ul style="list-style-type: none"> -Lake Mead -Lake Powell -Lake Mohave -Lake Havasu -Central Arizona project canal -Lake Pleasant -Imperial Dam -Salt River <p><u>CALIFORNIA (mostly southern)</u></p> <ul style="list-style-type: none"> -Copper Basin Reservoir -Dixon Reservoir -El Capitan Reservoir -Irvine Lake -Lake Havasu -Lake Hodges -Lake Jennings -Lake Mathews -Lake Miramar -Lake Skinner -Lower Otay Lake -Murray Reservoir -Olivenhain Reservoir -Rattlesnake Reservoir -San Vicente Reservoir -Sweetwater Reservoir -Imperial Dam -San Justo Lake -Colorado river at Parker dam -Colorado river aqueduct at Hayfield <p><u>KANSAS (mostly eastern)</u></p> <ul style="list-style-type: none"> -Cheney -El Dorado -Lake Afton -Marion -Perry -Upper Walnut River -Winfield City Lake -Winfield County club pond 	<p><u>NEBRASKA (eastern)</u></p> <ul style="list-style-type: none"> -Offutt Air Force Base -Missouri River <p><u>NEVADA</u></p> <ul style="list-style-type: none"> -Lake Mead -Lake Mohave <p><u>OKLAHOMA (mostly eastern)</u></p> <ul style="list-style-type: none"> -Skiatook lake -Oologah lake -Kaw lake -Keystone lake -Grand Lake O' the <p>Cherokees</p> <ul style="list-style-type: none"> -Lynn Lane Reservoir -Sooner Lake -Arkansas River <p>(multiple locations)</p> <ul style="list-style-type: none"> -Verdegris River -Middle Bird Creek above -Sequoyah National <p>Wildlife Refuge</p> <p><u>UTAH</u></p> <ul style="list-style-type: none"> -Lake Powell -Electric Lake 	<p><u>ALABAMA, ARKANSAS, CONNECTICUT, IOWA, ILLINOIS, INDIANA, KENTUCKY, LOUISIANA, MICHIGAN, MINNESOTA, MISSOURI, MISSISSIPPI, NEW YORK, OHIO, PENNSYLVANIA, TENNESSEE, VERMONT, WEST VIRGINIA, WISCONSIN,</u></p> <p>These states have too many infected water bodies to list so you should consider any water bodies in these states as potentially infested</p> <p><u>Also Ontario and Quebec Provinces in Canada</u></p>
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As of August 2008, no mussels known or reported in Wyoming or New Mexico.

Updates available from USGS at:
<http://nas.er.usgs.gov/taxgroup/mollusks/zebramusssel/>

Zebra and Quagga Mussel Sightings Distribution

Dreissena polymorpha and *D. rostriformis bugensis*



Recommended Drying Time, In Days, for Colorado State Parks

Adapted from 100th Meridian Recommended Quarantine Time Web Application

Version 1, 8/15/08

State Park	Month											
	January	February	March	April	May	June	July	August	September	October	November	December
Arkansas Headwaters	73	73	73	46	29	19	12	19	19	29	73	115
Barr Lake	28	28	28	18	11	7	5	7	7	18	18	44
Boyd Lake	28	28	28	18	11	7	5	7	7	18	28	44
Chatfield	28	28	28	18	11	7	5	7	7	11	18	28
Cherry Creek	28	28	28	18	11	7	5	7	7	11	18	28
Colorado River	28	28	18	18	11	7	5	5	7	11	28	44
Crawford & Sweitzer	28	28	28	18	11	7	5	7	7	18	28	44
Eleven Mile/Spinney Mtn	51	51	32	32	13	13	8	8	13	21	32	51
Highline Lake	28	28	18	18	7	7	5	5	7	11	28	44
Jackson Lake	28	28	28	18	11	7	5	5	7	11	18	44
John Martin Reservoir	28	28	18	18	7	5	5	5	5	11	18	28
Lathrop	32	32	32	21	13	8	8	8	8	21	32	51
Mancos	28	28	18	18	11	7	5	5	7	11	18	28
Navajo	51	32	32	21	13	13	8	8	13	21	32	51
North Sterling	44	28	28	18	11	7	5	5	7	11	18	44
Paonia	28	28	28	18	11	7	5	7	11	18	28	44
Pearl Lake	73	73	46	29	29	19	12	12	19	29	46	73
Ridgway	73	73	46	29	19	12	12	12	19	29	46	73
Rifle Gap & Harvey	32	32	32	21	13	13	8	8	13	21	32	51
San Luis	44	44	28	18	11	11	7	7	11	18	28	44
St. Vrain	28	28	28	18	11	7	5	7	7	11	18	28
Stagecoach	73	73	46	29	19	19	12	12	19	29	46	73
State Forest	73	73	46	46	19	19	12	12	19	29	46	73
Steamboat	73	73	46	46	19	19	12	12	19	29	46	73
Sylvan Lake	44	44	44	28	18	11	7	11	11	18	28	44
Trinidad	32	32	32	21	13	8	5	8	8	21	32	51
Vega	51	51	32	21	13	13	8	8	13	21	32	51
Yampa/Elkhead	32	51	32	21	13	13	8	8	13	21	32	51
Average Days by Month	42.4	41.8	33.0	23.7	13.9	10.7	7.3	8.3	11.1	18.9	31.0	50.6
Denver Metro Area	28	28	28	18	11	7	5	7	7	11	18	28

For highlighted cells, use cell value or 3 days if continuous freezing temperatures

This table is for use in calculating drying time, in days, at State Parks in Colorado. Drying time is most frequently used in conjunction with yellow wire seals.

This table is provided as a guide. Other factors such as local weather knowledge, unusual weather other factors may influence your application of these numbers.

Forms

Please note the version and date and destroy out of date copies.

Print these forms for use at your park.

You need a large number of the Standard Inspection Checklists for each inspector.

You need a small number of High Risk Inspection Forms to deal with high risk boats.

You need a small number of Decontamination forms, Specimen Collection forms, Inspection Seal receipts and Clean, Drain and Dry forms, for occasional use.

COLORADO STATE PARKS STANDARD ANS INSPECTION CHECKLIST

For use on trailered watercraft entering a park
Version 10, 7/23/2008

These are instructions. This is not a form to fill out. This protocol should take 2-3 minutes to complete.

1. MAKE EDUCATION CONTACT

- Introduce yourself and explain you're **inspecting for Zebra mussels**
- Explain WHY mussels are bad and its important to CLEAN, DRAIN DRY
- Hand them a mussel pamphlet.
- Ask them to **Turn Off Engine**, set **Parking Brake** and Step out
- Put **Chocks** under trailer wheels

2. DETERMINE RISK FACTORS

- **Check** for Green or Yellow State Park tags – **Ask for Inspection Strap Receipt**. See Instructions on Sheet.
- **Out of State?** Based on tags/CL#, ask if boat has been out of CO in last 30 days? 2
- Been in **infested waters** in last 30 days? (Pueblo, Granby, Powell, Mead, Havasu, San Diego, Kansas, Michigan, etc) 2
- **Dirty/Crusty/Slimy** below waterline? 2
- **Big/complex** boat? 2
- **Ask about water** on board. Is this a **Wet** (water in tanks/wells/bait wells) boat? 1

If **3 or more** points, then STOP switch to **HIGH RISK** inspection form!!!!

If **wet and in infested waters** in last 30 days, then **call Ranger, send to Decontamination!**

3. RAPID EXTERIOR INSPECTION

- **Explain/educate** about what you're looking for
- **Look and feel hull** - ridges/seams, recessed bolts for attached mussels.
- Carefully check the rear of boat - intakes, motor, and lower motor areas, propeller.
- Carefully check trailer lights/electrical, license plate and trailer pads.

If plants, mussels or sandpapery bumps are **found STOP, call Ranger, send to Decontamination!**

4. ENSURE BOAT DRAINED

- On smaller boats ASK driver to **Remove bilge plug** (and other plugs if needed) to show drained.
- On large boats, ASK inspectors to STAND CLEAR, ASK driver to climb in & **activate bilge pump** to show no/little water.
 - Ask to see and **drain ALL bait wells, live wells and ballast tanks.**
 - **If boat has wet bait well, ask where they got bait.**
 - If the bait is from bait store, ask for receipt. Before Aug 15, no receipt OK, they can launch. After 8/15, no receipt means they must remove bait and drain well. They may refill with lake water.
 - If the bait is from another waterbody, have boater remove bait, drain the bait well. They may refill with lake water.

If a lot of water (10+ gallons), then STOP call Ranger, send to Decontamination!

5. CLOSEOUT

- Ask **Owner** to **REPLACE BILGE PLUG**. They are responsible to ensure it's water-tight.
- Ensure all Inspectors are done, nothing found? Yell **STAND CLEAR & REMOVE Chocks**
- **THANK Owner** for keeping their boat CLEAN, DRAIN and DRY and tell them they can launch
- **Record CL#** on ANS inspection log (for monthly reports)

Remember Personal and Public Safety is priority #1 at all times

COLORADO STATE PARKS HIGH RISK ANS INSPECTION FORM

For use on High Risk Trailered Watercraft, Ver 9, 7/23/2008

Park and Location: _____ Date/Time: _____

Vessel Reg# (CL#): _____ Vehicle Tag #: _____ Trailer Tag #: _____

REASON FOR HIGH RISK INSPECTION (check all that apply)

- Out of State Registered or Used Out of State Recently
- Been in Infested waters within last 30 days:
 - Lake Pueblo (CO) Granby Lake (CO) El Dorado (KS) Perry (KS) Havasu (AZ/CA) Mead (AZ/NV) Mojave (NV) Powell (AZ/UT) Cheney (KS) Other (lake name, state): _____
- Big/Complex Boat Wet/Water Present Vol Request
- Dirty/Crusty/Slimy Below Waterline Entering/Leaving Marina Other: _____

VESSEL INSPECTION (inspect very methodically and carefully)

Overall Look and Feel of Hull (check box): Clean/Smooth Bumpy/Sandpaper Feel Other _____
 (if bumpy/sandpaper feel, then look at bumps with magnifying glass to see if mussels)

VESSEL EXTERIOR CHECKED

Entire Hull	Trim tabs (top & bot.)	Through hull fittings	Motor Well	Transom
Transducers	Pilot tubes	Cavitations Plate(s)	Anchors & Ropes	Depth Sounders
Water Intakes/Outlets	Lights	Water holding pockets	Recessed bolts	PWC – foot recesses
Sailboats	Centerboard Box	Rudder and Transom	Keel	Fittings

MOTOR CHECKED

Exterior Housings	Propeller & Assemb.	Prop. Shaft	Prop, Shaft Supports	Prop Guards
Rudders	Propulsion System	Lower Unit	Gimbal Area	Water Intake/Outlets

TRAILER CHECKED

Rollers, Bunks, Pads	License Plate	Trailer Lights	Trailer Wiring	Trailer Axels
Trailer Springs	Fenders	Pockets & Hollows	Wheels & Tires	Hangers

INTERIOR / EQUIPMENT CHECKED

Bait & Live Wells	Internal Ballast Tanks	PFD's	Float Cushions/Belts	Rope Lockers
Equip Lockers	Waterfowl Decoys	Water Skis & Ropes	Nets	Other wet equip.

VESSEL THOROUGHLY DRAINED

Bilge Plug or Pump	Bait & Live Wells	Ballast Tanks	Lower Unit (if possible)	Other
Large boats, ASK driver activate bilge pump and if time allows have them drain lower unit of motor				
If wet and in infested waters in last 30 days, then call Ranger, send to Decontamination!				
Large volumes of water (10+ gallons) require draining and decontamination. If no hot water wash available, then have them drain in a safe location and allow them to launch if you believe there is low risk of larvae. If there is any doubt as to whether they have been in infested waters recently, then require additional options for decontamination – hot water (90 deg or more), use of bleach (6%) or potassium chloride. See handbook for more information.				

