

Never release
**AQUATIC PLANTS
 OR ANIMALS**
 INTO
WATERWAYS!

MORE WAYS YOU CAN HELP

- Build your water garden away from waterways and flood-prone areas.
- Rinse purchases to remove unwanted eggs, animals, seeds, plants or plant parts.
- Dump rinse water on dry land.
- Weed out uninvited plants—they are likely invasive.
- Dispose of debris and unwanted aquatic plants and packaging materials in a sealed plastic bag in the trash. If possible, freeze the bag before disposal.
- Find new homes for unwanted pets, such as schools, retailers or other hobbyists.
- Contact a veterinarian or pet retailer for guidance on humane disposal of animals.

**NEVER RELEASE AQUATIC PLANTS
 OR ANIMALS INTO WATERWAYS!**

For more information on aquatic invaders in the marketplace (AIM) or to learn about species regulation in your state, visit:

www.TakeAIM.org



References:

Oleson, Diane, J. Pocket Guide to Mid-Atlantic Water Garden Species: Featuring Invasive Species and Their Native Alternatives, 2014.

*<http://www.fishchannel.com/fish-experts/wiegert/snail-wars.aspx>

Produced by Pennsylvania Sea Grant & the Great Lakes Sea Grant Network, Prairie Research Institute in partnership with Loyola University Chicago, Environmental Change Initiative at the University of Notre Dame, The Nature Conservancy, and the PIJAC, U.S.FWS and NOAA HabitatTitude™ campaign (www.habitattitude.net). Funding for this program was provided by the Great Lakes Restoration Initiative.


WHAT'S
In Your
WATER
GARDEN?

**PROTECT OUR NATURAL AREAS
 PURCHASE ONLY NON-INVADERS**

FISH, SNAILS, CRAYFISH AND TURTLES



MANY ANIMALS USED IN WATER GARDENS ARE CONSIDERED

invasive.

An invasive species is a plant or animal that is not native to a given watershed, and causes ecological or economic damage, or harm to human health. They do this by reducing the amount of food available to fish and wildlife, introducing diseases, reducing wild or sport fish catch, and many other things.

When trying to choose animals that are not invasive, it is important that you know the scientific name of the animal you want to add to your water garden. Many animals such as crayfish or snails are sold by common names, which can refer to both invasive and non-invasive species. Therefore, knowing the scientific names of the organisms available for purchase will help you avoid buying known invaders.

Be sure to check with your local natural resource manager or reputable local retailer about your state's laws regarding the possession and transport of fish, snails, crayfish and turtles as they vary by state.

HERE ARE SOME PROBLEMATIC SPECIES AND WAYS TO PREVENT THEIR SPREAD

FISH



(Rosy-red strain of fathead minnows)

When koi (*Cyprinus carpio*) are introduced into the wild, they can decrease water clarity by resuspending lake and river sediments while feeding. This resuspension in turn releases nutrients, which may lead to algal blooms. A close relative, goldfish (*Carassius auratus*) can compete with native species for habitat and food. Non-invasive alternatives for these fish are the golden shiner (*Notemigonus crysoleucas*), the rosy-red strain of fathead minnows (*Pimephales promelas*), and most tropical fishes. Only use tropical fish in outdoor ponds during warmer parts of summer and over winter them indoors. Visit TakeAIM.org for more non-invasive alternatives.

SNAILS



The Japanese mystery snail (*Cipangopaludina japonica*) and Chinese mystery snail (*Cipangopaludina chinensis*), sometimes called the Japanese trap door snail, can serve as hosts to parasites, some which may affect humans. They can also compete with native species. While there are no known native snails commonly sold in the Great Lakes region, there are snails that are considered non-invaders as they are likely to die in the winter or require brackish water to reproduce and are therefore less risky to use. Keep tropical species indoors during winter months. Visit TakeAIM.org for a list of specific species.

Mollusks are often used to reduce the amount of algae in a pond. This can be avoided by addressing the root causes of the algal growth (such as too many fish, too much fish food, not enough pond plants), rather than purchasing snails to clean the algae.*

CRAYFISH/CRAWFISH/CRAWDADS



Crayfish eat the aquatic plants and animals that gardeners want to grow, such as lily pads, irises, tadpoles, frogs, and fish. Therefore, most water gardeners do not use crayfish. However, if a water gardener does choose to purchase crayfish for their water garden, installing a smooth-surfaced 3-4 foot garden wall can keep the crayfish contained. If crayfish escape into the wild, they can have significant negative impacts on native crayfish populations through competition for habitat and food. These impacts can be particularly devastating to native crayfish because they are some of the most threatened species in the United States. **Please check your state regulations - it is illegal to possess crayfish in some Great Lakes states.**

TURTLES



(Red-eared slider)

Many turtles are herbivorous or omnivorous, and will eat plants and other organisms the gardener wants to grow. Water gardeners who want to keep turtles should talk with a professional contractor or pond care provider to see if their set up has large enough swimming areas and plenty of basking spots. Because turtles are able to move freely across land and are prone to escape, only regionally native species should be considered for water gardens. For example, while native to and okay to use in parts of Illinois, Indiana, and Ohio, the red-eared slider is invasive in other parts of the Great Lakes competing with native turtles for habitat and food. Therefore, it should not be used outside its native range. Examples of other turtles that are native to parts of the Great Lakes Basin includes false map turtle (*Graptemys pseudogeographica*), Ouchita map turtle (*Graptemys ouachitensis*), and Sabine map turtle (*Graptemys ouachitensis sabinensis*).