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By expanding your efforts.

Inform others about the problems of invasive aquatic plants and the methods to prevent their spread.

Report sightings of invasive plants in natural waterways to your local or state agricultural agent, extension office, or natural resource management agency.

Volunteer to help remove invasive plants from vulnerable natural areas. Call your state natural resource agency about volunteer opportunities.

Produced by Illinois-Indiana Sea Grant to part of a national invasive aquatic plant outreach initiative. This initiative is a cooperative effort of the Connecticut, Illinois-Indiana, Minnesota and North Carolina Sea Grant College Programs with the Center for Aquatic and Invasive Plants at The University of Florida.

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For additional copies of this fact sheet, contact Illinois-Indiana Sea Grant at 217-333-0948 or goettel@uiuc.edu.

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The Illinois Natural History Survey is a division of the Illinois Department of Natural Resources, Brent Manning, Director.

Design and layout: Paul Edwards, Midnight Graphics
Invasive plants are becoming a widespread problem in aquatic and wetland habitats throughout North America. Once introduced, these noxious or harmful plants can displace native plants, which are important sources of food and shelter for wildlife. Ecological processes, such as oxygen production, may also change because invasive plants can affect water chemistry and flow. Unrestricted invasions can block drainage pipes, impede navigation, and hinder commercial and recreational fishing. For these reasons, state and federal agencies are spending millions of dollars each year to control the spread of invasive plants and reverse their impacts in affected habitats.

In many cases, invasive plants are exotic or non-native. Species native to North America, however, may also become invasive when transported to another region. Regardless of origin, invasive aquatic plants (and invasive fish and invertebrates!) can be accidentally spread by plant enthusiasts such as water gardeners and aquarium hobbyists. As a plant enthusiast, you can help prevent the spread of invasive species by acting on the information presented in this brochure.

**Characteristics of Invasives**

Most invasive species have certain traits that make them successful in habitats that they invade. Invasive aquatic and wetland plants generally:

- tolerate a wide range of environmental conditions including soil and water acidity, water and air temperature, water salinity, water level fluctuations, and dissolved oxygen;
- reproduce early, often, in large numbers, and in multiple ways (e.g., by fragmentation, seeds, and rhizomes);
- grow rapidly;
- resist management control efforts.

**Vectors of Spread**

**Mother Nature**

Invasive plants are generally spread to natural waterways accidentally. These unintentional introductions are more likely if a water garden or a retention basin containing invasive plants is built near a natural body of water. The natural waterway may flood into the artificial pond and carry away the contents, or the artificial pond may flood and have its contents swept away into the natural waterway. In addition, seeds and plant fragments of invasive plants can be spread by wind or by wildlife traveling between artificial and natural waterways.

**Plant Enthusiasts**

Water gardeners and aquarium hobbyists can unintentionally spread potentially harmful plants when they 1) share specimens among friends, neighbors, and gardening and aquarium clubs, or 2) dispose of aquatic plants by releasing them into a natural waterway. Invasive plants are also spread when gardeners moving to warmer climates take plants with them that would otherwise have been controlled in colder climates (i.e., killed during winter). Instead, these plants thrive and become invasive in their new warmer habitat. Some plant enthusiasts even sneak novel plants into the country illegally. By introducing these exotic plants, they run the risk of causing great harm. (Note: Any plants that are brought into the country should be declared with quarantine officials.)

**Hydriilla: An Example of a Good Plant Gone Bad**

Hydriilla (Hydrilla verticillata), also known as water thyme, is a well-known aquatic plant native to parts of Asia and Africa. It was first found growing wild in Florida in 1960. Since then, it has spread as far north as Connecticut and as far west as California. Hydriilla tolerates a wide range of nutrient and pH levels, and persists in low sunlight. It also can reproduce through fragmentation, turions (buds that form in leaf axils), and subterranean turions (commonly called “tubers”). These plant parts can take root in the sediments, and provide the beginnings for a whole new plant. As the plant grows toward the surface, it branches more frequently forming dense mats. These mats create inhospitable habitat for other plants and animals, and hinder activities such as boating and swimming. They can also clog water intake pipes and restrict water flow in irrigation canals. Methods to control hydriilla, including mechanical harvesting and herbicides, are costly. Florida alone spends millions annually in hydriilla management.

