

COLORADO PARKS & WILDLIFE

# Protect Colorado's Lands and Waters

LEARN HOW YOU CAN STOP INVASIVE SPECIES



# Introduction

## What Are Invasive Species?

Invasive species are plants, animals, insects or diseases that are not native to Colorado and have harmful negative effects on the economy and environment. They are introduced accidentally or intentionally outside of their native range. Because they are not native, they have no natural competitors or predators. Without these checks and balances, the invaders are able to reproduce rapidly and out-compete native species. Invasives have harmful effects on natural resources and disrupt our use of land and water in Colorado.

Most invaders can be grouped into a few categories:

**Aquatic Nuisance Species (ANS)** are aquatic plants and animals that invade lakes, reservoirs, rivers and streams. Examples of ANS are the zebra mussel, quagga mussel, New Zealand mudsnail, Asian carp or Eurasian watermilfoil. ANS can also include fish pathogens and diseases, such as viral hemorrhagic septicemia (VHS) or whirling disease.

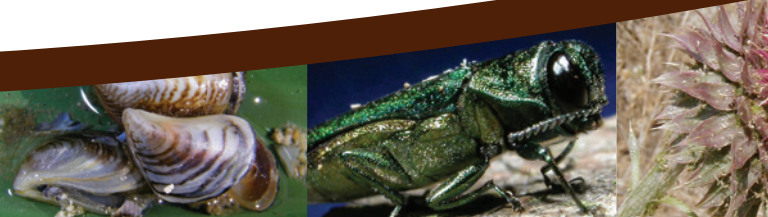
**Noxious Weeds** are terrestrial or aquatic exotic plants that out-compete natives for light, space and nutrients. By displacing native plants, weeds eliminate necessary forage, shelter and habitat for wildlife. Examples of noxious weeds are musk thistle, purple loosestrife and spotted knapweed.

**Forest Pests** are exotic insects that can eliminate a species of trees or defoliate a forest. Exotic forest pests can be introduced through firewood movement. Examples of pests are the emerald ash borer or gypsy moth.

**Invasive Animals** are terrestrial invaders that negatively impact land management. An example of an invasive animal is the feral hog.

## Invasive Species are Everyone's Problem!

Invasive species damage Colorado's lands and waters, hurt the economy, ruin recreational opportunities, result in a loss of property values and threaten public health. They consume enormous amounts of water reducing the supply for livestock, wildlife and humans. They impede water distribution systems for municipal, industrial and agricultural supplies. They can damage boats, gear and fishing equipment, and impair all forms of water based recreation. They displace wildlife habitat and reduce forage, shelter and range for big game and other native species.



Invasive species are the second greatest threat to biodiversity after habitat loss. These species completely alter the food web and destroy habitat that native wildlife need to survive. Invasive species compete with native organisms for limited resources, alter habitats, reduce biodiversity and are capable of causing extinctions of native plants and animals. This can result in huge economic impacts and fundamental disruptions of Colorado's ecosystems.

Overall, economic costs associated with management of invasive species in the United States are estimated to exceed \$120 billion per year (Pimental, 2005). In many cases, once an invasive species has established a population, eradication is nearly impossible. Prevention through education and personal action is the best method to prevent the spread of these harmful invaders.

### **Prevention is the Best Defense!**

Together, we can protect Colorado's lands and waters by preventing the introduction of new invasive species, and stopping the spread of those that are already here. In addition to natural vectors, such as water or wind, invasive species are spread by humans as hitchhikers on watercraft, trailers, vehicles, tires, boots or waders, equipment, gear, firewood and even dogs! In this booklet, there are specific and easy recommendations for ways that you can stop the spread.

- Anglers
- Boaters
- Gardeners and Pet Owners
- Hunters and Outdoor Enthusiasts
- Scuba Divers
- Professionals

**Report Invasive Species!** Report any suspected invasive species to Colorado Parks and Wildlife's Invasive Species Program, 6060 Broadway, Denver, Co 80216.

