

# *Plants For Lakefront Revegetation*



By: John Rodgers  
**Bureau of Invasive Plant Management**  
South Gulf Office  
8302 Laurel Fair Circle, Suite 140, Tampa, FL 33610



Seminole County's continued effort to provide its citizens with vital information about our water resources, the County has been authorized by the Bureau of Invasive Plant Management of the Florida Department of Environmental Protection to reprint the Department's, "*Plants for Lakefront Revegetation*" by John Rodgers. This publication is an excellent guide for waterfront owners to design their pond, lake, and stream/river property. As you landscape your lawn, this publication provides information needed to select beneficial native aquatic and wetland plants to aquascape your waterfront property.

*Please note, the cost range for each plant identified in this guide is a suggested rate at the time of printing and is subject to change.*



**The benefits of revegetation with native plants have been widely published. The following is a summary of the advantages of replanting a shoreline:**

1. Food source for wildlife.
2. Protective cover for small fish and other animals.
3. Source of nesting material for reptiles, birds, and small mammals.
4. Shade for fish and humans (cypress trees).
5. Erosion control and soil stabilization.
6. Aesthetics and landscaping appeal.
7. Animal attractor.
8. Nutrient uptake.
9. Plant competition for preventing encroachment of invasive exotics such as hydrilla.
10. Living surface for small insects and other invertebrates important to fisheries.

**The plants listed in this document are species that can be used to provide one or more of the above. Below is a brief explanation of the terms used in this document:**

**Average Height:** Typical height of the plant from substrate to top of leaves (not flowers).

**Leaf Type:** Shape of mature leaves.

**Leaf Size:** Length of mature leaves.

**Flower Type:** Arrangement and/or number of flowers per stem or stalk.

**Flower Color:** Color of the plant's flowers.

**Flowering Season:** Spring (April, May, June), summer (July, Aug, Sept), fall (Oct, Nov, Dec), and winter (Jan, Feb, Mar).

**Habitat:** Most common areas where plant is found.

**Wildlife Value:** Animals that utilize the plant.

**Distribution:** Location within the state – South, Central, and North Florida.

**Overwinter:** Survivability, leaf drop, or leaf burn occurrence.

**Common Uses:** Reasons why plant is used – erosion control, landscape, fish habitat, nesting, etc.

**Soil:** Suggested planting substrate such as sand or muck.

**Light:** Shade or sun preference.

**Salinity:** Tolerance to brackish water (low – freshwater, medium – brackish, high – estuaries).

**Propagation:** How a plant reproduces or spreads. Rhizomes are underground stems that produce daughter plants.

**Pest Problems:** Insect, small mammal or reptile damage, and grass carp if they have been stocked in the waterbody.

**Growth Rate:** Slow, medium, or fast growth.

**Water Depth:** Typical recommended water depth of planting (not the maximum depth a plant can survive).

**Density:** Typical recommended spacing of plantings.

**Planting:** Planting suggestions to improve survivability.

**Survivability:** Low, medium or high.

**Cost:** Retail and wholesale cost per plant (does not include labor). Cost is dependent on the quantity, size, and time of year purchased. These cost figures are an average based on several sources checked in 2001-2002.



## ***HIBISCUS***

(*Hibiscus coccineus* (red) • *Hibiscus laevis* (white to pink) • *Hibiscus moscheutos* (white to cream) • *Hibiscus grandiflorus* (light-pink))

### ***DESCRIPTION***

**Average Height:** 5 to 6 ft

**Leaf Type:** Ovate, some strongly lobed

**Leaf Size:** 4 to 6"

**Flower Type:** Single flower per leaf axil, numerous on plant

**Flower Color:** Red, white or pink

**Flowering Season:** Spring to summer

**Habitat:** Marshes, edges of streams and lakes

**Wildlife Value:** Shelter for small birds; butterfly attractor

**Distribution:** Statewide

**Overwinter:** Leaves and stems die back; resprout in spring

**Common Uses:** Flowering shrub

### ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck, prefers acid soils

**Light:** Medium to high

**Salinity:** Low (except *H. coccineus* and *H. grandiflorus*, occasionally in brackish marshes)

**Propagation:** Seeds (and cuttings)

**Pest Problems:** None

**Growth Rate:** Medium to fast

**Water Depth:** Moist soils and seasonal wet areas

**Density:** 5 ft apart

**Planting:** Trim branches to avoid leggy appearance and to promote bloom production

**Survivability:** High (using small potted plants)

**Cost:** Retail                 \$ 15.00                 3 gal

Wholesale                 \$ 4.00 - 6.00     3 gal (250 minimum order)





