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## Invasive Aquatic Species—Boat, Trailer, and Equipment Cleaning Guidelines

This document describes methods for decontaminating boats, trailers, and equipment to prevent the spread of invasive species in freshwater.

### Introduction

Exotic species often travel from one water body to another by “hitching a ride” on a watercraft. To curb the spread of these invasive species, boaters in Texas are required by law to remove harmful plants and animals from boats and trailers before leaving the vicinity of a lake, river, or bay.

The most common aquatic invasive species are,

- giant salvinia (*Salvinia molesta*)
- zebra mussels (*Dreissena polymorpha*)
- Eurasian watermilfoil (*Myriophyllum spicatum*)
- hydrilla (*Hydrilla verticillata*)
- water hyacinth (*Eichhorina crassipes*)

However, the two of greatest concern are giant salvinia and zebra mussels.

**Giant salvinia**—this plant has been reported in over a dozen water bodies in Texas. Giant salvinia is currently one of the most dangerous invasive aquatic plants in Texas. It damages aquatic ecosystems by outgrowing and replacing native plants that provide food and habitat for native animals and water fowl. Infestations of giant salvinia can double in size in one week.

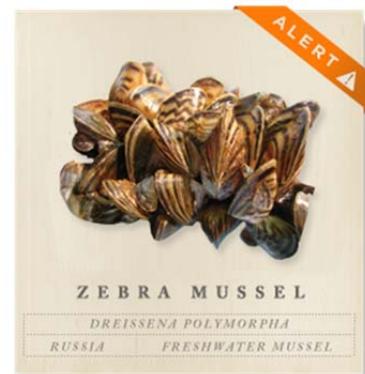
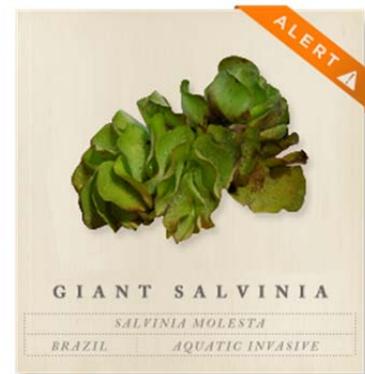
**Zebra mussel**—this freshwater invasive species was first confirmed in Lake Texoma in 2009. It is likely that they will spread throughout the Red and Trinity River Basins due to the transfer of water between basins. There is also the potential to move to other areas of Texas by transport on boats, boat trailers, live wells, bilges, and other equipment not properly cleaned when moved from one water body to another.

### Preventing the Spread of Invasive Species

Chapter 66 of the Parks and Wildlife Code (PWC) requires that “on leaving any public or private water body in Texas, a person shall immediately remove and lawfully dispose of any exotic plant



Figure 1. Invasive giant salvinia clinging to a boat trailer. TPWD photo.



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on the list of prohibited species that is clinging to or attached to a vessel, watercraft, trailer, motor vehicle, or other device used to transport or launch a vessel or watercraft.”

## ***New Rules for Zebra Mussels***

Chapter 66 of the PWC was expanded during the 83<sup>rd</sup> Texas Legislative Session to require boaters to empty all bait buckets, live wells, bilges, and any other containers or systems that could carry water before leaving any public lake or river. These steps reduce the transport of the microscopic zebra mussel larval stage called veligers.

## **References**

- TPWD Aquatic Invasive Species Regulations  
<[http://www.tpwd.state.tx.us/regulations/fish\\_hunt/boaters.phtml#invasive](http://www.tpwd.state.tx.us/regulations/fish_hunt/boaters.phtml#invasive)>
- Chapter 66 of the Parks and Wildlife Code  
<<http://www.statutes.legis.state.tx.us/Docs/PW/htm/PW.66.htm#66.0072>>
- TPWD *Guide to Identification of Harmful and Potentially Harmful Fishes, Shellfishes and Aquatic Plants Prohibited in Texas* (Special Publication No. PWD BK T3200-376, 11/99)  
<<http://www.tpwd.state.tx.us/publications/landwater/water/#exotic>>
- Invasive Species in Texas  
<[www.texasinvasives.org](http://www.texasinvasives.org)>
- *Don't Let Invasives Take Over Texas Lakes by TPWD*; video on how to clean boats  
<[http://www.youtube.com/watch?feature=player\\_detailpage&v=6qgmPVASHHI](http://www.youtube.com/watch?feature=player_detailpage&v=6qgmPVASHHI)>

## **General Cleaning Methods**

These general cleaning methods should be a common practice after leaving all water bodies.

