Keeping Aquatic Plants In Their Place: Common Sense Tips to Protect Lakes and Rivers

By Holly Crosson

The invasive aquatic weed, Eurasian watermilfoil has spread throughout the Tahoe Keys Marina since its introduction to Lake Tahoe in the in the late 1970s. Three harvesters like the one pictured here operate daily during the summer months to unclog passageways for boating.
Photo courtesy of Lars W.J. Anderson

A Hot Market for Cool Water Gardens

Water gardening is one of the fastest growing segments of the popular gardening hobby in the United States. A 2003 survey conducted by the National Gardening Association found that 16 million American households have water gardens, up from 4 million households just five years ago. Water gardening retail sales reached $1.56 billion in the United States in 2003. In response to this trend, many nurseries, hardware and pet stores, and home and garden centers now sell aquatic plants for home aquascaping projects. Specialty magazines, how-to books, websites, and landscape architects, designers, and contractors across the country all cater to the expanding water gardening market.

The South American native aquatic plant Egeria densa has spread to hundreds of large and small sloughs in the Sacramento-San Joaquin Delta in California. It now occupies over 7,000 acres in the Sacramento-San Joaquin delta and is displacing native aquatic plants and reducing fish habitat. Photo courtesy of Lars W.J. Anderson

An Oasis Right in Your Own Backyard

There are many compelling reasons for a homeowner to desire a backyard pond or water garden. Even the smallest water feature can provide a peaceful respite from a hectic world. The sound of water can evoke a variety of moods - from tranquil, soothing and contemplative, to dramatic and energetic. Aquascapes are extremely versatile since they can be large or small, be created indoors or outdoors, and have a formal or informal style. If you lean towards creating a more natural water garden with aquatic plants as a part of the design, there are added benefits. Aquatic plants are valuable because they provide habitat and food for fish and wildlife, improve water clarity, prevent erosion and stabilize sediments (in the case of a backyard pond without a liner), and can provide an aesthetically pleasing focal point for your home landscape. A well-designed and installed water garden can add economic value to your home and years of enjoyment for family and friends.

Trouble in Paradise

As the water garden industry expands, with it comes an increased risk of introduction of invasive aquatic plants into local waterways. Many of the aquatic plants commonly available online and through local nurseries and garden centers are some of the worst culprits with respect to invasiveness. Examples include water hyacinth (Eichhornia crassipes), Brazilian waterweed (Egeria densa), parrot feather (Myriophyllum aquaticum) and giant salvinia (Salvinia molesta). These plants are frequently sold to consumers without any warning that they are not native to North America and can cause significant environmental and economic damage if they are released or escape into a wetland, lake, river, stream, reservoir, or irrigation canal. Once established, these aggressive newcomers quickly overtake the water body. Removal can become extremely difficult and costly.

The photo shows a display at the 2004 San Francisco Flower Show at the Cow Palace convention center. Research has shown that aquatic plants are often mislabeled and do not include information cautioning the consumer on plants' potential invasiveness and environmental harm. Photo courtesy of Holly Crosson

What Makes a Water Weed?

A weed is often defined as a plant out of place. While most ornamental plants do not cause problems, a small percentage do show characteristics in their new environment that make them a potential threat to the ecosystems they invade. Invasive plants tolerate a wide range of environmental conditions, which make them highly adaptable. Many reproduce early, often, in large numbers, and in multiple ways to give them a competitive edge against their native neighbors. They grow and spread very rapidly and are typically resistant to management efforts. The results can have dire consequences, especially in aquatic ecosystems. Dense mats of invasive aquatic plants degrade water quality; clog waterways used for irrigation, flood control and fire protection; out compete native aquatic plants including threatened and endangered species; negatively affect the growth and distribution of fish; promote an increase in mosquito populations; and render recreational activities such as swimming, boating and fishing difficult or nearly impossible. In California, more than $45 million have been spent trying to manage water hyacinth (Eichhornia crassipes) and Brazilian waterweed (Egeria densa) in the Sacramento-San Joaquin Delta alone over the last fifteen years. Nationwide, losses from invasive aquatic plants, many of which are the same species popular in the water gardening trade, total $110 million annually.

Depending on the conditions in your area, these are some of the plant species that could become invasive in your local waterway if they escaped from your pond or were intentionally released (the list is not comprehensive).

- *Butomus umbellatus* - flowering rush
- *Cabomba caroliniana* - fanwort
- *Egeria densa* - Brazilian elodea
- *Eichhornia crassipes* - water hyacinth

- *Hydrilla verticillata* - hydrilla
- *Hydrocharis morsus-ranae* - European frog-bit
- *Hygrophila polysperma* - Indian swampweed
- *Iris pseudacorus* - yellow flag iris
- *Lagarosiphon major* - African elodea
- *Limnophila sessiliflora* - ambulia
- *Lythrum salicaria* - purple loosestrife
- *Myriophyllum aquaticum* - parrot feather
- *Myriophyllum spicatum* - Eurasian watermilfoil
- *Nymphoides peltata* - yellow floating heart
- *Pistia stratiotes* - water lettuce
- *Potamogeton crispus* - curly leaf pondweed
- *Salvinia molesta* - giant salvinia
- *Sparganium erectum* - bur reed
- *Trapa natans* - water chestnut

The image is of water hyacinth. The species is listed as a noxious weed in Alabama, Arizona, California, Florida, South Carolina and Texas. Photo courtesy of Holly Crosson

What You Can Do

The water-gardening public, and aquatic horticulture and landscape professionals need access to accurate information about which species tend to be invasive, how to identify them, how to contain and/or dispose of the plants properly, how to inspect shipments for contaminants, and what alternative, non-invasive plant choices they have. Pond and water garden owners, and landscape architects, designers, contractors, and nursery professionals, can play a significant role in preventing the introduction and spread of invasive aquatic plants.

Ten Easy Tips for Water Gardeners and Pond Owners

- Do not release aquatic plants or animals near or into any water body
- Build your water garden away from natural waterways

- Site your pond away from areas that flood into nearby lakes, rivers and wetlands
- Learn which aquatic and wetland plants are likely to be invasive in your area
- Request non-invasive alternatives from your local nursery or garden center
- Carefully inspect purchases for “hitchhikers” before putting them into your pond
- Donate unwanted aquatic plants or animals to a local school, park or garden club
- Give or trade unwanted aquatic plants and animals to another water gardener
- Contact your local nursery or garden center for possible “returns”
- Contact your local retailer or veterinarian on guidance for humane disposal of aquatic animals that are no longer wanted

Seven Easy Tips For Nursery and Landscape Professionals

- Learn which aquatic species are regionally and federally regulated
- Abide by all laws governing aquatic species importation, sale, etc.
- Verify the scientific name of what you purchase from wholesalers
- Inspect shipments to make sure they are not contaminated with unwanted plants/animals
- Educate your staff and customers about aquatic invasive species
- Promote the “Don't Release” message at your place of business
- Provide a selection of non-invasive and native plants for your customers

The following websites provide more information about the problems and solutions associated with invasive aquatic plants.

* habitattitude.net

* aquat1.ifas.ufl.edu

* invasivespecies.gov

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