There are three other options for reporting:

- a. State Invasive Species Program: 303-291-7295
- b. Federal ANS Hotline: 1-877-STOP-ANS
- c. Online: [www.cpw.state.co.us](http://www.cpw.state.co.us)

**You Can Make A Difference!** To find out more information, please visit our website at [www.cpw.state.co.us](http://www.cpw.state.co.us).

*Quagga Mussel, Emerald Ash Borer, Musk Thistle,  
Feral Hog, Spotted Knapweed*





# Anglers

## *ANS pose a significant threat to Colorado's fisheries!*

Keep your angling gear free of mud, plants and organic debris between each and every use. Unknowingly moving a species from one body of water to another, even within different stretches of the same river, can start a domino effect of invasion causing irreversible ecological damage.

### **Inspect**

Examine all equipment including waders, footwear, ropes, anchors, bait traps, dip nets, downrigger cables, fishing lines, and field gear *before leaving the water body.*

### **Clean**

Thoroughly remove any visible material, including plants, animals and mud on footwear and gear with a stiff brush and then disinfect using **one** of the following four methods:

1. **Submerge in a quaternary ammonia based cleaner (6 oz per gallon of water) for 20 minutes**
2. **Soak in 140°F water for 10 minutes**
3. **Freeze overnight**
4. **Dry for at least 10 days**

### **Drain**

Completely drain water from boat, motor, bilge, bladders, wells and bait containers *away from the ramp.*

### **Dry**

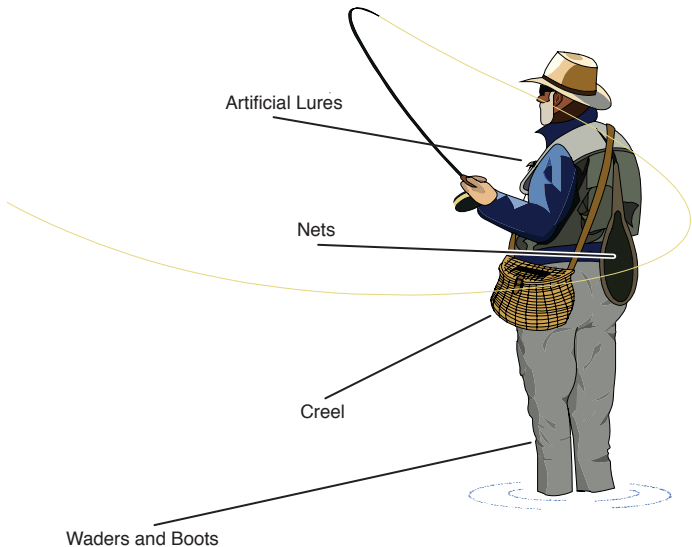
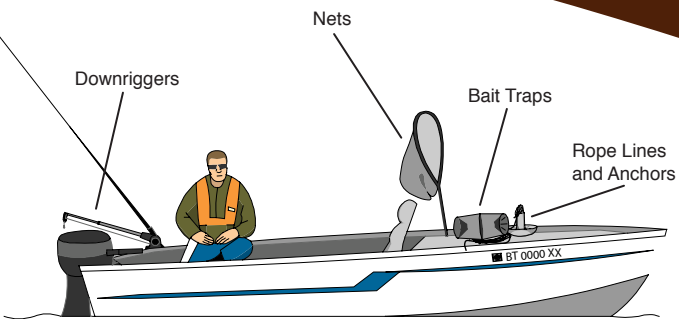
Allow everything to dry completely between each use. Most ANS, such as New Zealand mudsnails, can survive several days out of water and can be transported on footwear or gear.

### **Footwear**

Wear non-felt soled boots instead of felt-soled footwear to further reduce the risk of spreading ANS.

#### **LIVE AQUATIC BAIT**

- **Learn** the bait rules for the water body you plan to fish before you go. There are different rules east and west of the continental divide, above 7,000 feet, and at specific water bodies.
- **Purchase** bait from a reputable Colorado bait dealer and keep your receipt with you as proof of purchase. It is illegal to bring live aquatic bait into Colorado from another state.