- Before leaving any water body, examine all equipment, boats, trailers, boots, waders, buckets, etc. and remove any visible plants, fish, or animals. Remove mud and dirt and even the smallest plant fragments.
- Drain all water from your boat, including motor, bilge, live wells, and buckets before leaving a water body.

*Note:* This does not apply to environmental samples collected for laboratory analysis.

## ***Zebra Mussel Decontamination Methods***

Zebra mussels can attach to any hard surface and clog water intakes. They foul boat hulls and damage engines, as well as boat docks, ramps, and navigational buoys. They negatively impact fish and native mussel populations as well as making beaches unusable. Currently, in Texas the main concern is the transport of veligers.

Due to the ease with which microscopic zebra mussel veligers are transported, it may take several years to detect an infestation. For this reason boats, equipment, and gear should be cleaned after use if a water body is on the Texas list of zebra mussel infected water bodies.

If a water body is on the Texas list of zebra mussel infected water bodies additional cleaning is required.

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- Drain all water from your boat, including motor, bilge, live wells, and buckets before leaving a water body.
- Dry or wash your boat, trailer, and other equipment before entering another water body. All decontamination is done away from the boat ramp. Use one of the following methods.
  - Dry boat and trailer for at least one week, opening all compartments and areas where there may be moisture. If the concern is for veligers only then drying for one to three days, especially in the heat of the summer, may be sufficient. During cooler periods dry for three to five days.

Or

- Wash boat, motor, and trailer with high-pressure, hot (140°F) water for several minutes. A temperature of 140°F is preferred. Water at commercial car washes is rarely 140°F. If using a commercial car wash increase the contact time. Dry for as long as possible.



## Equipment

The following steps detail equipment decontamination procedures.

Disinfection must be done prior to moving boats, equipment and other gear from a listed water body.

The following are some helpful hints to consider when planning your work.

- Organize sampling so work in infected water bodies is always done last.
- If a high percentage of your work is done in waters with invasive species, consider dedicating certain gear to be used only in those waters.
- Depending on the type of work you are doing, it may be possible to work with local entities and use their boats to collect samples. That way only your sampling equipment needs to be disinfected.
- Keep soap and rinse water out of surface waters.

### ***Boats, Trailers, and Live Wells***

Remove organic material from boats, trailers, and live wells. Dispose of any invasive plant material. Drain water from live wells, bilges and pumps prior to leaving the water body.

Away from the water body (the boat storage location or self-service car wash) clean the ***outside*** and ***inside*** of the boat, trailer, live wells, bilges, and pumps with hot soapy water. Rinse the soap from the boat, trailer, bilges, live well, and pumps. Allow to dry for as long as possible. If the boat is not going to be used for at least a week, the boat can be left to air dry after water is drained from the boat and associated equipment prior to leaving the water body.

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Consider replacing carpeted bunks and runners on existing boat trailers with poly, plastic or wooden bunks as soon as practical. Future boat trailers should be purchased with poly/plastic/ wooden bunks and runners.

## ***Field Equipment***

Remove any organic material from sampling gear. Clean with soap and warm water. Rinse with clean water. Alternatively, gear may be dried thoroughly for five days.

Avoid using waders with felt soled boots.

Dissolved oxygen probes and other sensitive electronic sampling gear should only be rinsed with clean water.

## ***Reporting Giant Salvinia and Zebra Mussel Observations***

Report suspected occurrences of giant salvinia and zebra mussels to TPWD. This can be done by filling out the online report form at <<http://www.texasinvasives.org/action/>>. Please record latitude/longitude (if able) or accurate description of location(s) in your field notes.