# HIBISCUS

*Hibiscus coccineus* (red) • *Hibiscus laevis* (white to pink)  
*Hibiscus moscheutos* (white to cream) • *Hibiscus grandiflorus* (light-pink)





# BALD CYPRESS

*(Taxodium distichum)*

## DESCRIPTION

**Average Height:** 60 to 80 ft

**Leaf Type:** Tiny on green, feather-like branchlets

**Leaf Size:** 1/4" to 3/8" long

**Flower Type:** No flowers; seeds formed in small, round female cones

**Flower Color:** Cones green to brown; pollen formed in long delicate cones

**Flowering Season:** Pollen released in spring

**Habitat:** Marshes, rivers, lakes

**Wildlife Value:** Habitat for fish and other aquatic animals; birds nest in upper branches; wood ducks and mammals feed on seeds

**Distribution:** Statewide

**Overwinter:** Branchlets drop during late fall to early winter (one of a few deciduous conifers)

**Common Uses:** Either along the shoreline or offshore; frequently grouped in clusters of 3 or more, good shade tree during spring through fall

## PLANTING REQUIREMENTS

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low to medium (brackish)

**Propagation:** Seeds

**Pest Problems:** None

**Growth Rate:** Medium, about 1 to 2 ft/yr

**Water Depth:** Upland to 36" of water

**Density:** 10 ft apart

**Planting:** Grows well in dry (if watered frequently during establishment) to wet soil; don't plant in too deep of water to increase survivability (seeds must be unflooded to germinate)

**Survivability:** High with small trees

<b>Cost: Retail</b>	\$ 15.00	3 gal	5-6 ft
	\$ 25.00	7 gal	6-8 ft
	\$ 50.00	15 gal	8-10 ft
<b>Wholesale</b>	\$ 4.00 – 5.35	3 gal	5-6 ft (100 minimum order)
	\$ 14.00 – 15.00	7 gal	6-8 ft (100 minimum order)
	\$ 35.00 – 40.00	15 gal	8-10 ft (100 minimum order)



# ***BALD CYPRESS***

*Taxodium distichum*





# ***GOLDEN CANNA***

*(Canna flaccida)*

## ***DESCRIPTION***

**Average Height:** 3 to 4 ft

**Leaf Type:** Lance shape

**Leaf Size:** 12 to 18" long

**Flower Type:** A few large flowers on a short spike

**Flower Color:** Yellow

**Flowering Season:** Mid spring to summer

**Habitat:** Marshes, ponds, and lake margins

**Wildlife Value:** Butterfly attractor

**Distribution:** South, Central and North Florida (west to Franklin County)

**Overwinter:** Hard freeze will brown upper leaves (lower leaves will remain green), but will not kill plant

**Common Uses:** Ornamental plant with large, showy flowers producing season-long color

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** Insect (aphids) leaf damage, not a preferred grass carp plant

**Growth Rate:** Fast

**Water Depth:** Dry, moist soils to intermittent flooding

**Density:** 18" apart

**Planting:** Will survive in low sunlight, but requires full sun to produce blooms

**Survivability:** High

**Cost:** Retail               \$ 6.00           1 gal  
Wholesale           \$ 0.25 – 0.45 bareroot (1000 minimum order)  
                                  \$ 1.50           1gal           (1000 minimum order)





