Water Gardening:

Plants for the Water Garden

K-STATE Kansas State University Research and Extension

As with any garden, plants are the focal point and reason for the water garden. Among the benefits of water gardening are attracting wildlife, the sound of moving water and the beauty. The wide variety of water plants lend color, artistic grace, and interest to the pond.

An important aspect of water plants is their contribution to the pond's ecosystem. Plants compete for nutrients that would otherwise feed algae. Plants shade the pond, which reduces water temperature while providing spawning areas for fish and frogs. Other wildlife enjoy marginal plants as they drink from the pond. Blooms attract butterflies and beneficial insects.

A shaded water surface helps inhibit the photosynthesis of algae. There should be enough plants that leaves cover 50 to 70 percent of the water surface. More plants may be needed for ponds less than 1,000 gallons or in sunny locations, and fewer for larger or more shaded ones. Plants have the ability, in combination with light, to use carbon dioxide and give off oxygen. Plant functions add to pond water quality, balancing nature and contributing to enjoyment. The water garden needs several types of plants to be successful. Plants are the best filtration and oxygenating element in the biological balance of the pond. Check with your aquatic garden center for a complete list of plants available.

By nature, water plants are vigorous growers. Blooming plants require fertilization for optimal flower production. Water plants feed on the

Submerged Plants

	Common Name	Botanical Name	Growing Depth	Winter Care
	**Cabomba**	*Cabomba caroliniana*	6–24" deep	Difficult to winter
	**Anacharis**	*Egeria densus or Elodia canadensis*	6–24" deep	Trim tops before winter
	**Dwarf Sag (underwater turf)** **Ribbon Sag**	*Sagittaria sublulata or natans*	6–24" deep	
	**Jungle Val** **Corkscrew Val** **Italian Val**	*Valisneria*	24–48" deep 5–10" deep 18–24" deep	Trim tops before winter

Marginal Plants

	Common Name	Botanical Name	Comments	Depth and Size
	**Hardy Water Canna**	*Thalia dealbata*	Cut back in winter. Sink pots 12" below waterline; cut back stiff stems above waterline. Purple flowers.	18" deep; height 48–60"
	**Varigated Society Garlic**	*Tulbaghia*	Cut back in winter and sink 12" below waterline. Violet flowers.	2 inches deep; height 8–18"
	**Lizard Tail**	*Saururus*	Cut back in winter 12" below waterline. Cut stiff stems above waterline. White flowers.	6-10" deep; height 12–24"
	**Pickerel**	*Pontederia*	Cut back and sink to 12" below waterline. Blue/pink/white flowers.	12-18" deep; height 24–36"
	**Myosotis Aquatic Forget-Me-Nots**	*Palustris*	Blue, pink and white flowers.	1" deep; height 4–6"
	**Water Willow**	*Justicia Americana*	Cut back in winter. Lavender/pink flowers.	1–8" deep; height 16–30"
	**Parrot Feather**	*Palustris*	Cut back in winter. Lower than 12" below the waterline.	1" as a marginal or can be submerged; height 6"
	**Water Celery**	*Oenanthe javanica*	Cut back in winter. White flowers.	1" deep or bog; height 6–8"
	**Hibiscus**	*coccineus* swamp *moscheutos* marsh mallow	Cut back in winter, sink 12" below waterline. Cut stiff stems above waterline. Red, pink or white flowers.	1–6" deep; height 72–108"
	**Pennywort**	*Hydrocotyle*	Cut back in winter and sink 12" below the waterline.	1–4" deep; height 2–6"

same nutrients as algae. The more nutrients water plants consume, the less algae are able to compete and flourish.

Each species of water plant has different depth requirements. This is great for creating an interesting and diverse garden while providing filtration at different levels. Deep-growing plants like water lilies grow at 24 to 30 inches deep. Shelf plants such as lotus and iris grow at 12 to 18 inches deep. Marginal plants are planted at the edge of the water, 1 to 8 inches deep. Submersibles, such as anacharis, live on the bottom of the pond, and floaters on the surface.

The following charts contain information on popular water plants for the Midwest and depth requirements. These are general recommendations. Some shallow-loving plants do fine in deeper water but may react differently. Some deep water plants may do fine in shallower water.