- **Dispose** of unwanted bait, fish parts, worms, and packing materials, in the trash; do not dump them in the water or on land.
- **Never** dump live fish or other organisms from one water body into another. Fish caught for eating or taxidermy should be cleaned away from the water and placed on ice.
- **Don't** transport natural water when keeping live aquatic bait. Drain bait container and replace it with spring or dechlorinated tap water.



# Boaters

## *ANS can damage boats and reduce recreational opportunities for boating!*

ANS pose a significant threat to Colorado's water supply for boating and recreation and can cause costly damage to watercraft. Before entering and when leaving any water body always:

### **Inspect**

Examine watercraft and remove any visible aquatic plants, animals and mud.

### **Clean**

Thoroughly clean all parts of watercraft, gear and equipment. 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.

### **Drain**

Completely drain every space or item that could hold water before leaving the water body.

### **Dry**

Allow sufficient time for boats and other equipment to dry completely before launching into other waters.

### **Dispose**

Properly dispose of unused live bait into trash containers, not into the water.

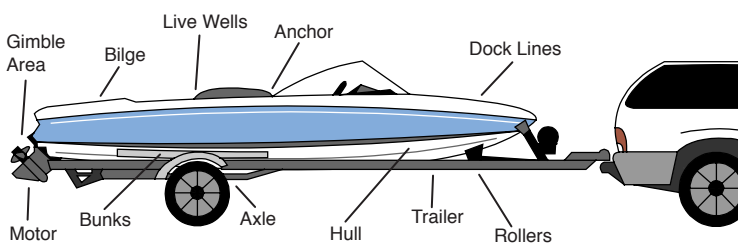
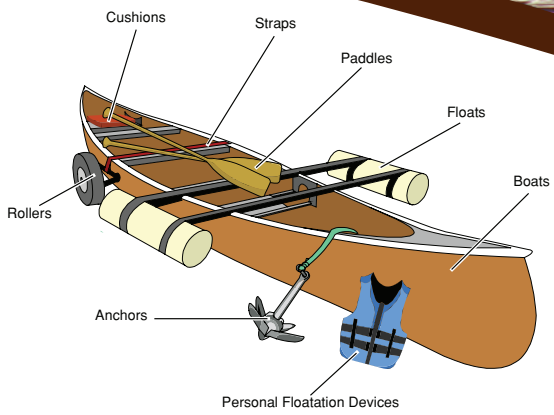
#### **NON-MOTORIZED WATERCRAFT**

*(Canoes, rafts, kayaks, rowboats, paddleboats, inflatables, sculls, and other non-motorized recreational watercraft)*

- **Clean** straps, gear, paddles, floats, ropes, anchors, dip nets, and trailer *before leaving the water body.*
- **Dry** everything completely between each use and before storing.
- **Wear** quick-dry footwear or bring a second pair of footwear with you when portaging between waterbodies.

#### **SAILORS**

- **Clean** centerboard, bilge board, wells, rudderpost, trailer and other equipment *before leaving the water body.*
- **Drain** water from boat, motor, bilge, ballast, bladders, wells, and portable bait containers *before leaving the water body.*



### MOTORIZED WATERCRAFT

- **Inspect** and **clean** motor or engine, including the gimble area; trailer, including axles, bunkers and rollers; anchors, dock lines, and equipment *before leaving the water body.*
- **Drain** live wells, bait containers, ballast and bilge tanks, and engine cooling systems.

### JET BOATS AND PERSONAL WATERCRAFT (PWCS)

- **Clean** hull, trailer, intake grate and steering nozzle, etc. *before leaving the water access.*
- **Run** engine 5–10 seconds to blow out excess water and vegetation from internal drive *before leaving the water body.*



# Gardeners &

*Exotic garden plants and pets can escape and invade native ecosystems!*

## **Plant Natives**

Landscape with plants native to your area. Native plants require less water, fertilizers, and pesticides and often provide advantages for wildlife such as food, cover or nesting sites for butterflies or birds.