# ***GOLDEN CANNA***

*(Canna flaccida)*





# ***ALLIGATOR FLAG***

*(Thalia geniculata)*

## ***DESCRIPTION***

**Average Height:** 6 to 8 ft

**Leaf Type:** Lance shape

**Leaf Size:** 1 to 2 1/2 ft long

**Flower Type:** Panicled spikes

**Flower Color:** Purple

**Flowering Season:** Spring to summer

**Habitat:** Marshes, rivers

**Wildlife Value:** Habitat for aquatic animals; butterfly attractor; ducks and mammals feed on seeds

**Distribution:** Statewide

**Overwinter:** Dies back in winter; resprouts from rhizomes during spring

**Common Uses:** Can be used in partial shade areas and as protective cover for wildlife

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Low/medium to high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** Insect (aphids and spider mites) leaf damage, not a preferred grass carp plant

**Growth Rate:** Fast

**Water Depth:** Moist soils and intermittent flooding

**Density:** 3 ft apart

**Planting:** Strong winds can cause some leaf damage in unprotected areas

**Survivability:** High

**Cost:** Retail                   \$ 4.50           1 gal  
Wholesale               \$ 0.40 – 0.57 bareroot   (1000 minimum order)



# ***ALLIGATOR FLAG***

*(Thalia geniculata)*







# ***SOUTHERN BLUE-FLAG***

*(Iris virginica)*

## ***DESCRIPTION***

**Average Height:** 2 to 2 1/2 ft

**Leaf Type:** Ribbon shape, or strap-like

**Leaf Size:** 2 to 2 1/2 ft long

**Flower Type:** Single flower at a time on short spike

**Flower Color:** Blue to blue-purple

**Flowering Season:** Spring

**Habitat:** Marshes, ponds and streams

**Wildlife Value:** Habitat for small aquatic animals; butterfly attractor

**Distribution:** Central and North Florida

**Overwinter:** Evergreen

**Common Uses:** Ornamental plant with showy flowers, especially when planted in dense groupings

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low

**Propagation:** Seeds; rhizomes

**Pest Problems:** Infrequent caterpillar and aphid damage; not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** Water's edge, moist soils to intermittent flooding

**Density:** 1 to 2 ft apart

**Planting:** Will survive in low sunlight, but requires full sun to produce blooms

**Survivability:** High

**Cost:** Retail \$ 3.50 1 gal

Wholesale \$ 0.25 – 0.30 bareroot (1000 minimum order)

\$ 1.75 – 2.00 1gal (1000 minimum order)





# ***SOUTHERN BLUE-FLAG***

*(Iris virginica)*





# SWAMP LILY

(*Crinum americanum*)

## DESCRIPTION

**Average Height:** 2 ft

**Leaf Type:** Ribbon shape, or strap-like

**Leaf Size:** 12 to 24" long

**Flower Type:** 2 to 6 flowers on long stalk

**Flower Color:** White

**Flowering Season:** Spring to summer

**Habitat:** Marshes, rivers

**Wildlife Value:** Habitat for small aquatic animals; ducks and mammals feed on seeds

**Distribution:** Statewide

**Overwinter:** Hard freeze will cause leaves to turn yellow and burn, but will not kill plant

**Common Uses:** Along shoreline as a border plant; showy fragrant flowers

## PLANTING REQUIREMENTS

**Soil:** Sand to muck

**Light:** Low to medium

**Salinity:** Low to medium (brackish)

**Propagation:** Seeds

**Pest Problems:** None, not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** Edge to 3" of water, seasonal wet areas

**Density:** 2 ft apart

**Planting:** Make sure leaves are above water and not in an area flooded all year; in nature, it's usually found in partial or deep shade

**Survivability:** High

<b>Cost:</b> Retail	\$ 4.00	1 gal	
Wholesale	\$ 0.40 – 0.50	bareroot	(1000 minimum order)
	\$ 1.50 – 2.00	1 gal	(1000 minimum order)
	\$ 3.50 - 5.00	3 gal	(1000 minimum order)



# SWAMP LILY

(*Crinum americanum*)