CLOSEOUT (if nothing is found):

Ask Owner to Replace BILGE PLUG	Yell STAND CLEAR & Remove CHOCKS	Thank Them for CLEANING, DRAINING, & DRYING
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VESSEL INSPECTION FINDINGS

- DID NOT FIND** Any Identified or Suspected ANS Species
- FOUND:** Large Vol Water, Suspected ANS in Water Mussels Vegetation Other _____ Location(s): _____

INSPECTION COMPLETED IN ACCORDANCE WITH STATE PROCEDURES:

Inspected By (print name): _____
 Inspected By (signature): _____

COLORADO STATE PARKS CLEAN DRAIN DRY CHECKLIST

Version 3, 7/23/08

These are instructions. This is not a form to fill out. This protocol should take 1 minute (or drain time) to complete.

The purpose of this checklist is to:

1. Ensure contact has been made with boater before leaving the boat ramp
2. Verify the boat is CLEAN and DRAINED prior to leaving

1. EDUCATE – Why we CLEAN, DRAIN and DRY

- EXPLAIN that zebra mussels have been found in Lake Pueblo and Lake Granby.
- Adult mussels and weeds and be transported on boat hull or motor
- Larvae can be transported in water
- Clean, Drain and Dry is the most effective way to stop spread of Zebra mussels

2. ENSURE BOAT HULL IS CLEAN

- LOOK quickly for any obvious Weeds or Mud
- ASK them or HELP them remove all weeds/mud everything before they leave
- FEEL along hull and on lower unit, if sandpaper like feel, conduct a **HIGH RISK INSPECTION**
- IF anything looks like a mussel, then conduct a **HIGH RISK INSPECTION**

3. ENSURE BOAT IS DRAINED

- ASK boat owner to open bilge plug (may need a tool) to show it is drained.
- ASK to see the live bait well, ensure its drained
- ASK to see ballast tanks or any other compartment with water and ensure they are drained.
- ASK if bait has been disposed of in trash

4. ENCOURAGE ADDITIONAL CLEANING, DRYING

- ENCOURAGE them to CLEAN BOAT with hot water and dry out equipment before next use.
- THANK them for **PROTECTING OUR BOATING AND OUR LAKES!**

COLORADO STATE PARKS VESSEL DECONTAMINATION FORM

For use on watercraft with identified or suspected ANS
Version 9, 9/13/2008

Call Ranger before informing Boat owner that Decontamination will be required
Decon. Authorized by Peace Officer _____ Boat owner/operator Consents to Decon. _____
(signature) (signature)

VESSEL/OWNER INFORMATION
Park and Location: _____ Date: _____
Vessel Reg# (CL#): _____ Vehicle Tag #: _____ Trailer Tag. #: _____
Vessel Owner/Operator Name: _____
Vessel Owner/Operator Date of Birth (optional) : _____
Address: _____
City, State & Zip code _____

REASON FOR DECONTAMINATION
 Vegetation Attached – Location(s) on boat _____
 Possible Mussels (bumps that look like mussels) – Location(s) on boat _____
 Zebra\Quagga Mussels Visible - Location(s) on boat _____
Estimated # of Mussels Present (check box): < 10 10 – 100 >100
 Vessel has recently been in infested water and is wet/has water
 Vessel has large volume of ballast/other water – estimated gallons _____
 Other: _____

DOCUMENTATION AND REPORTING PROCEDURES
 PHOTOS: Take 3 digital photo closeups of ANS before it is detached from boat
 WRITE DESCRIPTION of finding: who, when, where and how it was found, if the suspected mussels were attached to a surface or not, and all locations the boater has been in the last 6 months.
 EMAIL photos and description immediately to:
Rob.Billerbeck@state.co.us, Greg.Gerlich@state.co.us, and Vicki.Milano@state.co.us
 CALL Rob Billerbeck – 303-548-6169 (cell)
 SAMPLE: Scrape off a few suspected ANS/mussels. If sample is adult mussels or living tissue, put them in a sample vial with grain alcohol (not rubbing alcohol). If sample is small or dry, put in envelope or ziplock bag.
 Fedex sample to: Vicki Milano, CDOW 122 E. Edison Street, Brush, CO 80723 Ph. (970) 842-6308
 DECONTAMINATE Completely – do not allow the boat to leave until complete.

DECONTAMINATION
Describe any existing damage to vessel: _____
Photos taken (take several for all 3 if possible):
 BEFORE DURING AFTER Decontamination Photo #'s/notes _____
METHODS: (check all that apply)
 Draining Potassium Chloride Bleach Solution Scrub Brush Steel Wool
 Hot water sprayer (wash and flush) Quarantined
If quarantined, comments: _____
Decontamination performed by: Vessel Owner Park Staff Other _____
Other Comments: _____

DECONTAMINATION COMPLETED IN ACCORDANCE WITH STATE PROCEDURES:
Decontaminated By (print name): _____
Decontaminated By (signature): _____
Post-Wash Reinspection by 2nd Inspector (print name): _____

Post-Wash Reinspection by 2nd Inspector (signature): _____

COLORADO STATE PARKS INSPECTION STRAP RECEIPT

For use when applying straps to boats, Version 3, 8/7/2008
Fill out top and bottom the same and provide bottom copy to boater

Park: _____ Date: _____ Strap Serial Number #: _____
Vessel Reg# (CL#): _____ Trailer Tag. #: _____ 100 th Meridian Dry Date: _____
STRAP AND INSPECTION TYPE: (check strap applied and inspections performed) <input type="checkbox"/> Green Strap on the way out Requires High Risk Inspection and Form <input type="checkbox"/> Yellow Strap on the way out - Requires Standard Inspection on their way in, Clean/Drain/Dry on way out) <input type="checkbox"/> Yellow Strap on the way out at Pueblo – Requires High Risk Inspection
<u>Green straps:</u> no add'l inspection required at State Reservoirs – quick strap removal, then launch <u>Yellow straps:</u> <u>Same Reservoir</u> - if launching at <u>same reservoir</u> as inspection strap, then <u>allow immediate launch</u> <u>Different Reservoir</u> - check <u>receipt date</u> and if boat is <u>dry</u> if beyond drying time and dry, then allow to launch if not beyond drying time or not dry, conduct standard inspection
<h2 style="margin: 0;">Remember to Save and File</h2>

State Copy

Park: _____ Date/Time: _____ Strap Serial Number #: _____
Vessel Reg# (CL#): _____ Trailer Tag. #: _____ 100 th Meridian Dry Date: _____
STRAP AND INSPECTION TYPE: (check strap applied and inspections performed) <input type="checkbox"/> Green Strap on the way out Requires High Risk Inspection and Form <input type="checkbox"/> Yellow Strap on the way out - Requires Standard Inspection on their way in, Clean/Drain/Dry on way out) <input type="checkbox"/> Yellow Strap on the way out at Pueblo – Requires High Risk Inspection
<u>Green straps:</u> no add'l inspection required at State Reservoirs – quick strap removal, then launch <u>Yellow straps:</u> <u>Same Reservoir</u> - if launching at <u>same reservoir</u> as inspection strap, then <u>allow immediate launch</u> <u>Different Reservoir</u> - check <u>receipt date</u> and if boat is <u>dry</u> if beyond drying time and dry, then allow to launch if not beyond drying time or not dry, conduct standard inspection
<h2 style="margin: 0;">Thanks – Please Save this Receipt</h2>

Boater Copy

Law Enforcement

Here is the ANS law and the emergency regulations passed by the Parks board. Many more regulations will be passed this summer to clarify procedures.

- Contact Rick Storm (Littleton Office, 303-791-1957) with questions

NOTE: This bill has been prepared for the signature of the appropriate legislative officers and the Governor. To determine whether the Governor has signed the bill or taken other action on it, please consult the legislative status sheet, the legislative history, or the Session Laws.

An Act

SENATE BILL 08-226

BY SENATOR(S) Isgar, Gibbs, Groff, Kester, Penry, Renfroe, Schwartz, Shaffer, Spence, Taylor, Tochtrop, Ward, Wiens, Harvey, McElhany, and Tapia;
also REPRESENTATIVE(S) Butcher and McFadyen, Fischer, King, Buescher, Carroll T., Curry, Hodge, Labuda, McGihon, and Romanoff.

CONCERNING THE PROHIBITION OF AQUATIC NUISANCE SPECIES IN COLORADO, AND MAKING AN APPROPRIATION IN CONNECTION THEREWITH.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. Title 33, Colorado Revised Statutes, is amended BY THE ADDITION OF A NEW ARTICLE to read:

ARTICLE 10.5 **Aquatic Nuisance Species**

33-10.5-101. Legislative declaration. THE GENERAL ASSEMBLY HEREBY RECOGNIZES THE DEVASTATING ECONOMIC, ENVIRONMENTAL, AND SOCIAL IMPACTS OF AQUATIC NUISANCE SPECIES ON THE AQUATIC RESOURCES AND WATER INFRASTRUCTURE OF THE STATE. THE GENERAL ASSEMBLY FURTHER RECOGNIZES THE POTENTIAL OF RECREATIONAL

Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.

VESSELS TO BE A SIGNIFICANT SOURCE OF THE SPREAD OF AQUATIC NUISANCE SPECIES IN COLORADO. THEREFORE, THE GENERAL ASSEMBLY FINDS, DETERMINES, AND DECLARES THAT THE PURPOSES OF ENACTING THIS ARTICLE ARE TO IMPLEMENT ACTIONS TO DETECT, PREVENT, CONTAIN, CONTROL, MONITOR, AND, WHENEVER POSSIBLE, ERADICATE AQUATIC NUISANCE SPECIES FROM THE WATERS OF THE STATE AND TO PROTECT HUMAN HEALTH, SAFETY, AND WELFARE FROM AQUATIC NUISANCE SPECIES. IT IS THE INTENT OF THE GENERAL ASSEMBLY TO FOSTER AND ENCOURAGE, TO THE GREATEST EXTENT POSSIBLE, VOLUNTARY COMPLIANCE WITH THIS ARTICLE. IT IS THE INTENT OF THE GENERAL ASSEMBLY THAT PREVENTION, CONTAINMENT, AND ERADICATION OF AQUATIC NUISANCE SPECIES IN WATERS OF THE STATE IN WHICH SUCH SPECIES HAVE BEEN DETECTED OR ARE LIKELY TO BE INTRODUCED SHALL BE THE DIVISIONS' HIGHEST PRIORITIES.

33-10.5-102. Definitions. AS USED IN THIS ARTICLE, UNLESS THE CONTEXT OTHERWISE REQUIRES:

(1) "AQUATIC NUISANCE SPECIES" MEANS EXOTIC OR NONNATIVE AQUATIC WILDLIFE OR ANY PLANT SPECIES THAT HAVE BEEN DETERMINED BY THE BOARD TO POSE A SIGNIFICANT THREAT TO THE AQUATIC RESOURCES OR WATER INFRASTRUCTURE OF THE STATE.

(2) "AUTHORIZED AGENT" MEANS ANY PERSON, EMPLOYEE, OR REPRESENTATIVE OF LOCAL, STATE, OR FEDERAL GOVERNMENT OR ANY SUBDIVISION OF THE GOVERNMENT THAT IS AUTHORIZED BY THE GOVERNMENT OR GOVERNMENTAL SUBDIVISION TO TEMPORARILY STOP, DETAIN, AND INSPECT A CONVEYANCE FOR AQUATIC NUISANCE SPECIES.

(3) "BOARD" MEANS THE BOARD OF PARKS AND OUTDOOR RECREATION IN THE DEPARTMENT OF NATURAL RESOURCES CREATED IN SECTION 33-10-103.

(4) "CONVEYANCE" MEANS A MOTOR VEHICLE, VESSEL, TRAILER, OR ANY ASSOCIATED EQUIPMENT OR CONTAINERS, INCLUDING, BUT NOT LIMITED TO, LIVE WELLS, BALLAST TANKS, AND BILGE AREAS THAT MAY CONTAIN OR CARRY AN AQUATIC NUISANCE SPECIES.