## **Avoid Seed Mixes**

Stay away from seed mixtures, especially ones labeled “wildflowers.”

## **Be Careful**

Use caution when buying plants or seeds on the internet or by mail order—you may unknowingly contribute to the spread of invasive species from one part of the country to another. Plants native to one region can be invasive in another region.

## **Never Release**

Do not dispose of aquarium water, pond plants or animals into local water bodies. Some exotic plants and animals sold for water gardens and aquaria can be highly invasive.

## **Dispose**

Discard unwanted seeds, plants or garden clippings in the garbage, not in natural areas or parks.

## **Respond Aggressively**

Act quickly to rid your land of noxious weeds and other invasive species.

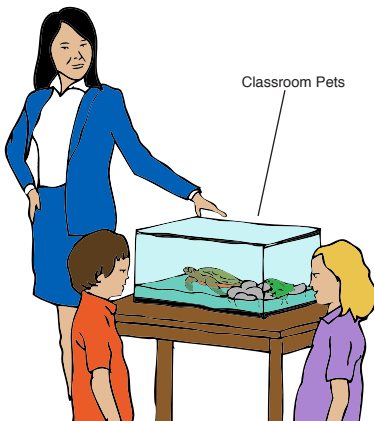
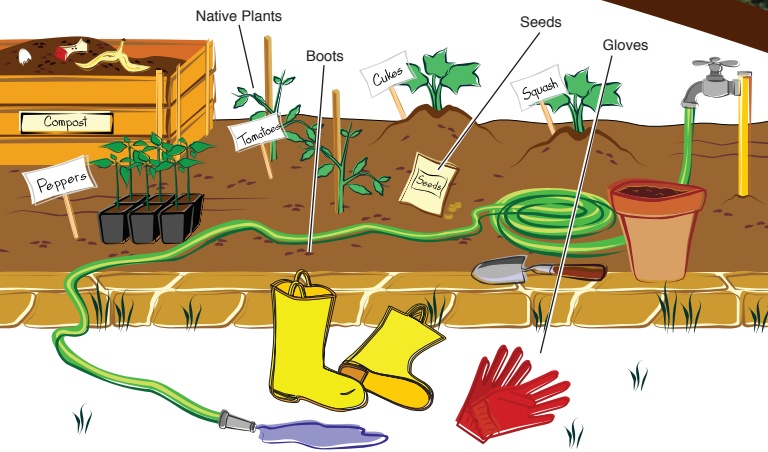
## **TEACHERS ARE PET OWNERS TOO!**

**Educate** yourself and children on the exotic animal you are interested in buying. Are you willing and able to keep the pet for its entire life?

**Buyer Beware!** Only buy from reputable dealers where non-native pets are properly labeled, legally imported, and not harboring foreign pests or diseases.



# x Pet Owners



**Don't Let it Loose!** Do not release aquarium fish, plants or animals of any kind into the wild. They may prey on native species or spread disease. If you no longer want your pet or classroom animal, return it to a local pet shop or give it to a shelter, hobbyist, school, nursing home or veterinarian, and throw all aquarium plants into the trash.

**Don't Move It!** Never take plants or animals from one habitat to another. By moving a species even from one stretch of river to another, you may have inadvertently introduced an invasive species, upset the balance of the ecosystem, and spread disease.

# Hunters & C

## ***Keep Colorado Native!***

Equipment and vehicles traveling over land and water can transport harmful invasive species into and around Colorado. These species are harmful ecologically to native species, and economically to our state. Cleaning your gear and equipment before moving locations can help prevent harmful introductions.

Noxious weeds have direct negative impact on big game and other wildlife habitat. In Montana, studies showed that dense spotted knapweed populations reduced available winter forage for elk by 50–90%. Elk use increased almost 4 times after spotted knapweed infestations were controlled. Protect big game habitat by preventing the spread of noxious weeds and other invasive species.

## **Come Clean**

Before leaving home, take time to inspect your vehicles and belongings. Remove plants, seeds, insects, animals, and mud from vehicles, tires, boots and equipment.

