

Stop the Spread of Invasive Species



What are Aquatic Nuisance Species?

Aquatic Nuisance Species (ANS) are a significant and rapidly growing threat to Colorado's water supply and to boating and fishing recreation. ANS are invasive animals, plants, and disease-causing pathogens that are "out of place" in Colorado's rivers, lakes, streams, and wetlands. They are introduced accidentally or intentionally outside of their native range. Because they are not native to Colorado habitats, they have no natural competitors and predators. Without these checks and balances, the invaders are able to reproduce rapidly and out-compete native species for space and nutrients. ANS have harmful effects on natural resources, water supply systems and recreational opportunities. Once introduced, most invasive species cannot be eradicated and cost millions of dollars to manage. Preventing the introduction and spread of ANS is critical!



PHOTO BY MICHIGAN SEA GRANT

Zebra and Quagga Mussels

Zebra and quagga mussels grow and reproduce quickly and have significant economic, ecological and recreation impacts. They degrade water quality. They attach to most underwater structures, clog water supply pipes and encrust and smother native species. As filter feeders they eat most of the food at the bottom of the food chain, leaving little or nothing for native aquatic species. They are transported to uninfested waters on trailered watercraft, or in bait buckets, live wells, bilge water, motors, gear, and equipment.

RUSTY CRAYFISH PHOTO BY PHIL MYERS, MUSEUM OF ZOOLOGY, UNIVERSITY OF MICHIGAN
NEW ZEALAND MUDSHELL PHOTO BY MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY
EURASIAN WATERMILFOIL PHOTO BY MICHIGAN SEA GRANT



Rusty Crayfish

Rusty crayfish eat small fish, insects, and fish eggs. They also eat aquatic vegetation, damaging underwater habitat that is important for fish spawning, cover, and food. They are aggressive and displace native crayfish. They have been introduced to uninfested water by anglers who use the crayfish as bait and throw unused bait

into the water or illegally stock them as a prey base for fish.



New Zealand Mudsnail

New Zealand mudsnails (NZMS) compete with native invertebrates—native mussels, mayflies, caddisflies, and other aquatic insects—for space and food. NZMS reduce these prey sources for fish and are not a good food source themselves. Their hard shell allows them to pass through a fish gut unharmed. NZMS are carried to uninfested waters

on fishing gear. They can survive up to 50 days on a damp surface and several days on a dry surface.

Eurasian watermilfoil

Eurasian watermilfoil forms dense mats that restrict swimming, fishing, and boating and clog water intakes. The mats shade and choke out native aquatic plants. The decaying plants foul beaches and decrease oxygen levels in the water, destroying habitat and food needed by fish and birds. The mats slow the flow of water in ditches, rivers, and streams and create ideal mosquito habitat. Eurasian watermilfoil reproduces by seeds, fragmentation and winter buds. Any plant fragment can start a new infestation.



Clean Boats and Gear Can Stop the Spread of Invasive Species!



PHOTO BY BRAD HENLEY



Attention Boaters!

CLEAN—Remove all plants, animals and mud. Thoroughly wash everything: boats, trailers, vehicle hitches and motors. Aquatic plant fragments and animals can hide in mud and survive many days out of water. Be sure to clean all fishing equipment including waders and boots.



PHOTO BY ELIZABETH BROWN, DOW

DRAIN—Completely drain every conceivable space or item that could hold water, including live wells, bait containers, ballast and bilge tanks, and engine cooling systems.

DRY—Allow sufficient time for boats and equipment to dry completely before launching in other waters.

DISPOSE BAIT—Properly dispose unused live bait into trash containers, not into the water.

NEVER DISPOSE—Of aquarium or classroom animals or plants in any body of water or natural setting.

REPORT—If you find anything that you think is an invasive species on your boat or in a water body, report it to the DOW by emailing ReportANS@state.co.us or call (303) 291-7295.



Keeping Colorado Wild

Attention Anglers!

Anglers who use waders should scrub the bottom of waders and boots with a wire brush and remove all mud, plants and organic materials in between each and every use. Anglers should then perform **one** of the following disinfection recommendations before going into the next body of water:

OPTION 1—Submerge waders and gear in a large tub filled with 50% Formula 409 and water for at least 10 minutes, scrubbing debris and visually inspecting waders and gear for snails before rinsing. Rinse water must be from a New Zealand mudsnail-free source (to avoid re-infection) and the chemical bath must be properly disposed of away from the water body.

OPTION 2—Submerge waders and gear in a large tub filled with 1:15 of Sparquat 256 institutional cleaner (3.1% concentration) and water for at least 10 minutes, scrubbing debris from the gear, and visually inspecting the gear for snails before rinsing. Rinse water must be from a New Zealand mudsnail free source (to avoid re-infection), and the chemical bath must be properly disposed of away from the water body.

OPTION 3—Spray or soak waders and gear with water greater than 140° Fahrenheit for at least 10 minutes.

OPTION 4—Dry your waders and equipment completely for a minimum of 10 days in between each use (remember that mudsnails can survive several days out of water).

OPTION 5—Place waders and boots in a freezer overnight between each use.

The Colorado Division of Wildlife is the state agency responsible for protecting and managing wildlife and its habitat, as well as providing wildlife-related recreation. The Division is funded by hunting and fishing license fees, federal grants and Colorado Lottery proceeds through Great Outdoors Colorado. 2/2011 - ??,000