(5) "DECONTAMINATE" MEANS TO WASH, DRAIN, DRY, OR CHEMICALLY OR THERMALLY TREAT A CONVEYANCE IN ACCORDANCE WITH

RULES PROMULGATED BY THE BOARD IN ORDER TO REMOVE OR DESTROY AN AQUATIC NUISANCE SPECIES.

(6) "DIVISIONS" MEANS THE DIVISION OF PARKS AND OUTDOOR RECREATION CREATED IN SECTION 33-10-103 AND THE DIVISION OF WILDLIFE IDENTIFIED IN SECTION 33-1-103.

(7) "EQUIPMENT" MEANS AN ARTICLE, TOOL, IMPLEMENT, OR DEVICE CAPABLE OF CONTAINING OR TRANSPORTING WATER.

(8) "INSPECT" MEANS TO EXAMINE A CONVEYANCE PURSUANT TO PROCEDURES ESTABLISHED BY THE BOARD BY RULE IN ORDER TO DETERMINE WHETHER AN AQUATIC NUISANCE SPECIES IS PRESENT, AND INCLUDES EXAMINING, DRAINING, OR CHEMICALLY TREATING WATER IN THE CONVEYANCE.

(9) "QUALIFIED PEACE OFFICER" MEANS A COLORADO WILDLIFE OFFICER, SPECIAL PARKS OFFICER, OR SPECIAL WILDLIFE OFFICER; A PARKS AND RECREATION OFFICER; A PEACE OFFICER IN THE DEPARTMENT OF PUBLIC SAFETY; AND A PEACE OFFICER WITH JURISDICTION OVER ANY WATERS OF THE STATE.

33-10.5-103. Powers and duties of the divisions - annual report.

(1) IN ORDER TO PREVENT, CONTROL, CONTAIN, MONITOR, AND, WHENEVER POSSIBLE, ERADICATE AQUATIC NUISANCE SPECIES FROM THE WATERS OF THE STATE, THE DIVISIONS ARE AUTHORIZED TO JOINTLY ESTABLISH, OPERATE, AND MAINTAIN AQUATIC NUISANCE SPECIES CHECK STATIONS IN ORDER TO INSPECT CONVEYANCES PURSUANT TO SECTION 33-10.5-104.

(2) UPON A REASONABLE BELIEF THAT AN AQUATIC NUISANCE SPECIES MAY BE PRESENT, THE DIVISIONS MAY:

(a) REQUIRE THE OWNER OF A CONVEYANCE TO DECONTAMINATE THE CONVEYANCE; OR

(b) DECONTAMINATE OR IMPOUND AND QUARANTINE THE CONVEYANCE PURSUANT TO SECTION 33-10.5-104.

(3) THE DIVISIONS MAY MONITOR THE WATERS OF THE STATE FOR THE PRESENCE OF AQUATIC NUISANCE SPECIES, BUT ONLY IF THE DIVISIONS

HAVE RECEIVED PERMISSION TO MONITOR FROM THE PERSONS CONTROLLING ACCESS TO SUCH WATERS.

(4) THE DIVISIONS SHALL, IN COOPERATION WITH THE DEPARTMENT OF PUBLIC SAFETY, THE COLORADO OFFICE OF ECONOMIC DEVELOPMENT, THE COLORADO TOURISM OFFICE, THE WATER CONSERVATION BOARD CREATED IN SECTION 37-60-102, C.R.S., AND THE DEPARTMENT OF AGRICULTURE, DEVELOP A STRATEGIC STATEWIDE PLAN TO PREVENT, CONTROL, MONITOR, EDUCATE PERSONS ABOUT, AND, WHENEVER POSSIBLE, ERADICATE AQUATIC NUISANCE SPECIES.

(5) BEGINNING ON JANUARY 15, 2009, AND ON OR BEFORE JANUARY 15 OF EACH YEAR THEREAFTER, THE DIVISIONS AND THE WATER CONSERVATION BOARD CREATED IN SECTION 37-60-102, C.R.S., SHALL MAKE AN ANNUAL REPORT OF THE EFFORTS IN ADDRESSING AQUATIC NUISANCE SPECIES IN COLORADO FOR THE PRECEDING CALENDAR YEAR TO THE JOINT HOUSE AGRICULTURE, LIVESTOCK, AND NATURAL RESOURCE COMMITTEE AND THE SENATE AGRICULTURE, NATURAL RESOURCES, AND ENERGY COMMITTEE, OR ITS SUCCESSOR COMMITTEE. EACH SUCH REPORT SHALL SET FORTH A COMPLETE OPERATING AND FINANCIAL STATEMENT COVERING THE AQUATIC NUISANCE SPECIES OPERATIONS OF THE DIVISIONS DURING THE YEAR.

33-10.5-104. Inspection of conveyances - impoundment and quarantine. (1) (a) EVERY QUALIFIED PEACE OFFICER IS AUTHORIZED TO ENFORCE THIS ARTICLE; EXCEPT THAT SUCH OFFICER SHALL HAVE A REASONABLE BELIEF THAT A CONVEYANCE MAY CONTAIN AN AQUATIC NUISANCE SPECIES BEFORE THE OFFICER ORDERS THE CONVEYANCE DECONTAMINATED OR IMPOUNDED AND QUARANTINED.

(b) EVERY QUALIFIED PEACE OFFICER IS AUTHORIZED TO STOP AND INSPECT FOR THE PRESENCE OF AQUATIC NUISANCE SPECIES A CONVEYANCE:

(I) PRIOR TO A VESSEL BEING LAUNCHED ONTO WATERS OF THE STATE;

(II) PRIOR TO DEPARTING FROM THE WATERS OF THE STATE OR A VESSEL STAGING AREA;

(III) THAT IS VISIBLY TRANSPORTING ANY AQUATIC PLANT

MATERIAL; AND

(IV) UPON A REASONABLE BELIEF THAT AN AQUATIC NUISANCE SPECIES MAY BE PRESENT.

(2) EXCEPT AS PROVIDED IN SUBSECTION (4) OF THIS SECTION, A QUALIFIED PEACE OFFICER MAY IMPOUND AND QUARANTINE A CONVEYANCE IF:

(a) THE QUALIFIED PEACE OFFICER FINDS OR REASONABLY BELIEVES THAT AN AQUATIC NUISANCE SPECIES MAY BE PRESENT AFTER CONDUCTING AN INSPECTION AUTHORIZED BY THIS ARTICLE;

(b) THE PERSON TRANSPORTING THE CONVEYANCE REFUSES TO SUBMIT TO AN INSPECTION AUTHORIZED BY THIS ARTICLE FOR THE PRESENCE OF AN AQUATIC NUISANCE SPECIES; OR

(c) THE PERSON TRANSPORTING THE CONVEYANCE REFUSES TO COMPLY WITH AN ORDER AUTHORIZED BY THIS ARTICLE TO DECONTAMINATE THE CONVEYANCE.

(3) THE IMPOUNDMENT AND QUARANTINE OF A CONVEYANCE MAY CONTINUE FOR THE REASONABLE PERIOD NECESSARY TO INSPECT AND DECONTAMINATE THE CONVEYANCE AND ENSURE THAT THE AQUATIC NUISANCE SPECIES HAS BEEN COMPLETELY ERADICATED FROM THE CONVEYANCE AND IS NO LONGER LIVING.

(4) NOTWITHSTANDING ANY PROVISION TO THE CONTRARY, NO MOTOR VEHICLE THAT IS DRAWING A CONVEYANCE SHALL BE IMPOUNDED OR QUARANTINED PURSUANT TO THIS ARTICLE; HOWEVER, THE CONVEYANCE BEING DRAWN IS STILL SUBJECT TO IMPOUNDMENT AND QUARANTINE UNDER THIS SECTION.

(5) AN AUTHORIZED AGENT SHALL HAVE THE AUTHORITY TO STOP, DETAIN, AND INSPECT A CONVEYANCE FOR THE PRESENCE OF AN AQUATIC NUISANCE SPECIES; HOWEVER, UNLESS THE AUTHORIZED AGENT IS A QUALIFIED PEACE OFFICER, THE AUTHORIZED AGENT HAS NO AUTHORITY TO IMPOUND AND QUARANTINE OR ORDER A CONVEYANCE DECONTAMINATED.

33-10.5-105. Prohibition of aquatic nuisance species - penalties.

(1) NO PERSON SHALL:

(a) POSSESS, IMPORT, EXPORT, SHIP, OR TRANSPORT AN AQUATIC NUISANCE SPECIES;

(b) RELEASE, PLACE, PLANT, OR CAUSE TO BE RELEASED, PLACED, OR PLANTED INTO THE WATERS OF THE STATE AN AQUATIC NUISANCE SPECIES; OR

(c) REFUSE TO COMPLY WITH A PROPER ORDER ISSUED UNDER THIS ARTICLE.

(2) A PERSON WHO KNOWINGLY OR WILLFULLY VIOLATES SUBSECTION (1) OF THIS SECTION:

(a) FOR A FIRST OFFENSE, IS GUILTY OF A CLASS 2 PETTY OFFENSE, AS DEFINED BY SECTION 18-1.3-503, C.R.S., AND, UPON CONVICTION, SHALL BE SUBJECT TO A FINE OF ONE HUNDRED FIFTY DOLLARS AND SHALL BE ISSUED A WARNING OF THE INCREASED PENALTIES FOR SUBSEQUENT VIOLATIONS FROM THE DIVISIONS;

(b) FOR A SECOND OFFENSE, IS GUILTY OF A MISDEMEANOR AND, UPON CONVICTION, SHALL BE FINED ONE THOUSAND DOLLARS; AND

(c) FOR A THIRD AND ANY SUBSEQUENT OFFENSE, COMMITS A CLASS 2 MISDEMEANOR AND, UPON CONVICTION, SHALL BE PUNISHED AS PROVIDED IN SECTION 18-1.3-501, C.R.S.

33-10.5-106. Duty to report. A PERSON WHO KNOWS THAT AN AQUATIC NUISANCE SPECIES IS PRESENT AT A SPECIFIC LOCATION SHALL IMMEDIATELY REPORT SUCH KNOWLEDGE AND ALL PERTINENT INFORMATION TO THE DIVISIONS.

33-10.5-107. Board to promulgate rules. (1) THE BOARD IS AUTHORIZED TO PROMULGATE RULES PURSUANT TO ARTICLE 4 OF TITLE 24, C.R.S., AS NECESSARY TO PREVENT, CONTROL, CONTAIN, MONITOR, AND, WHENEVER POSSIBLE, ERADICATE AQUATIC NUISANCE SPECIES. IN PROMULGATING SUCH RULES, THE BOARD SHALL CONSULT WITH THE COMMISSION AND ANY AFFECTED STATE, FEDERAL, AND TRIBAL GOVERNMENTAL ENTITIES AND SUBDIVISIONS THEREOF, INCLUDING, BUT NOT

LIMITED TO, SPECIAL DISTRICTS, WATER CONSERVANCY DISTRICTS, AND WATER SUPPLY AGENCIES.

(2) THE BOARD SHALL PROMULGATE RULES TO ADMINISTER AND ENFORCE THIS ARTICLE. SUCH RULES SHALL INCLUDE, BUT NOT BE LIMITED TO:

(a) PROCEDURES FOR THE INSPECTION OF CONVEYANCES FOR THE PRESENCE OF AQUATIC NUISANCE SPECIES;

(b) PROCEDURES FOR THE IMPOUNDMENT AND QUARANTINE OF CONVEYANCES PURSUANT TO SECTION 33-10.5-104, INCLUDING NOTIFICATION OF THE LOCATION AND CONTACT INFORMATION TO OWNERS OF IMPOUNDED CONVEYANCES;

(c) PROCEDURES FOR THE DECONTAMINATION OF CONVEYANCES AND DESTRUCTION OF AQUATIC NUISANCE SPECIES REMOVED FROM CONVEYANCES;

(d) METHODS TO ESTABLISH PROOF THAT A CONVEYANCE HAS BEEN DECONTAMINATED;

(e) PROCESSES FOR THE FACILITATION OF THE REPORTING REQUIRED BY SECTION 33-10.5-106; AND

(f) POLICIES FOR THE MONITORING AND IDENTIFICATION OF THE WATERS OF THE STATE OR GEOGRAPHIC AREAS THAT ARE OR MAY BE INFESTED WITH AQUATIC NUISANCE SPECIES.