## **Use Weed-Free Hay**

Use weed-free hay when horseback riding or using hay for other purposes.

## **Use Local Firewood**

Buy firewood near where you intend to burn it. Don't transport firewood into Colorado from out of state. Burn all firewood before leaving the campsite.

## **Leave Clean**

Before leaving the parking lot or campsite, inspect your vehicle and belongings. Remove plants, seeds, insects, animals, and mud. Brush hunting dogs or pets before leaving.

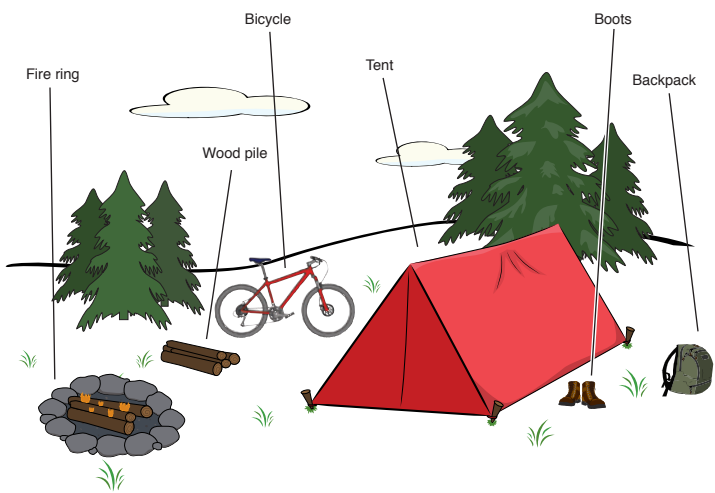
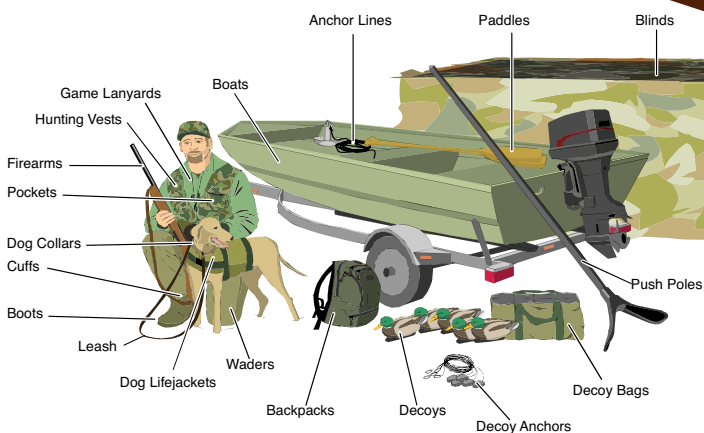
## **Clean, Drain, Dry Watercraft**

Watercraft, including motors and trailers, should be clean, fully drained and allowed time to completely dry in between each and every use.

### **INVASIVE FERAL HOGS**

Invasive feral hogs are not only illegal to possess live or import into Colorado, but also cause serious ecological and agricultural damage to land, reduce property

# Outdoor Enthusiasts



values, reproduce prolifically and are one of the most destructive invasive species in America. Never bring a prohibited animal into Colorado. Report feral hogs to CPW immediately.

# Scuba Di

## ***ANS can ruin opportunities for scuba diving!***

Divers can unintentionally spread freshwater aquatic nuisance species (ANS) such as the zebra or quagga mussel, New Zealand mudsnail, Eurasian watermilfoil, waterfleas or Asian clams from one body of water to another on their gear. Some ANS are invisible to the naked eye and can survive hours to weeks on wet scuba gear, or water inside the equipment. By adhering to the following guidelines, you can help prevent the spread of ANS when you scuba dive.

