

Ornamental Water Gardens

Biosecurity is the most essential element of any outdoor feature. Below are some basic guidelines to help protect the natural environment and prevent invasive species from spreading

- Develop a plan for emergencies that could flood or damage your outdoor structure resulting in plants and animals to escape to natural waterways
- Ensure through the use of berms or swales that it avoids potential discharge to nearby water bodies and wetlands, even during extreme rain events, which may be protected by local, state or federal rules
 - In some cases, berms and swales may not be sufficient, in which a more solid barrier such as stone or man-made materials to help prevent overflow
- Refrain from establishing any ponds in, connected to, or in the close vicinity of natural or public water bodies. Areas likely to be flooded should be avoided when constructing ponds
- Determine which species of aquatic plants and animals in the regions you serve are considered invasive species, or potentially invasive species
 - Only select species that will remain in the water feature and have a low chance of accidental escape
- Ensure that the plants and animals, as well as the containers and any substrates, are free of “hitchhikers” – i.e., other plants, animals, or soil
- When disposing containers and other packing materials, ensure they have been disinfected prior to disposal
- When cleaning your water feature, ensure that all water and organic materials have been disposed of properly
 - Water being disposed of should be run through a sanitization unit
 - Never dispose of pond water into a natural water way
- Never release any unwanted plant or animal into the natural environment

Moss ball disposal

- Dispose of all moss balls using **ONE** of the following methods, ensuring that the disposal method you choose is in compliance with state laws and animal welfare regulations:

Use one of the following methods below

A. Place the moss ball into a sealable plastic bag and freeze for at least 24 hours,

- B. Place the moss ball in boiling water for at least 1 full minute,
- C. Submerge the moss ball in chlorine bleach, diluted to one cup of bleach per gallon of water
- D. Submerge the moss ball in undiluted white vinegar for 20 minutes.

- Once the disposal method selected is complete, place the moss ball and any of its packaging in a sealed plastic bag and dispose in the trash
- If vinegar, boiling water, or bleach was chosen, the liquid can be disposed down a household drain—never down a storm drain where it could enter and damage local waterways

To disinfect your plants and your water garden – If zebra mussels are detected take the following steps to treat your aquatic system.

- Remove plants and inspect them for zebra mussels
- Utilizing one of your clean large trashcans or similar vessel, fill it approximately ¼ full with filtered water or de-chlorinated water
 - This bucket will be used to house the plants for 48hrs.
- Fill a 5 gallon bucket approximately ¾ full with filtered or de-chlorinated water and mix in 4 cups of freshwater aquarium salt
- Stir until the salt is fully dissolved.
- Remove the aquatic plants in small batches. While holding the plants upside down by the base, and dip them in to the bucket of saltwater for 15-20 seconds, **remember to hold the roots above the water line**
- After dipping the plants, place them into the clean water trashcan, where they will remain for the next 48 hours.
- Remove any animals, pre-filter pads/socks and carbon from your aquatic system. Add 1 cup of marine aquarium salt per gallon of water and create some agitation while pouring in the salt to help it dissolve.
- Allow the system to operate with the saltwater for 24hrs.
- After 24hrs turn off the system pump and drain the system of all water.
- Refill with filtered water and replace all filter media.
- Turn on system pump allowing the system to run for 24hrs.
- After 24hrs of operation utilize a refractometer to test the water, ensuring there is no residual salt. If the specific gravity is higher than 1.003, drain 50% of the water garden's water and refill with filtered water
- If no salt is detected, reintroduce the plants and add plant food
- Test your water garden's water and temperature before adding any livestock
 - As a precaution, test the water frequently for the follow 2-3 weeks to ensure the habitat is stable
 - Do not reintroduce livestock until the habitat is stable