# ***DUCK POTATO***

*(Sagittaria latifolia)*

## ***DESCRIPTION***

**Average Height:** 2 1/2 ft

**Leaf Type:** Arrowhead shape

**Leaf Size:** 7 to 10" long

**Flower Type:** In whorls of 3 flowers on tall flowering stalk

**Flower Color:** White

**Flowering Season:** Spring to fall

**Habitat:** Marshes, rivers, lakes

**Wildlife Value:** Habitat for fish and other aquatic animals; butterfly attractor; waterbirds and mammals feed on seeds and tubers

**Distribution:** Statewide

**Overwinter:** Hard freeze will brown margins of leaves, but will not kill plant

**Common Uses:** Along edge of shoreline, usually landward of arrowhead and pickerelweed

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Low to high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** Leaf spots and aphid damage occasionally; not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** Edge to 6" of water

**Density:** 2 ft apart

**Planting:** Make sure leaves are above water; plant landward of *Sagittaria lancifolia*

**Survivability:** High

**Cost:** Retail \$ 3.50 1 gal

Wholesale \$ 0.35 – 0.55 bareroot (1000 minimum order)





# ***DUCK POTATO***

*(Sagittaria latifolia)*





# ARROWHEAD

(*Sagittaria lancifolia*)

## DESCRIPTION

**Average Height:** 3 ft

**Leaf Type:** Lance shape

**Leaf Size:** 9 to 12" long

**Flower Type:** In whorls of 3 flowers on tall flowering stalk

**Flower Color:** White

**Flowering Season:** Spring to fall

**Habitat:** Marshes, rivers, lakes

**Wildlife Value:** Habitat for fish and other aquatic animals; butterfly attractor; ducks and mammals feed on seeds and tubers

**Distribution:** Statewide

**Overwinter:** Hard freeze will brown margins of leaves, but will not kill plant

**Common Uses:** Along shoreline, its light-green leaves and white flowers are a good contrast to the dark-green leaves and purple flowers of pickerelweed

## PLANTING REQUIREMENTS

**Soil:** Sandy to muck

**Light:** Medium to high

**Salinity:** Low to medium (brackish)

**Propagation:** Seeds and rhizomes

**Pest Problems:** Weevils infrequently feed on flowering stalks; yellowing of leaves during late fall; not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** 6 to 12" of water

**Density:** 1 to 2 ft apart

**Planting:** Make sure leaves are above water; tends to grow in slightly shallower water than pickerelweed

**Survivability:** High

<b>Cost:</b> Retail	\$ 2.50	1 gal
Wholesale	\$ 0.25 – 0.55	bareroot (1000 minimum order)
	\$ 1.25	4" pot (1000 minimum order)



# ***ARROWHEAD***

*(Sagittaria lancifolia)*







# ***PICKERELWEED***

*(Pontederia cordata)*

## ***DESCRIPTION***

**Average Height:** 3 ft

**Leaf Type:** Lance to heart shape

**Leaf Size:** 7 to 10" long

**Flower Type:** Spike

**Flower Color:** Purple

**Flowering Season:** Spring to fall

**Habitat:** Marshes, rivers, lakes

**Wildlife Value:** Habitat for fish and other aquatic animals; stems provide surface for apple snail attachment; butterfly attractor; ducks and mammals feed on seeds

**Distribution:** Statewide

**Overwinter:** Hard freeze will brown leaves, but will not kill plant

**Common Uses:** Along shoreline as a border plant, provides good erosion control

## ***PLANTING REQUIREMENTS***

**Soil:** Sand or muck

**Light:** Medium to high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** Not a preferred grass carp plant; insect (borer and weevil) damage on leaves and stems is not uncommon, but usually will not kill plant

**Growth Rate:** Medium

**Water Depth:** 6 to 18" of water

**Density:** 1 to 2 ft apart

**Planting:** Make sure leaves are above water; tends to grow in slightly deeper water than arrowhead

**Survivability:** High

**Cost:**

Retail	\$ 2.25	1 gal	
Wholesale	\$ 0.25 – 0.45	bareroot	(1000 minimum order)
	\$ 1.25	4" pot	(1000 minimum order)





# ***PICKERELWEED***

*(Pontederia cordata)*





# SAND CORD GRASS

(*Spartina bakeri*)