### **Inspect**

Clean off visible plants, animals and mud from wetsuit, dry suit, booties, mask, snorkel, fins, buoyancy compensator (BC), regulator, cylinder, weight belt, boat, motor, and trailer *before leaving the water body.*

### **Drain**

Empty water from BC, regulators, boots, gloves, snorkel, mask and any other equipment that may hold water *before leaving the water body.*

### **Rinse**

Thoroughly rinse the inside of your BC with hot water (at least 104° F, but not more than 120° F) or salted water (1/2 cup salt dissolved per one gallon water). Immediately follow a salted wash with a freshwater rinse. Lastly, submerge and wash your suit and other equipment using appropriate cleaning solutions.

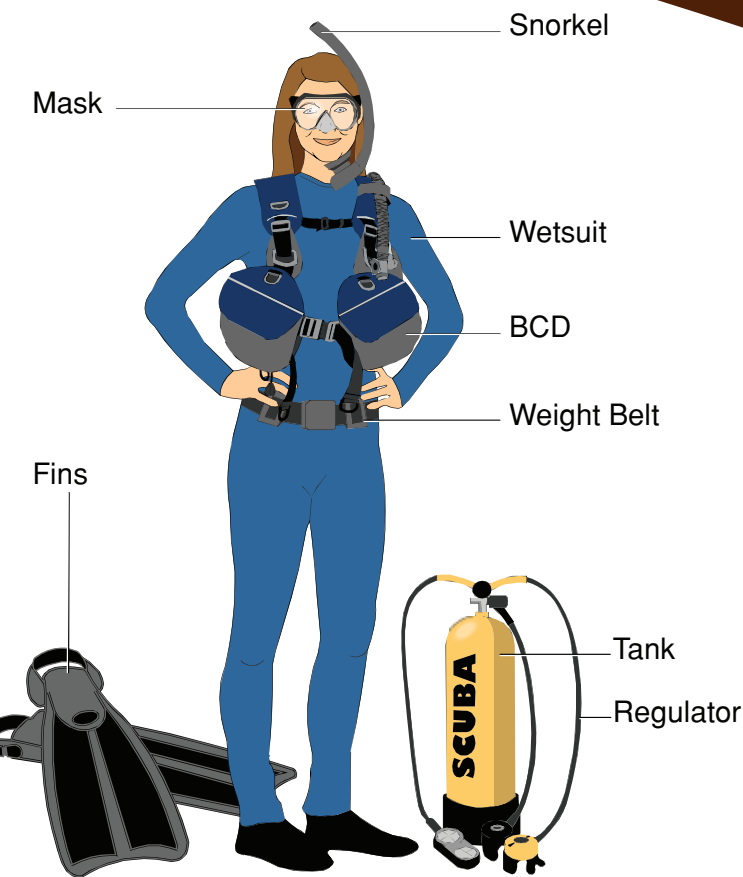
### **Dry**

Completely dry your suit and all equipment completely before diving in a different water.

#### **BE PART OF THE SOLUTION!**

Volunteer and recreational scuba divers help Colorado Parks and Wildlife each year by performing scientific scuba dives to monitor ANS and search for new invaders.

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- Learn how to properly identify aquatic nuisance species.
- Stay alert when diving in Colorado and document the specific location of any invasive species encountered.
- Report ANS sightings to Colorado Parks and Wildlife.
- Join the CPW volunteer scuba diving team.

# Professio

*Invasive species prevention and containment should be top priority for all natural resource professionals.*

Those working in the field can accidentally spread ANS and other invasive species from one location to another. Following proper procedures when moving from site to site, always moving downstream, for instance, will protect the environment. By following these simple steps, you can help protect your business investments, enhance work relationships, and preserve natural resources by preventing the spread of invasive species:

## **Go to Field Sites Clean**

Before leaving the shop or office, take time to inspect your vehicle and equipment, and remove plants, seeds, insects, animals, and mud.

## **Plan Ahead**

When moving from site to site, begin at a negative site (or the least infested site) and finish at the positive site (or most infested site). Between sites, use a brush or hand tool to remove accumulations of mud or plant debris, and disinfect gear. Use designated equipment for positive or infested sites.

