

## Decontamination of Field Equipment

*How can we prevent the spread of aquatic invasive species?*

Most of Michigan's rivers, streams, ponds, lakes, shorelines and wetlands provide hospitable habitat for native and invasive species alike. Aquatic invasive species are costly to control once they're in a waterbody and have established reproducing populations. Invasive species disrupt food webs, foul infrastructure and recreational equipment, spoil tourism and recreational experiences, devalue waterfront property, create public health hazards, and wreak havoc on water-based businesses.

**The best defense is good preventive offense!**

**What other techniques can be used?**

### Clean, Drain and Dry!

Always take these measures **before** moving to a new body of water:

- **Clean** off any visible aquatic plants, animals, and mud from all equipment before leaving water access
- **Drain** boat motor, bilge, livewell, and other water containing devices before leaving water access
- **Dry** everything for five days or more or wipe with a towel before reuse

For more information, visit: [www.michigan.gov/invasives](http://www.michigan.gov/invasives)

Method	Preparation / Contact Time	Applications	Other Considerations
<b>Hot water *</b>	≥60°C (140°F) / 10 seconds	<ul style="list-style-type: none"> <li>• Surfaces of watercraft and trailers</li> <li>• Motor flushing</li> <li>• Sampling nets and equipment</li> <li>• Wet suits, masks, snorkels, and fins</li> <li>• Waders/boots</li> <li>• Clothing</li> </ul>	Most self-serve car washes do not meet the temperature requirement. To verify that the hot water spray is effectively heating the contact area, a non-contact infrared thermometer can be used. Water loses approximately 15-20 degrees F per foot of distance when sprayed from a power nozzle; an increase in initial temperature can be used to account for this heat loss to the point of contact.
<b>Steam cleaning*</b>	Live steam from a steamer / 10 seconds	<ul style="list-style-type: none"> <li>• Surfaces of watercraft and trailers</li> <li>• Motor flushing</li> <li>• Sampling nets and equipment</li> <li>• Clothing</li> </ul>	Steam can melt bonds and adhesives. Inflatable PFDs, technical fabrics, and wader/boot seams can also be melted by steam. Quick strokes instead of lingering in one place with a steam cleaner will decrease the likelihood of causing damage to equipment. Read all manufacturer's guidelines to determine if steam will harm equipment.
<b>Virkon Aquatic*</b>	2% solution / 20 minutes	<ul style="list-style-type: none"> <li>• Sampling nets and equipment</li> <li>• Wet suits, masks, snorkels, and fins</li> <li>• Waders/boots</li> </ul>	<b>Virkon Aquatic is labeled for use only as a bactericide and virucide.</b> Recent studies have shown that a bath immersion of 20 grams per liter (g/L) Virkon Aquatic is effective as a disinfectant method for quagga mussels (adults and veligers).
<b>Bleach/ Chlorine*</b>	0.5%-2% bleach solution (1/2 cup of bleach for 5 gallons of water) / 10 minutes	<ul style="list-style-type: none"> <li>• Sampling nets and equipment</li> <li>• Wet suits, masks, snorkels, and fins</li> <li>• Waders/boots</li> </ul>	Bleach is corrosive, use with caution. Read and follow all product labels, equipment manuals and any associated documents.

**\*Appropriate Personal Protective Equipment Must Be Worn to Avoid Personal Injury**