33-10.5-108. Division of parks and outdoor recreation aquatic nuisance species fund - creation - division of wildlife aquatic nuisance species fund - creation. (1) (a) THERE IS HEREBY CREATED IN THE STATE TREASURY THE DIVISION OF PARKS AND OUTDOOR RECREATION AQUATIC NUISANCE SPECIES FUND, WHICH SHALL BE ADMINISTERED BY THE DIVISION OF PARKS AND OUTDOOR RECREATION IN THE DEPARTMENT OF NATURAL RESOURCES AND SHALL CONSIST OF ALL MONEYS TRANSFERRED BY THE TREASURER AS SPECIFIED IN SECTION 39-29-109 (10), C.R.S. ALL MONEYS IN THE FUND ARE CONTINUOUSLY APPROPRIATED TO THE DIVISION OF PARKS AND OUTDOOR RECREATION FOR THE PURPOSE OF IMPLEMENTING THE PROVISIONS OF THIS ARTICLE. ALL MONEYS IN THE FUND AT THE END OF

EACH FISCAL YEAR SHALL REMAIN IN THE FUND AND SHALL NOT REVERT TO THE GENERAL FUND OR ANY OTHER FUND.

(b) IN THE USE OF SUCH MONEYS, PRIORITY SHALL BE GIVEN TO CONTAINMENT AND ERADICATION OF AQUATIC NUISANCE SPECIES IN THE WATERS OF THE STATE IN WHICH SUCH SPECIES HAVE BEEN DETECTED AND PREVENTION OF THE INTRODUCTION OF NUISANCE SPECIES IN AREAS DETERMINED TO BE MOST VULNERABLE TO SUCH AN INTRODUCTION.

(2) (a) THERE IS HEREBY CREATED IN THE STATE TREASURY THE DIVISION OF WILDLIFE AQUATIC NUISANCE SPECIES FUND, WHICH SHALL BE ADMINISTERED BY THE DIVISION OF WILDLIFE IN THE DEPARTMENT OF NATURAL RESOURCES AND SHALL CONSIST OF ALL MONEYS TRANSFERRED BY THE TREASURER AS SPECIFIED IN SECTIONS 33-1-112 AND 39-29-109 (10), C.R.S. ALL MONEYS IN THE FUND ARE CONTINUOUSLY APPROPRIATED TO THE DIVISION OF WILDLIFE FOR THE PURPOSE OF IMPLEMENTING THE PROVISIONS OF THIS ARTICLE. ALL MONEYS IN THE FUND AT THE END OF EACH FISCAL YEAR SHALL REMAIN IN THE FUND AND SHALL NOT REVERT TO THE GENERAL FUND OR ANY OTHER FUND.

(b) IN THE USE OF SUCH MONEYS, PRIORITY SHALL BE GIVEN TO CONTAINMENT AND ERADICATION OF AQUATIC NUISANCE SPECIES IN THE WATERS OF THE STATE IN WHICH SUCH SPECIES HAVE BEEN DETECTED AND PREVENTION OF THE INTRODUCTION OF NUISANCE SPECIES IN AREAS DETERMINED TO BE MOST VULNERABLE TO SUCH AN INTRODUCTION.

SECTION 2. 33-1-112 (1), Colorado Revised Statutes, is amended to read:

33-1-112. Funds and cost accounting - repeal. (1) (a) Except as provided in subsections (7) and (8) of this section, sections 33-1-112.5 and 33-6-105, and in part 7 of article 22 of title 39, C.R.S., all moneys received from wildlife license fees, and all moneys from all other wildlife sources, and all interest earned on such moneys shall be deposited in the state treasury and credited to the wildlife cash fund, which fund is hereby created, and such moneys shall be utilized for expenditures authorized or contemplated by and not inconsistent with the provisions of articles 1 to 6 of this title for wildlife activities and functions and for the financing of impact assistance grants pursuant to part 3 of article 25 of title 30, C.R.S. All moneys so deposited in the wildlife cash fund shall remain in such fund

to be used for the purposes set forth in the provisions of articles 1 to 6 of this title and shall not be deposited in or transferred to the general fund of the state of Colorado or any other fund.

(b) FOR THE FISCAL YEAR COMMENCING JULY 1, 2008, THERE SHALL BE TRANSFERRED ONE MILLION TWO HUNDRED FIFTY THOUSAND DOLLARS FROM THE WILDLIFE CASH FUND TO THE DIVISION OF WILDLIFE AQUATIC NUISANCE SPECIES FUND, CREATED IN SECTION 33-10.5-108.

SECTION 3. 33-6-114, Colorado Revised Statutes, is amended BY THE ADDITION OF A NEW SUBSECTION to read:

33-6-114. Transportation, importation, exportation, and release of wildlife. (5) THIS SECTION SHALL NOT APPLY TO AQUATIC NUISANCE SPECIES, WHICH SHALL BE GOVERNED BY ARTICLE 10.5 OF THIS TITLE.

SECTION 4. 33-6-114.5, Colorado Revised Statutes, is amended BY THE ADDITION OF A NEW SUBSECTION to read:

33-6-114.5. Native and nonnative fish - possession, transportation, importation, exportation, and release - penalties. (8) THIS SECTION SHALL NOT APPLY TO AQUATIC NUISANCE SPECIES, WHICH SHALL BE GOVERNED BY ARTICLE 10.5 OF THIS TITLE.

SECTION 5. 39-29-109, Colorado Revised Statutes, is amended BY THE ADDITION OF A NEW SUBSECTION to read:

39-29-109. Severance tax trust fund - created - administration - use of moneys - definitions - repeal. (10) (a) (I) SUBJECT TO THE END BALANCE REQUIREMENT OF PARAGRAPH (f) OF SUBSECTION (1.5) OF THIS SECTION AND THE MAINTENANCE OF A TWO-YEAR RESERVE PURSUANT TO SUB-SUBPARAGRAPH (A) OF SUBPARAGRAPH (III) OF PARAGRAPH (c) OF SUBSECTION (1) OF THIS SECTION, FOR THE STATE FISCAL YEAR COMMENCING ON JULY 1, 2008, THE STATE TREASURER SHALL TRANSFER FIVE MILLION NINE HUNDRED FIFTY-SIX THOUSAND SIX HUNDRED THIRTY-SIX DOLLARS OF THE OPERATIONAL ACCOUNT OF THE SEVERANCE TAX TRUST FUND AS FOLLOWS:

(A) TO THE DIVISION OF PARKS AND OUTDOOR RECREATION AQUATIC NUISANCE SPECIES FUND CREATED IN SECTION 33-10.5-108(1), C.R.S., THREE

MILLION TWO HUNDRED EIGHTY-NINE THOUSAND THREE HUNDRED NINETY-TWO DOLLARS FOR THE PURPOSE STATED THEREIN;

(B) TO THE DIVISION OF WILDLIFE AQUATIC NUISANCE SPECIES FUND CREATED IN SECTION 33-10.5-108 (2), C.R.S., TWO MILLION SIX HUNDRED SIXTY-SEVEN THOUSAND TWO HUNDRED FORTY-FOUR DOLLARS FOR THE PURPOSE STATED THEREIN.

(II) THIS PARAGRAPH (a) IS REPEALED, EFFECTIVE JULY 1, 2010.

(b) SUBJECT TO THE END BALANCE REQUIREMENT OF PARAGRAPH (f) OF SUBSECTION (1.5) OF THIS SECTION AND THE MAINTENANCE OF A TWO-YEAR RESERVE PURSUANT TO SUB-SUBPARAGRAPH (A) OF SUBPARAGRAPH (III) OF PARAGRAPH (c) OF SUBSECTION (1) OF THIS SECTION, FOR THE FISCAL YEAR COMMENCING JULY 1, 2009, AND EVERY FISCAL YEAR THEREAFTER, THE STATE TREASURER SHALL TRANSFER FOUR MILLION SIX THOUSAND FIVE DOLLARS FROM THE OPERATIONAL ACCOUNT OF THE SEVERANCE TAX TRUST FUND AS FOLLOWS:

(I) TO THE DIVISION OF PARKS AND OUTDOOR RECREATION AQUATIC NUISANCE SPECIES FUND CREATED IN SECTION 33-10.5-108 (1), C.R.S., TWO MILLION SEVEN HUNDRED ONE THOUSAND FOUR HUNDRED SIXTY-ONE DOLLARS FOR THE PURPOSE STATED THEREIN;

(II) TO THE DIVISION OF WILDLIFE AQUATIC NUISANCE SPECIES FUND CREATED IN SECTION 33-10.5-108 (2), C.R.S., ONE MILLION THREE HUNDRED FOUR THOUSAND FIVE HUNDRED FORTY-FOUR DOLLARS FOR THE PURPOSE STATED THEREIN.

SECTION 6. 39-29-109 (1) (k) (V), Colorado Revised Statutes, is amended to read:

39-29-109. Severance tax trust fund - created - administration - use of moneys - definitions - repeal. (1) (k) (V) Subject to the maintenance of a two-year reserve pursuant to sub-subparagraph (A) of subparagraph (III) of paragraph (c) of this subsection (1), on or after July 1, 2008, the state treasurer shall deduct from the operational account of the severance tax trust fund created in subparagraph (II) of paragraph (a) of this subsection (1):

(A) ~~One million~~ SIX HUNDRED TWENTY-FIVE THOUSAND dollars and transfer such sum to the capital account of the species conservation trust fund created in section 24-33-111 (2) (a), C.R.S.;

(B) ~~One million~~ SIX HUNDRED TWENTY-FIVE THOUSAND dollars and transfer such sum to the operations and maintenance account of the species conservation trust fund created in section 24-33-111 (2) (a), C.R.S.

SECTION 7. 33-10.5-108, Colorado Revised Statutes, as enacted by section 1 of Senate Bill 08-226, enacted at the Second Regular Session of the Sixty-sixth General Assembly, is amended to read:

33-10.5-108. Division of parks and outdoor recreation aquatic nuisance species fund - creation - division of wildlife aquatic nuisance species fund - creation. (1) (a) There is hereby created in the state treasury the division of parks and outdoor recreation aquatic nuisance species fund, which shall be administered by the division of parks and outdoor recreation in the department of natural resources and shall consist of all moneys transferred by the treasurer as specified in ~~section 39-29-109~~ (10) SECTION 39-29-109.3 (2) (i), C.R.S. All moneys in the fund are continuously appropriated to the division of parks and outdoor recreation for the purpose of implementing the provisions of this article. All moneys in the fund at the end of each fiscal year shall remain in the fund and shall not revert to the general fund or any other fund.

(b) In the use of such moneys, priority shall be given to containment and eradication of aquatic nuisance species in the waters of the state in which such species have been detected and prevention of the introduction of aquatic nuisance species in areas determined to be most vulnerable to such an introduction.

(2) (a) There is hereby created in the state treasury the division of wildlife aquatic nuisance species fund, which shall be administered by the division of wildlife in the department of natural resources and shall consist of all moneys transferred by the treasurer as specified in ~~section 39-29-109~~ (10) SECTIONS 33-1-112 AND 39-29-109.3 (2) (i), C.R.S. All moneys in the fund are continuously appropriated to the division of wildlife for the purpose of implementing the provisions of this article. All moneys in the fund at the end of each fiscal year shall remain in the fund and shall not revert to the general fund or any other fund.