## **Leave the Field Clean**

Before leaving the field site, inspect your vehicle, trailer, boots, nets and equipment. When available, use a power washer or air compressor to remove any plants, seeds, insects, animals, and mud. When these are not available, use a brush or other hand tool to knock off debris.

## **Aquatic Equipment and Gear—Clean, Drain, Dry**

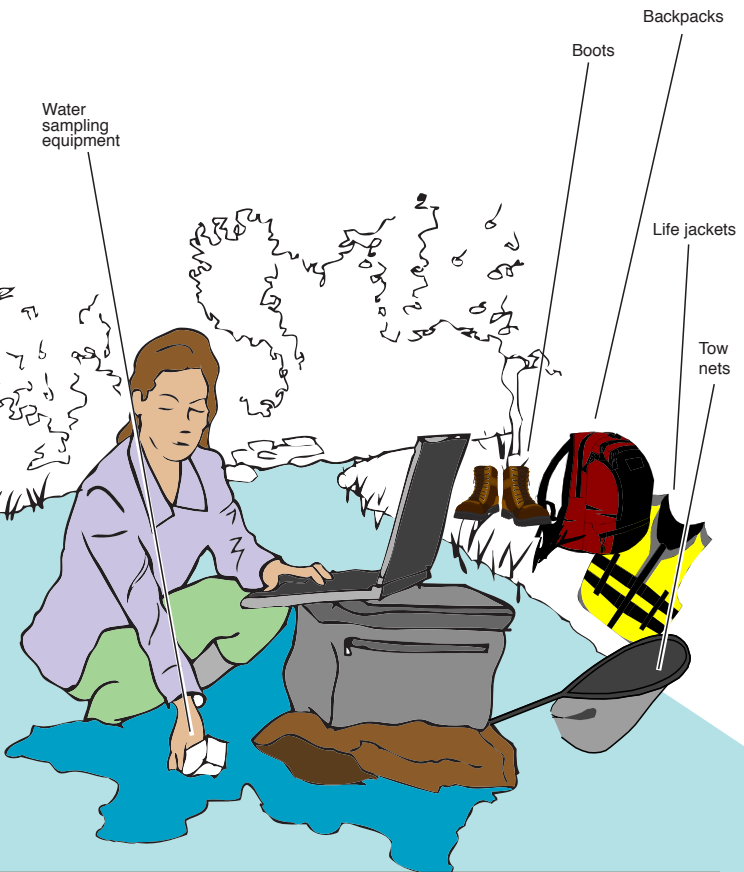
Aquatic professionals should follow state watercraft inspection and decontamination procedures to inspect and decontaminate boats, trailers and gear in between each and every launch. When working in areas without a hot water decontamination unit, aquatic professionals should choose one of the other four options for decontamination of gear, as listed on the Angler page in this brochure.

### **MINIMIZE INTRODUCTIONS DURING PROJECTS**

#### **Use Weed Free Materials**

When bringing soil, gravel, or other material onto a work site, check your sources to make sure they are weed free. Where the only available sources are not weed free, scrape off the top 6 inches and set aside. Use the newly exposed material for the project.

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## **Burn or Utilize Wood Waste**

Pallets, packing material, and containers made from untreated wood can harbor plant or insect invaders. Plan ahead to either completely burn or utilize all wood waste.

For more information on how you can stop the spread of harmful invasive species, please visit:



**STOP AQUATIC  
HITCHHIKERS!™**

[www.protectyourwaters.net](http://www.protectyourwaters.net)  
<http://cleandraindry.org>



[www.habitattitude.net](http://www.habitattitude.net)



**STOP INVASIVE SPECIES  
IN YOUR TRACKS.**

[PlayCleanGo.org](http://PlayCleanGo.org)



[www.dontmovefirewood.org](http://www.dontmovefirewood.org)

For more information or to report a suspected invasive species please contact Colorado Parks and Wildlife:

**Invasive Species Program**

6060 Broadway Denver CO 80216

(202) 291-7295 (303) 291-1192

[www.cpw.state.co.us](http://www.cpw.state.co.us)