Submerged Aquatics

Sometimes submerged aquatics are referred to as oxygenators. Submergible plants live underwater and act as a natural filter contributing to the biological balance of a successful water garden. Plant one bunch of submerged aquatics for every 1 to 2 square feet of pond surface to effectively filter and compete with algae. Because they develop roots for anchoring, they do best planted in gravel or sand. Do not fertilize.

Note: Anacharis may come in clusters with a metal band at the bottom for weight. This is to sink the plant into the bottom muck for self rooting. Leave the band in place. Do not remove it and distribute plants individually. Submerged plants work most efficiently if placed near a waterfall or where the water is moving.

Marginal Plants

Marginal plants are planted around pond edges to naturalize borders, add texture and color, and soften the look of the pond. They may be planted directly into gravel pockets or potted. Most will flourish without supplemental fertilization. The 10 most popular marginal plants, both hardy and tropical, are listed on the previous page. There are many more available to fit particular pond situations.

Floating Plants

Floating plants serve two important functions. They shade the water surface and filter the water with their floating root systems. Shade reduces the amount of photosynthesis, while roots absorb nutrients, both of which inhibit algae growth. The most popular floating plants are listed below.

Floating Plants

	Common Name	Botanical Name	Description	Size
	**Fairy Moss**	*Azolla caroliniana*	Green turning red in full sun	½ inch
	**Hornwort**	*Ceratophyllum demersum*	Narrow, bright green leaves with inconspicuous flowers	6–24" deep
	**Water Hyacinth**	*Eichhornia crassipes*	Light purple flowers	6–12" height and width
	**Water Lettuce**	*Pistia stratiotes*	Grows in sun but prefers shade; likes heat	4–12" height
	**Frogbit**	*Limnobium spongia*	Heart-shaped leaf with small white flower	1" leaf; ½" height

Other Lily-Like Aquatics

The most popular of the aquatics is the water lily. Other notable hardy aquatics include water hawthorne, Nuphar (spatterdock), and floating heart. Prickly water lily, or gorgon plant, is not hardy, but it produces hardy seeds that drop to the bottom. European frogbit is also self seeding.

Water Lily. Water lilies come in many varieties. Plant sizes range from miniature to quite large with flowers from 2 inches to 12 inches in diameter. Hardy lilies have smooth leaf edges and flower mostly in pastel colors.

These day bloomers characteristically have floating leaves and mildly fragrant flowers. The potted plant prefers quiet water at a depth of 24 inches. To grow truly beautiful lily flowers, the plant requires at least six hours of sunlight per day and monthly feedings.

Because lilies have been hybridized for performance, it is important to choose the right lily variety for your pond. Do you need a large, medium or small variety? Color is another consideration.

Hardy lilies go dormant in winter, resting on the bottom of the pond. Remove dead foliage and blooms regularly to encourage new blooms and keep the pond free of debris. Hardy lilies do best planted in a pot 7 inches deep and 16 inches wide with no holes. The wide shallow pot allows for horizontal growth of the rhizome while adding stability to the plant.

Plants should be re-potted and divided once a year during the growing season, April through August. Aquatic plants grow best in heavy clay loam soil. An adopted mix is two thirds soil and one third sand. Soil from most lawns is acceptable if chemical free. A topping of pea gravel or small stone will help keep the soil in place and prevent fish from interfering. Do not use limestone or road gravel.

Steps for Re-Potting Water Lilies

- Fill the container one-half to three-fourths full of aquatic mix.
- Place fertilizer tabs near the bottom of the pot.
- Remove the old lily and wash off the soil.
- Growing crowns are at the tips of the rhizome where new plants emerge.
- Cut 2- to 4-inch sections of the root containing some anchor roots, fine feeder roots, and the crown.
- Place the cut end next to the pot edge below the soil with the crown pointing toward the center and up at a 45-degree angle.
- Place three to five crowns in and around the pot, adding aquatic mix to cover most of the rhizome.
- Top with pea gravel and carefully lower into the pond.