(b) In the use of such moneys, priority shall be given to containment and eradication of aquatic nuisance species in the waters of the state in which such species have been detected and prevention of the introduction of aquatic nuisance species in areas determined to be most vulnerable to such an introduction.

SECTION 8. 39-29-109.3 (2), Colorado Revised Statutes, as enacted by House Bill 08-1398, enacted at the Second Regular Session of the Sixty-sixth General Assembly, is amended BY THE ADDITION OF A NEW PARAGRAPH to read:

39-29-109.3. Operational account of the severance tax trust fund - repeal. (2) Subject to the requirements of subsections (3) and (4) of this section, if the general assembly chooses not to spend up to one hundred percent of the moneys in the operational account as specified in subsection (1) of this section, the state treasurer shall transfer the following:

(i) FOR THE MITIGATION OF AQUATIC NUISANCE SPECIES AS SPECIFIED IN ARTICLE 10.5 OF TITLE 33, C.R.S.:

(I) (A) FOR THE STATE FISCAL YEAR COMMENCING JULY 1, 2008, FIVE MILLION NINE HUNDRED FIFTY-SIX THOUSAND SIX HUNDRED THIRTY-SIX DOLLARS AS FOLLOWS: THREE MILLION TWO HUNDRED EIGHTY-NINE THOUSAND THREE HUNDRED NINETY-TWO DOLLARS TO THE DIVISION OF PARKS AND OUTDOOR RECREATION AQUATIC NUISANCE SPECIES FUND CREATED IN SECTION 33-10.5-108 (1), C.R.S.; AND TWO MILLION SIX HUNDRED SIXTY-SEVEN THOUSAND TWO HUNDRED FORTY-FOUR DOLLARS TO THE DIVISION OF WILDLIFE AQUATIC NUISANCE SPECIES FUND CREATED IN SECTION 33-10.5-108 (2), C.R.S.

(B) THIS SUBPARAGRAPH (I) IS REPEALED, JULY 1, 2010.

(II) FOR THE STATE FISCAL YEAR COMMENCING JULY 1, 2009, AND EVERY STATE FISCAL YEAR THEREAFTER, FOUR MILLION SIX THOUSAND FIVE DOLLARS AS FOLLOWS: TWO MILLION SEVEN HUNDRED ONE THOUSAND FOUR HUNDRED SIXTY-ONE DOLLARS TO THE DIVISION OF PARKS AND OUTDOOR RECREATION AQUATIC NUISANCE SPECIES FUND CREATED IN SECTION 33-10.5-108 (1), C.R.S.; AND ONE MILLION THREE HUNDRED FOUR THOUSAND FIVE HUNDRED FORTY-FOUR DOLLARS TO THE DIVISION OF WILDLIFE AQUATIC NUISANCE SPECIES FUND CREATED IN SECTION

33-10.5-108 (2), C.R.S.

SECTION 9. Section 39-29-109.3 (2) (d) (I) (A) and (2) (e) (I) (A), Colorado Revised Statutes, as enacted by House Bill 08-1398 and amended by Senate Bill 08-168, enacted at the Second Regular Session of the Sixty-sixth General Assembly, are amended to read:

39-29-109.3. Operational account of the severance tax trust fund - repeal. (2) Subject to the requirements of subsections (3) and (4) of this section, if the general assembly chooses not to spend up to one hundred percent of the moneys in the operational account as specified in subsection (1) of this section, the state treasurer shall transfer the following:

(d) To the capital account of the species conservation trust fund created in section 24-33-111 (2) (a), C.R.S., the following amounts:

(I) (A) For the state fiscal year commencing July 1, 2008, eight million ~~six hundred thirty-one~~ TWO HUNDRED FIFTY-SIX thousand nine hundred and forty-three dollars.

(e) To the operation and maintenance account of the species conservation trust fund created in section 24-33-111 (2) (a), C.R.S., the following amounts:

(I) (A) For the state fiscal year commencing July 1, 2008, four million ~~six hundred thirty-one~~ TWO HUNDRED FIFTY-SIX thousand nine hundred forty-three dollars.

SECTION 10. Appropriation. (1) In addition to any other appropriation, there is hereby appropriated, out of any moneys in the division of parks and outdoor recreation aquatic nuisance species fund created in section 33-10.5-108 (1), Colorado Revised Statutes, not otherwise appropriated, to the department of natural resources, for allocation to the division of parks and outdoor recreation, for the fiscal year beginning July 1, 2008, the sum of three million two hundred eighty-nine thousand three hundred ninety-two dollars (\$3,289,392) and 7.0 FTE, or so much thereof as may be necessary, for the implementation of this act.

(2) In addition to any other appropriation, there is hereby appropriated, out of any moneys in the division of wildlife aquatic nuisance

species fund created in section 33-10.5-108 (2), Colorado Revised Statutes, not otherwise appropriated, to the department of natural resources, for allocation to the division of wildlife, for the fiscal year beginning July 1, 2008, the sum of three million nine hundred seventeen thousand two hundred forty-four dollars (\$3,917,244), or so much thereof as may be necessary, for the implementation of this act.

(3) Any moneys earmarked from the operational account of the severance tax trust fund to the species conservation trust fund that have been declined for purposes of funding the appropriations necessary for the implementation of this act shall be used for mitigating the effects of any aquatic nuisance species on any threatened and endangered species protected by the species conservation trust fund.

SECTION 11. Effective date. (1) This act shall take effect upon passage; except that:

(a) Sections 5 and 6 of this act shall not take effect if House Bill 08-1398 is enacted at the Second Regular Session of the Sixty-sixth General Assembly and becomes law;

(b) Sections 7 and 8 of this act shall take effect only if House Bill 08-1398 is enacted at the Second Regular Session of the Sixty-sixth General Assembly and becomes law;

(c) Section 9 of this act shall take effect only if both House Bill 08-1398 and Senate Bill 08-168 are enacted at the Second Regular Session of the Sixty-sixth General Assembly and both become law.

SECTION 12. Safety clause. The general assembly hereby finds,

determines, and declares that this act is necessary for the immediate preservation of the public peace, health, and safety.

Peter C. Groff
PRESIDENT OF
THE SENATE

Andrew Romanoff
SPEAKER OF THE HOUSE
OF REPRESENTATIVES

Karen Goldman
SECRETARY OF
THE SENATE

Marilyn Eddins
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES

APPROVED _____

Bill Ritter, Jr.
GOVERNOR OF THE STATE OF COLORADO

EMERGENCY REGULATION

ARTICLE II – WATER RESTRICTIONS: USE OF BOATS AND OTHER FLOATING DEVICES AND OTHER USES ON DIVISION-CONTROLLED WATERS

AQUATIC NUISANCE SPECIES (ANS)

#103 –

N.

1. ALL VESSELS AND OTHER FLOATING DEVICES OF ANY KIND, INCLUDING THEIR CONTENTS, MOTORS, TRAILERS AND OTHER ASSOCIATED EQUIPMENT ARE SUBJECT TO INSPECTION IN ACCORDANCE WITH INSPECTION PROCEDURES ESTABLISHED BY THE DIVISION PRIOR TO LAUNCH ONTO, OPERATION ON OR DEPARTURE FROM ANY DIVISION CONTROLLED WATERS OR VESSEL STAGING AREAS.
2. ANY NONNATIVE OR EXOTIC PLANT MATERIAL AND ANY AQUATIC WILDLIFE SPECIES LISTED IN DIVISION OF WILDLIFE REGULATION #012-C, 2 CCR 406-0, (COLLECTIVELY REFERRED TO HEREIN AS “AQUATIC NUISANCE SPECIES”) FOUND DURING AN INSPECTION SHALL BE REMOVED AND PROPERLY DISPOSED OF IN ACCORDANCE WITH REMOVAL AND DISPOSAL PROCEDURES ESTABLISHED BY THE DIVISION BEFORE SAID VESSEL OR OTHER FLOATING DEVICE WILL BE ALLOWED TO LAUNCH ONTO, OPERATE ON OR DEPART FROM ANY DIVISION CONTROLLED WATERS OR VESSEL STAGING AREAS.
3. COMPLIANCE WITH THE ABOVE AQUATIC NUISANCE SPECIES INSPECTION AND REMOVAL AND DISPOSAL REQUIREMENTS IS AN EXPRESS CONDITION OF OPERATION OF ANY VESSEL OR OTHER FLOATING DEVICE ON DIVISION CONTROLLED WATERS. ANY PERSON WHO REFUSES TO PERMIT INSPECTION OF THEIR VESSEL OR OTHER FLOATING DEVICE, INCLUDING THEIR CONTENTS, MOTOR, TRAILER, AND OTHER ASSOCIATED EQUIPMENT OR TO COMPLETE ANY REQUIRED REMOVAL AND DISPOSAL OF AQUATIC NUISANCE SPECIES SHALL BE PROHIBITED FROM LAUNCHING ONTO OR OPERATING THE VESSEL OR OTHER FLOATING DEVICE ON ANY DIVISION CONTROLLED WATER. FURTHER, THE VESSEL OR OTHER FLOATING DEVICE OF ANY PERSON THAT REFUSES TO ALLOW INSPECTION OR TO COMPLETE ANY REQUIRED REMOVAL AND DISPOSAL OF AQUATIC NUISANCE SPECIES PRIOR TO DEPARTURE FROM ANY DIVISION CONTROLLED WATER OR VESSEL STAGING

AREA IS SUBJECT TO QUARANTINE UNTIL COMPLIANCE WITH SAID AQUATIC NUISANCE SPECIES INSPECTION AND REMOVAL AND DISPOSAL REQUIREMENTS IS COMPLETED.

4. ANY PERSON OPERATING A VESSEL OR OTHER FLOATING DEVICE MAY BE ORDERED TO REMOVE THE VESSEL OR DEVICE FROM ANY DIVISION CONTROLLED WATER BY ANY AUTHORIZED AGENT OF THE DIVISION IF THE AGENT REASONABLY BELIEVES THE VESSEL OR OTHER FLOATING DEVICE WAS NOT PROPERLY INSPECTED PRIOR TO LAUNCH OR MAY OTHERWISE CONTAIN AQUATIC NUISANCE SPECIES. ONCE REMOVED FROM THE WATER, THE VESSEL OR OTHER FLOATING DEVICE, INCLUDING ITS CONTENTS, MOTOR, TRAILER AND ASSOCIATED EQUIPMENT SHALL BE SUBJECT TO INSPECTION FOR, AND THE REMOVAL AND DISPOSAL OF AQUATIC NUISANCE SPECIES.
5. IT IS UNLAWFUL FOR ANY PERSON TO, OR TO ATTEMPT TO, LAUNCH ONTO, OPERATE ON OR REMOVE FROM ANY DIVISION CONTROLLED WATER OR VESSEL STAGING AREA ANY VESSEL OR OTHER FLOATING DEVICE WITHOUT FIRST SUBMITTING THE SAME, INCLUDING THEIR CONTENTS, MOTORS, TRAILERS AND OTHER ASSOCIATED EQUIPMENT TO AN INSPECTION FOR AQUATIC NUISANCE SPECIES, AND COMPLETING SAID INSPECTION, IF SUCH AN INSPECTION IS REQUESTED BY ANY AUTHORIZED AGENT OF THE DIVISION OR REQUIRED BY ANY SIGN POSTED BY THE DIVISION. FURTHER, IT IS UNLAWFUL FOR ANY PERSON TO FAIL TO COMPLETE THE REMOVAL AND DISPOSAL OF AQUATIC NUISANCE SPECIES IF SUCH REMOVAL AND DISPOSAL IS REQUESTED BY AN AUTHORIZED AGENT OF THE DIVISION OR REQUIRED BY ANY SIGN POSTED BY THE DIVISION.
6. IT IS UNLAWFUL FOR ANY PERSON TO, OR TO ATTEMPT TO, LAUNCH ONTO, OPERATE ON OR REMOVE FROM ANY DIVISION CONTROLLED WATER OR VESSEL STAGING AREA ANY VESSEL OR OTHER FLOATING DEVICE IF THEY KNOW THE VESSEL OR OTHER FLOATING DEVICE, INCLUDING THEIR CONTENTS, MOTORS, TRAILERS, OR OTHER ASSOCIATED EQUIPMENT CONTAIN ANY AQUATIC NUISANCE SPECIES.