**Retail Outlets**

Retail outlets may also contribute to the spread of invasive species. These outlets can sell invasive plants unless the state or federal governments specifically prohibit their sale. In some cases, even prohibited plants may end up being sold if retailers are 1) unaware of the restrictions, or 2) unfamiliar with a plant’s scientific name and only know it by a non-invasive alias. Retailers may also sell plants (or use packing materials!) with “hitch-hiking” plant fragments or invertebrates that may themselves be invasive.

**Most Wanted List**

“Outlaw” invasive aquatic and wetland plants that pose the greatest ecological and economic threat.

- Botiumus umbellatus (flowering rush)
- Cabomba caroliniana (cabomba, Carolina fanwort)
- Carolina water shamrock (Carolina water shamrock)
- Cyperus tawfikia (cypaeus)
- Egeria densa (leaky elodea, Brazilian elodea, Brazilian waterweed)
- Eichhornia crassipes (water hyacinth, common water hyacinth)
- Hydrocharis morsus-ranae (common frogbit)
- Hygrophila polysperma (pistia, Indian swampweed)
- Mimana verticillata (water hyacinth, common water hyacinth)
- Pistia stratiotes (water spinach)
- Salvinia molesta (giant salvinia, aquatic watermoss, kariba weed)
- Spirodea polyrhiza (yellow floating heart)
- Trapa natans (teatree, bottlebrush tree)
- Trapa orientals (orientals)
- Utricularia intermedia (spenny)
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**You Can Help Prevent the Spread of Invasive Plants**

Before building & choosing plants for your water garden.

- When planning your water garden, choose a site that is isolated from any potential flooding situations (i.e., a liminal area adjacent to a river is likely to flood). Remember, use of invasive plants in a water garden that is near a lake, river, stream, or even a retention basin could increase the risk for spread of those species.

- Familiarize yourself with invasive plants of regional- and national concern.

- Most Wanted list and The Federal Noxious Weed (http://plants.usda.gov/plants/ cgi_bin/topics.cgi?earl=noxious.cgi) lists are good starting points. The web sites listed on the back and your state natural resource agency are also valuable information resources.

- Consider using regionally native or non-invasive exotic plants.

- There are many non-invasive plants that can be used in place of an invasive species to achieve the same effect—whether balancing pH, providing vertical interest, or adding a particular color.

- Use invasive plants only outside of their hardness zone.

- These plants whose temperature and precipitation requirements are far outside the limits of your agricultural zone are less likely to become invasive if they escape to natural waterways.
Invasive Plants are becoming a widespread problem in aquatic and wetland habitats throughout North America. Once introduced, these noxious or harmful plants can displace native plants, which are important sources of food and shelter for wildlife. Ecological processes, such as oxygen production, may also change because invasive plants can affect water chemistry and flow. Unrestricted invasions can block drainage pipes, impede navigation, and hinder commercial and recreational fishing. For these reasons, state and federal agencies are spending millions of dollars each year to control the spread of invasive plants and reverse their impacts in affected habitats.

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Hydrilla

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MOST WANTED LIST

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Cyperus taxifolius (caulera)
Egeria densa (leaky elodea, Brazilian elodea, Brazilian waterweed)
Elodea canadensis (water hyacinth, common water hyacinth)
Hippuris vulgaris (Hydrilla verticillata, hydrilla, water thyme)
Hydrilla verticillata (hydrilla, water thyme)
Hydrocharis morsus-ranae (common frogbit)
Hygrophila polypetala (Hygrophila, Indian swampweed, Mirrorweed, hygros)
Ipomoea aquaticas (water spinach)
Iris pseudacorus (pale yellow iris)
Lagarosiphon major (African elodea, oxygen weed)
Limnophila sessiliflora (ambula, limnophila, Asian marshweed)
Lythrum salicaria (purple loosestrife, spiked loosestrife)
Melaleuca quinquenervia (tea tree, melaleuca, paperbark tea tree, bottlebrush tree)
Myriophyllum aquaticum (parrot feather, Brazilian parrot’s feather)
Myriophyllum spicatum ( Eurasian watermilfoil)
Nymphaea peltata (yellow floating heart)
Nuphar variegata (water lettuce)
Potamogeton crispus (curly pondweed, curled leaf pondweed)
Salvinia molesta (giant salvinia, aquarium water moss, fanlita weed)
Stargrass (salt marsh cordgrass, smooth cordgrass)
Trapa natans (water chestnut)

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