Tropical lilies have serrated edges and deeper, more vivid color assortments. Some varieties have marmorated leaves streaked with purple and prominent veins. The flower palette includes deep blues, purples, and violets. Tropical lilies are fragrant, with flowers rising up to 12 inches above the plant leaves. Tropical varieties include both day and night bloomers, some of which can get extremely large. Tropical flowers make good cut flowers and are more profuse bloomers than hardy varieties. It is important to remember that they are warm water plants. Constant 70˚F water temperature is necessary before introducing a tropical lily to your pond.

Tropical lilies are perennial, but not in climates where it freezes in the winter. Tropical plants can be overwintered in the house and treated like a houseplant, keeping them either extremely moist or using an indoor pool. Bring plants in before frost and trim aggressively. Do not fertilize during this period. The goal is to keep them alive, not make them flourish.

Place plants in a waterproof container at a temperature between 50 and 70˚F. Fill the container with water and place in a well lit area. Supplemental lighting may be necessary; 10 to 16 hours of light per day is required. If using an indoor pool, prevent water stagnation by adding a small pump to circulate water. Add a couple of small fish to help move water and for enjoyment during the winter. Watch for common houseplant insects and use pond-friendly products. Insecticidal soap is recommended for controlling pests.

Lotus

Lotus, belonging to the genus Nelumbo, is considered to be the ultimate water plant for impressive beauty. These plants require full sun, lots of room, and regular monthly feeding. The exotic flower will rise 1 to 5 feet above the water, and hybridized varieties come in a multitude of colors and petal number. The foliage is large and waxy, causing water droplets to bead into glistening jewels.

Lotus is prominent in Far East and Native American cultures. It is used for food, flower, and medicine and is a symbol of spiritual perfection and purity. Miniature varieties are not as vigorous as larger ones and are referred to as teacup, miniature, or bowl lotus. Larger varieties grow from a running tuber that circles the inside of the container. Grow lotus 18 inches deep, in a 10-inch deep pot submerged with 8 inches of water over the soil line. Repot every 2 to 3 years.

To Re-pot Lotus:

The best time to re-pot is March – April while the plant is dormant.

- Use a 23- by 10-inch pot for full size, 16- by 7-inch pot for semi-dwarf, and 10- by 6-inch for bowl.
- Fill the container one half to three quarters full of aquatic mix.
- Take the pot of lotus and turn it upside down onto a tarp. The best tubers are at the bottom of the pot.
- Gently wash the tubers and unwind them, being careful to protect the growing ends.
- Find the sausage-like internodes with nodes constricted between them.
- Cut through the internodes, which provides a division with 1 to 3 growing ends (a sausage and a half). Float in a tub of water until ready to plant.
- Dampen the soil to make it wet but not soggy, and plant divisions in a shallow trench on each side of the pot. About two tubers to a pot are sufficient.
- Lay the tubers in the trench with the growing end pointed up.
- Cover the thickest part of the tuber with soil and top with 1 inch of sand.
- Saturate the container before lowering it into the pond to let the soil settle.
- Fertilize when new leaves begin to stand above the water.

Other Emergent Plants

There are other aquatic plants that grow at a depth of 18 inches or more, with foliage emerging above the waterline. These plants will grow from rhizomes, running stems, or central crowns.

Plants in this category include iris, pickerel, rushes, umbrella palms, arrowhead, thalia, marsilias, pennywort, parrot feather and veronica. Central crowns or clumps of stems usually are propagated by division. Divide clumps and re-pot with roots covering a mound of soil two-thirds the depth of the pot in the middle. Cover the roots with soil and top with 1 inch of pea gravel. Divide rhizomes following the directions for water lilies. Other more stringy types can be wrapped around the soil mound or planted by sticking cuttings directly into soil.

Tropical Bulb Plants

Cannas, taro, spider lilies, and other bulb plants should be taken care of like other garden bulbs worth saving over the winter. After the first frost, pull the bulbs and wash them. Trim foliage and roots. Store bulbs in moist peat moss and place in a cool, dark place. The ideal temperature to overwinter bulbs is around 50 degrees. In the spring pot the bulbs in containers with holes in the bottom using an aquatic mix (two-thirds heavy clay loam soil and one-third sand). Water well and set in a tray of shallow water. Place in a sunny, warm location. Keep bulbs well saturated to condition them to their future submerged location. Do not submerge the pot until after the threat of frost and until the bulb has produced at least 3 to 4 standing leaves. Hurrying this process could cause the bulb to rot.

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