BASIS AND PURPOSE

Recent sampling efforts between the Colorado Division of Wildlife and Colorado State Parks personnel detected the presence zebra mussels at Lake Pueblo State Park. Two adult mussels and one immature specimen were found on substrate sampling gear, and the larva (veliger) was found by performing plankton tows. The samples were sent to a

diagnostic laboratory to determine their identity and the presence of zebra mussels was confirmed.

Colorado Division of Wildlife (CDOW) and Colorado State Parks personnel have been conducting field-sampling efforts for several years to evaluate waters across Colorado for the presence of aquatic nuisance species. These efforts are targeted toward locating and monitoring potential introductions of invasive species that can be environmentally and economically detrimental to the state, its wildlife and recreation resources. Additional sampling at Lake Pueblo State Park to determine the degree of infestation and exact mussel species is planned for this winter and spring. Colorado State Parks and CDOW are planning a concerted effort to notify recreational users at Pueblo Reservoir, and other state parks, about the potential impacts of zebra mussels.

The Pueblo State Fish Hatchery, which receives its water supply from Pueblo Reservoir, will undergo an assessment regarding options to prevent the spread of adult mussels and/or veligers. Sampling inspections have been conducted to determine if zebra mussels or larvae are present in the hatchery unit, to date none have been detected. Pueblo Hatchery raises a variety of warm and cold-water species of fish (walleye, bluegill, crappie, channel catfish, smallmouth bass, wiper, rainbow, cutthroat X rainbow hybrid, and brown trout) and distributes these fish across the state each year. No fish are planned to be stocked from the Pueblo Hatchery until April this year. Effective water treatment options exist to eliminate zebra mussel adults and/or veligers prior to the fish being stocked.

The State of Colorado is in the process of developing a statewide plan for aquatic nuisance species; however, the plan is not yet complete. When the plan is complete, it will address measures needed for containing and preventing the spread of zebra mussels and quagga mussels in Colorado. Wyoming, New Mexico, and Nebraska are the only states surrounding Colorado that do not have or are not working on a state aquatic nuisance species plan. Colorado's plan, when complete, will likely call for simple voluntary measures to be taken by all boaters and other recreational watercraft users as precautionary steps every time they go to a lake, river or stream.

Such simple voluntary measures will likely include the following steps:

Always clean the hull of your boat; drain the water from the boat, livewell and the lower unit of the engine; dry the boat, fishing gear, and equipment; inspect all exposed surfaces; and remove all plant and animal material. Many of the aquatic nuisance species can harm a boat or motor. These invaders will attach themselves to boats and can cause damage to boat motors if they block the flow of cooling water through the engine.

However, zebra mussels do not pose a known threat to human health. Biologists are concerned that zebra mussels may cause ecological shifts in the lakes they invade, with consequences to valued wildlife resources. Because these invasive mussels attach to hard surfaces like concrete and pipes, they will affect canals, aqueducts, water intakes and dams, resulting in increased maintenance costs for those facilities.

The zebra mussel gets its name from the black- (or dark brown) and white-striped markings that appear on its shell. Zebra mussels are native to the Caspian, Black, and Azov seas of Eastern Europe. Quagga mussels, a close relative of zebra mussels that inhabit deeper water have not been detected at Pueblo Reservoir at this time. Quagga mussels are native to the Dneiper River drainage of the Ukraine. Quagga mussels are small, freshwater bi-valve mollusks (relatives to clams and oysters) that are triangular in shape with an obvious ridge between the side and bottom and can have ecological and economic impacts similar to zebra mussels.

These exotic mussels were first discovered in the United States in Lake Saint Clair, Michigan, in 1988 and are believed to have been introduced in 1986 through ballast water discharge from ocean-going ships. Since their initial discovery, zebra mussels have spread rapidly throughout the Great Lakes and Mississippi River Basin states and other watersheds throughout the eastern and central United States. Quagga mussels have not spread as extensively.

The primary method of overland dispersal of these mussels is through human-related activities. Given their ability to attach to hard surfaces and survive out of water, many infestations have occurred by adult mussels hitching rides on watercraft. The microscopic larvae also can be transported in bilges, ballast water, live wells, or any other equipment that holds water.

They are primarily algae feeders. They feed by filtering up to a liter of water per day through a siphon. These mussels consume large portions of the microscopic plants and animals that form the base of the food web. The removal of significant amounts of phytoplankton from the water can cause a shift in native species and a disruption of the ecological balance a lake or other waterway.

These mussels can settle in massive colonies that can block water intake and affect municipal water supply and agricultural irrigation and power plant operation. In the United States, Congressional researchers estimated that zebra mussels alone cost the power industry \$3.1 billion in the 1993-1999 period, with their impact on industries, businesses, and communities more than \$5 billion.

For these reasons, it is imperative that the Board of Parks and Outdoor Recreation and Colorado State Parks take immediate action aimed at containing and preventing the spread of zebra mussels to other waters of the state and of the nation. Colorado is at a high elevation in the nation's watershed. The cost of taking immediate action is greatly outweighed by the costs and negative impacts of waiting to respond.

The statutory authority for this regulation can be found in Colorado Revised Statutes sections 33-10-101, 33-10-102, 33-10-106, 33-10-107, 33-10-108, 33-10-109 and 24-4-103.

EMERGENCY REGULATION #103-N AQUATIC NUSIANCE SPECIES (ANS)

Chemicals

Potassium Chloride (KCL) is an option at our parks, when hot water pressure wash decontamination is not available. Enclosed is the MSDS sheet for KCL. It is basically salt, but there are questions concerning short term effectiveness and our liability if we put it in boats. At this time CDOW is recommending this as a method that boaters can use on their own. See their website for updated information and Tips to Boaters.

- Contact Rob Billerbeck or Greg Gerlich from CDOW with questions

Material Safety Data Sheet

Potassium Chloride Solution

Identity: Potassium Chloride Solution

Form/Aspect: KCl salts dissolved in water

Use: Electrolyte Solution for electrodes with a Calomel reference

Also sold separately as a solution for refill or storage of electrodes

Part #: AS-3120-C20-0250

Part #: AS-3120-C20-0500

Section I - General Information

Manufacturer: Broadley-James Corporation, 19 Thomas, Irvine, CA 92618
Phone: (949) 829-5555
Emergency Phone: (949) 829-5555 Or (800) 288-2833
Date Prepared: June 22, 2000

Section II - Ingredient Information

Potassium Chloride	28.3%	OSHA PEL/ACGIH TLV: N/A
Cas. No.: 7447-40-7		
Molecular Formula: KCl		
Water	Balance	

***According to OSHA, this product should not be considered a hazardous material.**

Section III - Physical/Chemical Characteristics

Boiling Point:	N/A	Vapor Density (Water): N/A
Melting Point:	N/A	Appearance/Odor: Clear, odorless liquid
Water Solubility:	100% by weight	Specific Gravity (H ₂ O=1): 1.15
Evaporation Rate:	N/A	Vapor Pressure: (mm Hg): N/A

Section IV - Fire And Explosion Hazard Data

Flash Point:	N/A	Unusual Fire & Explosion Hazards:	None
Extinguishing Media:	Any	Flammable Limits:	LEL: N/A UEL: N/A
Special Fire Fighting Procedures:	N/A		

Manufacturers of pH & D.O. Sensors for Science and Industry

19 Thomas, Irvine, California 92618 USA

Phone: 949.829.5555 Toll-Free: 800.288.2833 Fax: 949.829.5560

E-Mail: sales@broadleyjames.com Website: www.broadleyjames.com



MSDS (Continued)

MSDS - Page 2

Identity: Potassium Chloride Solution

Part #: AS-3120-C20-0250

Part #: AS-3120-C20-0500

Section V - Reactivity Data

Stability: Stable

Conditions To Avoid: None Known

Hazardous Polymerization: Will Not Occur

Conditions To Avoid: None Known

Incompatibility: BrF₃

Hazardous Decomposition Or Byproducts: N/A

Section VI - Health Hazard Data

Exposure Limit: Potassium Chloride: Oral-Guinea Pig LD50: 2500 mg/kg

Route Of Entry: Inhalation: N/A Skin: N/A Ingestion: Yes

Carcinogenicity: NTP: N/A IARC Monogr: N/A OSHA Reg.: No

Health Hazards: None Known

Effects Of Overexposure: (See below)

Emergency & First Aid Procedures:

Oral: Large doses cause GI irritation, purging, weakness and circulatory problems. Contact a physician.

Section VII- Precautions For Safe Handling And Use

Spill Response: Pick up and wash down drain with excess of water.

Waste Disposal: Not regulated.

Precautions To Be Taken In Handling & Storage: Store in cool, dry place.

Other Precautions: N/A

Section VIII - Control Measures

Respiratory Protection: N/A

Protective Gloves: Optional

Other Protective Equipment: None Required

Ventilation: None

Eye Protection: Safety Glasses

Work/Hygienic Practices: Wash hands thoroughly before eating, drinking or smoking.

Key: N/A = Not Applicable Or Not Available

N/D = Not Determined



Manufacturers of pH & D.O. Sensors for Science and Industry

19 Thomas, Irvine, California 92618 USA

Phone: 949.829.5555 Toll-Free: 800.288.2833 Fax: 949.829.5560

E-Mail: sales@broadleyjames.com Website: www.broadleyjames.com

Letters/Surveys

The following documents are contained in this section:

- A letter which has been sent to all Registered Boaters in Colorado.
- A boater survey –CDOW is sending out to survey a subset of boaters, but a copy is not available yet.



1313 Sherman Street, Room 618 • Denver, Colorado 80203 • Phone (303) 866-3437 • FAX (303) 866-3206 • www.parks.state.co.us

Dear Registered Boater,

In response to the appearance of zebra mussels in Colorado, we at Colorado State Parks are sending this notice to all registered boaters in Colorado to make you aware of important new procedures that may affect you this year.

Damage Mussels can Cause

Zebra and quagga mussels have recently spread from the Great Lakes and Midwest states to several lakes in eastern Kansas, Oklahoma and one in Nebraska. Just last year they spread to Lake Havasu, Lake Mead, Lake Powell and Southern California. Zebra mussels were confirmed at Lake Pueblo this January, the first and only finding in Colorado. This is a concern because mussels can cause clogging and damage to boat motors, can negatively impact fishing, and can create very expensive maintenance issues at dams, water treatment plants, and power plants.

New Laws and Regulations

To protect Colorado waters and boating opportunities, there is a new state law that prohibits the transport of aquatic nuisance species (ANS), including zebra and quagga mussels. There will now be inspection and education checkpoints set up at many reservoirs. Boaters will be required to cooperate with trained inspectors at these locations to show that their boat is clean and drained before launching at a State Park or State Wildlife area. If a mussel or other ANS is found, boaters will be required to decontaminate their vessel by approved washing techniques. We will have **free** boat washing facilities available at a number of locations later this summer for any boats found with mussels or other ANS.

Inspection Process & Locations

Where: We have implemented inspections for all trailered watercraft **leaving** Lake Pueblo since zebra mussels were discovered at this reservoir. Spinney Mountain and Eleven Mile Reservoirs have already implemented a pilot program for boats **entering**. At other State Parks, State Wildlife Areas, and a number of convenient locations near the state lines, we will be phasing in inspections over the summer to provide opportunities to boaters to have their boats inspected. These inspections will be provided free of charge at state facilities. Please remember that water bodies not operated by State Parks (private lakes, National Park Service lakes, Denver Water lakes) may implement inspection and quarantine procedures that differ from the State program.

How Long Will It Take: These boat inspections should not take much time. Most inspections will take just a few minutes. We will be working hard to implement these new procedures efficiently and keep down wait times.

How You Can Help: Fortunately, it is easy to minimize the risk of spreading these species by using methods which have been tested and proven in other states. By making sure your boat is **CLEANED, DRAINED and DRIED** before you arrive at State waters, you may speed up your inspection time significantly. Please help us verify your boat is drained by making sure bilge plugs are open, ballast tanks are empty and live bait wells are empty when you arrive at a water body. Dry out your boat between water bodies - drying can take 5 days in mid summer to 9 weeks in fall or spring depending on the temperature. Be sure to dry equipment and anchors too.

Your cooperation in this effort is critical. Other states have had great success stopping the spread of these mussels by getting the information out as boaters have been eager to cooperate to protect their waters and protect their boating opportunities. So please:

CLEAN, DRAIN and DRY your boat

Please spread the message, not the mussels. Thank you for your assistance in this important effort!

Sincerely,

Dean Winstanley
Director of Colorado State Parks





Colorado State Parks

ATTENTION:

Important Boat Registration Information

You can help protect the future of boating in Colorado!

See updates on boating information related to Zebra Mussels at these websites:

Colorado State Parks

<http://parks.state.co.us/Zebra+Mussels.htm>

Colorado Division of Wildlife

<http://wildlife.state.co.us/WildlifeSpecies/Profiles/InvasiveSpecies/ZebraandQuaggaMussels.htm>



**STOP AQUATIC
HITCHHIKERS!**

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net

Colorado State Parks
1313 Sherman St. Room 618
Denver, CO 80203

Name
Address 1
Address 2
City, State Zip

Fact Sheets

Included in this section are fact sheets featuring these ANS species:

Zebra mussel

Quagga mussel

Asian clam

New Zealand mud snail

Eurasian Water Milfoil



ZEBRA MUSSELS

www.miseagrant.umich.edu

What is a zebra mussel?

The zebra mussel is a small, non-native mussel originally found in Russia. In 1985, the zebra mussel was introduced into the Great Lakes most likely via the ballast water of one or more transoceanic ships. The temperate, plankton-rich waters of Lake St. Clair and Lake Erie provided an ideal environment for the prolific species. In less than 10 years zebra mussels spread to all five Great Lakes, the Ohio River Basin and the Mississippi River Basin.

What do zebra mussels look like?

Zebra mussels get their name from the striped pattern of their shells. However, the pattern varies greatly to where there are no stripes, only dark or light colored shells. Zebra mussels can grow to a maximum length of about 50mm and live four to five years.

Why are zebra mussels a problem?

Zebra mussels affect natural ecosystems both directly and indirectly. The greatest direct impact is caused by their feeding habits. They are voracious "filter feeders" processing up to 1 gallon of water per day per mussel. Inland lakes, no matter the size, present unique ecological systems. When zebra mussels disrupt these fragile systems, their filter feeding process depletes critical microscopic organisms necessary for a healthy food web. Zebra mussels are similar to other mussel species because they attach themselves to hard surfaces, but unlike other species they will also easily attach to native mussels. This behavior, called bio-fouling, has greatly reduced native mussel populations.

What is the habitat and history of the zebra mussel?

Today more than 100 lakes and inland waters in Michigan are infested with zebra mussels. The zebra mussel is a very successful invader—they live and feed in many different aquatic habitats, breed prolifically, and have a "planktonic larva" stage when they are young, which makes them invisible to the naked eye.

Zebra mussels' affinity for hard surfaces has made water treatment plants and power structures vulnerable to colonization. Since 1989, in areas of extensive zebra mussel colonization, some plants have reported reduced pumping capabilities and plant shutdowns. As gluttonous filter feeders, zebra mussels may increase human and wildlife exposure to organic pollutants. Zebra mussels can quickly accumulate organic pollutants within their tissues to levels more than 300,000 times greater than natural environmental concentrations. These contaminants can be passed up the food chain to any fish and waterfowl eating zebra mussels.

- Zebra mussels have disrupted the traditional aquatic food chains of many inland lakes.
- Regardless of their size, inland lakes represent unique ecological systems.
- When zebra mussels enter into these fragile system, their voracious filter feeding depletes the availability of microscopic organisms that play a critical part in each lake's ecological food web.



Quagga mussel

Zebra mussel

Offices

Ann Arbor
University of Michigan
Samuel T. Dana Building
440 Church St., Suite 4044
Ann Arbor, MI 48109-1041
(734) 763-1437

East Lansing
Michigan State University
334 Natural Res. Bldg.
East Lansing, MI 48824
(517) 353-9568

Northeast:
(989) 984-1056

Southwest:
(616) 846-8250

Northwest:
(231) 922-4628

Upper Peninsula:
(906) 226-3687

Southeast:
(313) 410-9431
(586) 469-7431

Great Lakes Regional:
(734) 741-2287



Michigan Sea Grant College Program
Michigan Sea Grant is a cooperative program of the University of Michigan and Michigan State University. Funding: NOAA-National Sea Grant College Program with matching funds from the University of Michigan and Michigan State University. Michigan State University and the University of Michigan are equal opportunity/affirmative action institutions.

UNIVERSITY OF MICHIGAN

MICHIGAN STATE
UNIVERSITY

Can the spread of zebra mussels be controlled?

Zebra mussels can spread to other inland waters in their immature form known as "veligers," which are microscopic and free-floating. As adults, zebra mussels attach to boat hulls, engines aquatic weeds, or other surfaces. Adult mussels are very hardy and can survive out of water for extended periods depending upon temperature, humidity, wind, and sunlight. Maximum out-of-water survival time in ideal conditions is about 10 days for adults and 3 days for newly settled juveniles.

How can you help prevent the spread of zebra mussels?

- Remove any visible vegetation from items that were in the water, including the boat trailer, and all equipment.
- Flush engine cooling system, live wells, and bilge with tap water. If possible, use hot water.
- Do not re-use bait if exposed to infested waters.
- Dry boat and other equipment for at least 48 hours before using in uninfested waters.
- Examine boat exterior for mussels if it has been docked in infested waters; if mussels are found or exterior is heavily fouled by algae, either clean fouled surfaces or leave boat out of the water for at least 5 days before entering uninfested waters.

References

"Protect Your Waters." Harmful Aquatic Hitchhikers: Mollusks: Zebra Mussel. Last updated: April 2006. www.protectyourwaters.net/hitchhikers/mollusks

"Zebra Mussel." USGS Great Lakes Science Center. Last updated: August 10, 2004. www.glsc.usgs.gov/main

Kelch, David O. and Hilgendorf, Maran Brainard. "Boaters: Take Action Against Zebra Mussels." Sea Grant. Ohio Sea Grant College Program. Last updated: January 1996. www.ohiosg.osc.edu/OhioSeagrant

Quagga Mussels

FACT SHEET

Pennsylvania Sea Grant, as part of the National Sea Grant Program, promotes efforts to improve the environmental and economic health of Pennsylvania's coastlines.

Focusing on the Lake Erie and Delaware River watersheds, Pennsylvania Sea Grant works to increase public awareness of coastal environmental and economic issues through extension, communication, applied research, and education activities.

The National Oceanic and Atmospheric Administration (NOAA) administers the National Sea Grant College Program. Pennsylvania Sea Grant is also supported by the Pennsylvania State University and the Commonwealth of Pennsylvania.

Pennsylvania Sea Grant
Penn State Erie
 5091 Station Road
 Erie, PA 16563
 Tel. 814-898-6420
 Fax 814-898-6462

Delaware Estuary Office
 1450 Edgmont Avenue
 Suite 150
 Chester, PA 19013-3934
 Tel. 215-806-0894
 Fax 501-637-2923

Background Quagga mussels (*Dreissena bugensis*), a close relative of the zebra mussel, were first discovered in the Great Lakes region in September 1989, when one was spotted near Port Colborne, Lake Erie; however, the recognition of the quagga type as a distinct species did not occur until 1991. Their arrival to the Great Lakes region, like the zebra mussels, appears to be the result of ballast water discharge from transoceanic ships into the Great Lakes. Quagga mussels (Figure 1) are slightly smaller than zebra mussels, have rounder sides, and do not have a ridge. They have dark concentric rings on the shell and are pale in color near the hinge. Quagga mussels are commonly found down to 98 feet; the zebra mussel is rarely found below 50 feet. For more detail on the quagga-zebra mussel comparison refer to Table 1



Figure 1. Quagga mussel: Photo taken by Bill Tate of the USGS - <http://nas.er.usgs.gov/zebra.mussel>

Quagga mussels can now be found in Lake Michigan, Lake Huron, Lake Erie, Lake Ontario, Lake St. Clair, Saginaw Bay, throughout the St. Lawrence River north to Quebec City, and there are also a few inland occurrences in New York, Ohio, Michigan, and Pennsylvania (Figure 2).

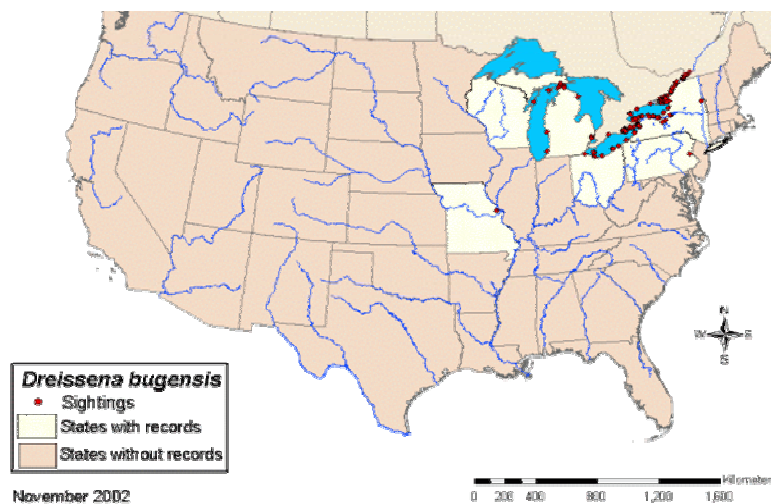


Figure 2. 2002 Distribution of Quagga mussels: Image by Myriah Richerson and Amy Benson of the USGS - <http://nas.er.usgs.gov/zebra.mussel>

Comparison of Zebra and Quagga Mussels Researchers are concerned that the quagga mussel may be able to tolerate a wider range of temperature extremes than the zebra mussel. Zebra mussels can colonize on nearly any hard object or substrate, including colonization of hard objects deposited in or on mud or other soft substrates. Pieces of native mussel shells can serve as a substrate (base) for microscopic, free-floating larvae called settling veligers. As a few mussels begin to grow, they in turn serve as substrate for additional colonization, forming what is known as a druse. In contrast, quagga mussels can live directly on a muddy or sandy bottom, and appear more tolerant of low temperatures and extreme depths than zebra mussels. Quagga mussels are as prolific as zebra mussels; a single mature female mussel can produce more than 1 million eggs in a spawning season.

	ZEBRA MUSSELS	QUAGGA MUSSELS
Shell	Triangular shape, byssal (ventral) side flat. Obvious ridge between side and bottom	Rounder sides, byssal side rounded. ridge lacking
Color	Variable colors and patterns, usually dark	Pale near hinge, dark concentric rings on the shell
Byssal	Large groove in middle of flat side; allows tight hold on rocks	Small byssal groove near the hinge
Depth in lake	3 to 98 feet (1-30 m), rarely found below 50 feet (15 m)	3 to 351 feet (1-107 m), commonly found down to 98 feet (30 m)
Temperature	32° to 86°F (0° to 30°C)	32° to 86°F (0° to 30°C)
Tolerance	54° to 68°F (12° to 20°C) preferred	39° to 68°F (4° to 20°C) preferred
Reproductive Temperature	Young present at 57 ° to 68°F (14° to 20°C)	Young present as low as 46°F (8°C)

Table 1. Zebra Mussel – Quagga Mussel Comparison Summary

Impact Quagga mussels are extraordinary water filterers, removing large amounts of phytoplankton and suspended particulates from the water. By removing the phytoplankton, quaggas in turn decrease the food source for zooplankton and forage fish, therefore altering the food web. In addition, quagga mussels accumulate contaminants within their tissues to levels greater than concentrations in the environment; therefore, increasing wildlife exposure to contaminants. The quagga mussel can clog water intake structures, such as pipes and screens; therefore, reducing pumping capabilities for power and water treatment plants – costing industries, companies, and communities. Also, recreation-based industries and activities have been impacted by the quagga mussel: docks, breakwalls, buoys, boats, and beaches have all been heavily colonized.

How to stop the spread Microscopic larvae may be carried in live wells or bilge water, bait buckets, and attach themselves to boat hulls and trailers. Drain water from the motor, live well, bilge and transom wells, and any other areas of your boat and equipment while on land before leaving any water body. Quagga mussels cling to vegetation, so great care should be taken to clean off all vegetation from the boat, trailer, and motor before transport to another body of water.

Information for this fact sheet was adapted from a variety of sources, including:

The Great Lakes Information Network - www.great-lakes.net

Sea Grant Nonindigenous Species Site (SGNIS) - www.sgnis.org

Great Lakes Sea Grant Network - www.uaf.edu/seagrant/private/SG-regional/greatlakes/index.html



AQUATIC INVASIVE SPECIES OF PENNSYLVANIA

HOME

ABOUT AIS

AIS IN PA WATERSHEDS

CAREER CORNER

TEACHER GATEWAY

LINKS

[AIS Site Map](#)

WATERSHEDS:

Lake Erie

Ohio River

Chesapeake Bay

Delaware River

ASIATIC CLAM

(Corbicula fluminea)



The Asiatic clam is a small [bivalve](#) that has become an invasive species in the United States.

ORIGIN

Its origin is in eastern Asia and Africa. Exactly when and how it arrived in the United States is unknown.

HABITAT

The Asiatic clam does well in estuarine habitats and river beds and is found in fresh waters throughout the United States. It has colonized areas of the Delaware and Ohio River basins, and is found in all five Gulf states and northern Mexico. Populations have been reported for the San Francisco Bay, California and Chesapeake Bay, Virginia.

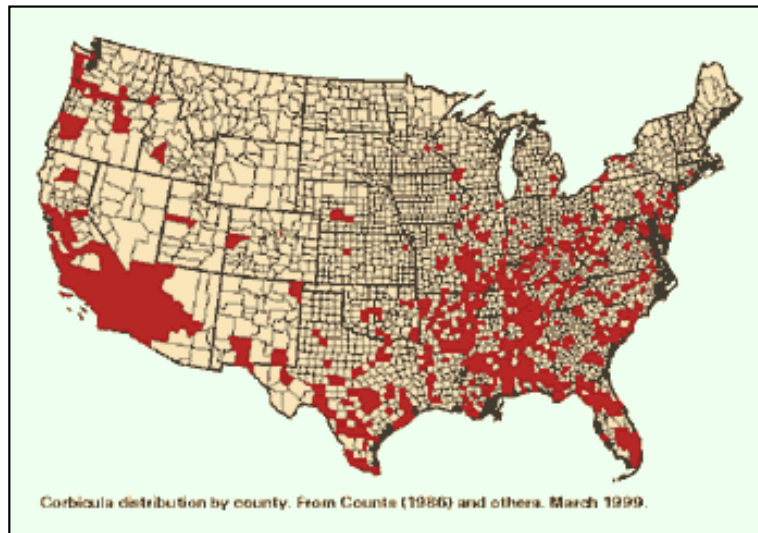
IDENTIFICATION

Adults can reach 50 mm in length. The shell has distinct rings and is a yellowish-brown color.



SPREAD

Immature Asiatic clams are free-floating and difficult to see, two factors that have contributed to their rapid spread across the United States. The clams have a higher tolerance to pollutants than native species, allowing for colonization in areas that would most likely not be inhabited by native species.



Distribution of Asiatic Clam - March 1999

IMPACT

Much like the zebra and quagga mussels, the Asiatic clam is known to clog intake pipes, damage industrial water systems, alter aquatic habitat, and disrupt irrigation canals. There is also concern that Asiatic clams compete for food with native mussels and clams.

PREVENTION AND CONTROL

In [open systems](#) such as the Ohio River, careful maintenance of boat and other watercraft should be observed. All watercraft should be washed thoroughly with HOT water. Bait buckets should never be transferred between bodies of water. Control methods are similar to those of zebra and quagga mussels. In closed environments, such as power plants, mechanical or chemical control methods are used to eradicate the species.

FOR MORE INFORMATION ON ASIATIC CLAM

- [Asiatic Clam](#)
- [Asiatic Clam research articles](#)

Date Created: May 21, 2006

Revised:

Authors: Julie Baxter and Wendy
Newman

Parks Affected: Most Reservoir Parks

New Zealand Mud Snail Fact Sheet



Important Facts on New Zealand Mud Snails

- The New Zealand mud snail (*Potamopyrgus antipodarum*) is a nonnative, invasive organism that competes with native species for resources and may compromise the long-term health of Colorado's aquatic ecosystems. Similar to impacts observed from the zebra mussel in the midwestern U.S., the New Zealand mud snail (NZMS) has the potential to drastically alter aquatic communities in the west.
- The species is a miniscule snail native to the southern hemisphere, which was most likely introduced to the U.S. by human transport.
- Mud snails are 1/8"-1/4" inches in size (but can be as small as a grain of sand), are dark brown in color, and have a cone-shaped shell with five to six whorls.
- The snail inhabits a wide range of aquatic habitats, including streams and reservoirs in the western U.S. In Colorado, the mud snail has been discovered in Boulder Creek and in the South Platte River in Eleven Mile Canyon.
- Mud snails consume food in cobble or gravel substrates or on aquatic vegetation, competing with native invertebrates for space and food resources. Reduction in native insect species diversity or abundance diminishes the availability of this critical resource for fish such as trout. New Zealand mud snails are not a viable food source for native fish and yield as little as 2% of their nutritional value when eaten by trout.
- New Zealand mud snails are capable of rapid population growth. The species reproduces asexually, giving birth to well-developed clones. Just one NZMS can start a whole new colony in a stream or river, by multiplying in astounding numbers, and completely covering stream bottoms. For instance, snail densities have grown from undetectable levels to 10,000-500,000 snails per square yard of streambed in rivers in Yellowstone National Park in just a few years.
- Once they have invaded, NZMS are nearly impossible to contain because they are highly resilient. The snails can survive several days out of water, in a wide range of temperatures, and for days up to weeks on damp to wet materials. They can even pass unscathed through the digestive tracts of fish.

New Zealand mud snails average 1/8" in length.

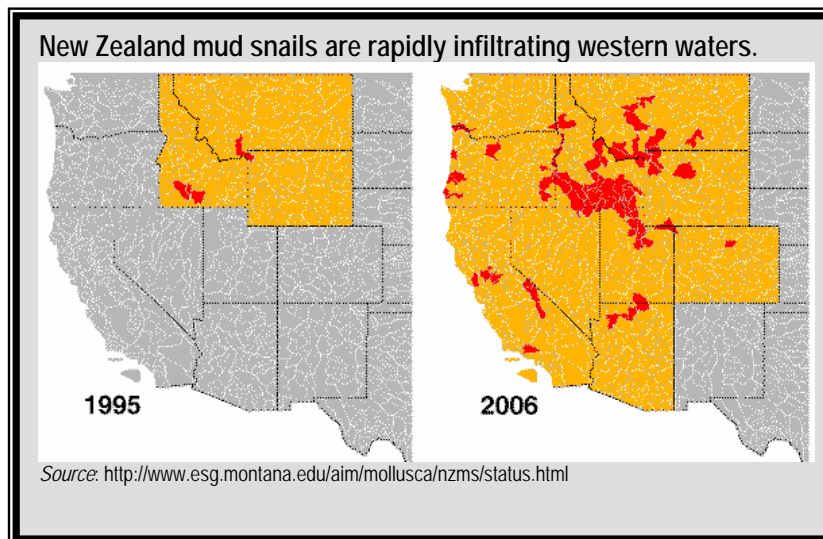


Source: www.nps.gov

- The mud snail invades by “hitchhiking” on boats, rafts, and boots, waders, nets, and other fishing gear. Recreational gear and earth-moving equipment that are not thoroughly dried before their next use also may transport mud snails.

How You Can Help Prevent the Spread of New Zealand Mud Snails

- Make sure to thoroughly wash waders, boots, tack, and other fishing gear. Wash by soaking in a solution of 50% water and 50% bleach (or other cleaning solution) for five minutes, rinse in clean water, and air dry out of direct sunlight. Freezing overnight also kills the snails.
- Remove all sediment and vegetation from boats, trailers, and fishing gear when moving between waters. Drain boats, equipment, coolers, live bait wells and any holder of water.
- Do not transport any fish from one body of water to another. It is unlawful in Colorado to move and stock live fish without a special license.
- The Colorado Division of Wildlife is trying to limit the spread of the snails to other streams in Colorado through outreach efforts and a NZMS management plan. For more information, contact Robin Knox at (303) 291-7362 or robin.knox@state.co.us.



Sources: Colorado Division of Wildlife, <http://wildlife.state.us/>
Montana State University, <http://www.esg.montana.edu/aim/mollusca/nzms/id.html>
National Park Service, <http://www.nps.gov/yell/planvisit/todo/fishing/mudsnail.htm>

EURASIAN WATERMILFOIL



STOP AQUATIC HITCHHIKERS!™

Prevent the transport of nuisance species.
Clean all recreational equipment.
www.ProtectYourWaters.net



If you see this plant contact:

Rob Billerbeck
Colorado State Parks
rob.billerbeck@state.co.us
Phone: 303-866-3203 x 4341



Top 3 pictures are courtesy of The Lake George Association, Lake George, NY

Don't let this happen
to your water!

Be on the lookout for
Eurasian watermilfoil!

Eurasian watermilfoil (EWM) is an invasive species in the Front Range and has been found from St. Vrain State Park in Longmont south to Chatfield State Park in Littleton. It is known to be in Boulder, Jefferson, Denver and Weld Counties.

Why control Eurasian watermilfoil?

EWM forms dense mats which impair all forms of water-based recreation, including boating, fishing and swimming. These dense mats rapidly destroy freshwater wildlife habitat by displacing native vegetation and disrupting the food chain. EWM negatively effects water quality by altering water chemistry. EWM slows the flow of water in irrigation ditches and canals. The standing water created by EWM is ideal mosquito habitat.



Photo courtesy of Joe DiTomaso, U.C. Davis

How to Identify Eurasian watermilfoil:

- EWM is a submerged aquatic plant that grows in shallow waters.
- EWM has long, branching stems gathered near the surface with soft feathery leaves.
- Leaves are attached in whorls of four and have 11-21 pairs of leaflets which are closely spaced.
- Leaves appear limp out of water.



Photo courtesy of Joe DiTomaso, U.C. Davis

HELP: Prevent the spread of Eurasian watermilfoil:

- Inspect and remove all visible mud, plants and animals before leaving any body of water.
- Rinse your boats, boat trailers, personal watercrafts and any equipment that came into contact with the water after takeout and before you put-in at another water. Use hot water (above 104°F) to rinse boats and equipment. If hot water is not available, use salt water or a high pressure rinse.
- Drain water from motors, live wells and bait containers before leaving the water.
- If you can't rinse, dry your gear (boots, waders, water skis, fishing poles) for at least 6 days.
- Do **NOT** release any unwanted aquarium plants or animals into any body of water.