## DESCRIPTION

**Average Height:** 4 1/2 ft

**Leaf Type:** Rolled or curled grass leaves

**Leaf Size:** 10 to 30" long

**Flower Type:** Narrow cluster of small spikes

**Flower Color:** Bronze

**Flowering Season:** Summer to fall

**Habitat:** Marshes, lakes

**Wildlife Value:** Habitat for small animals; waterfowl and songbirds feed on seeds

**Distribution:** Statewide

**Overwinter:** Hard freezes may cause some leaf browning

**Common Uses:** Along shoreline in fresh and brackish waters; good erosion control

## PLANTING REQUIREMENTS

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low to medium (brackish to saline tidal marshes)

**Propagation:** Seeds and rhizomes (division)

**Pest Problems:** None

**Growth Rate:** Medium

**Water Depth:** Dry to moist soils; can survive in dry soils and extended flooded areas for long periods of time

**Density:** 3 ft apart

**Planting:** Establish at or above shoreline in moist soils

**Survivability:** High

<b>Cost:</b> Retail	\$ 3.50	1 gal	
	\$ 8.50	3 gal	
Wholesale	\$ 0.35	bareroot	(1000 minimum order)
	\$ 1.40 – 1.75	1 gal	(1000 minimum order)
	\$ 3.50 - 4.00	3 gal	(1000 minimum order)



# ***SAND CORD GRASS***

*(Spartina bakeri)*





# ***SOFT RUSH***

*(Juncus effusus)*

## ***DESCRIPTION***

**Average Height:** 3 to 4 ft

**Leaf Type:** Leaves inconspicuous; stems green, round, tubular

**Leaf Size:** Blades absent; stems elongated with stiff green bract rising above flower cluster

**Flower Type:** Cluster of spikelets

**Flower Color:** Greenish-brown

**Flowering Season:** Summer

**Habitat:** Marshes

**Wildlife Value:** Habitat (shelter and nesting) for aquatic mammals and birds; ducks and small mammals feed on seeds

**Distribution:** Statewide

**Overwinter:** Evergreen

**Common Uses:** Along shoreline in fresh and brackish water areas; good erosion control plant

## ***PLANTING REQUIREMENTS***

**Soil:** Sandy to muck

**Light:** Medium to high

**Salinity:** Low to medium (brackish)

**Propagation:** Seeds and rhizomes

**Pest Problems:** None; not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** Moist soils; can survive extended flooding

**Density:** 3 ft apart

**Planting:** Can be sectioned into individual plants or clumps

**Survivability:** High

<b>Cost:</b> Retail	\$ 5.00	1 gal
Wholesale	\$ 0.25 - 0.30	bareroot (1000 minimum order)
	\$ 1.50 - 1.80	1 gal (1000 minimum order)





# ***SOFT RUSH***

*(Juncus effusus)*





# ***SPIKERUSH***

*(Eleocharis cellulosa & interstincta)*

## ***DESCRIPTION***

**Average Height:** 2 1/2 ft

**Leaf Type:** Leaves inconspicuous; stems green, round, tubular

**Leaf Size:** Blades are absent, stems elongated

**Flower Type:** Small short spike with scales, not showy

**Flower Color:** Yellow-brown

**Flowering Season:** Spring to fall

**Habitat:** Marshes, lakes

**Wildlife Value:** Habitat for fish and other aquatic animals; ducks and mammals feed on seed head

**Distribution:** Statewide

**Overwinter:** Yellowing of stems

**Common Uses:** Adds diversity to shoreline plants and attracts wildlife

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low to medium (brackish)

**Propagation:** Seeds and rhizomes

**Pest Problems:** None; not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** 6 to 12" of water

**Density:** 2 ft apart

**Planting:** Prefers shallow water areas, clumps soon send out rhizomes

Survivability: High

**Cost:** Retail                      \$ 2.50                      1 gal  
Wholesale                      \$ 0.25 to 0.45 bareroot (1000 minimum order)



# ***SPIKERUSH***

*(Eleocharis cellulosa & interstincta)*







# ***PASPALIDIUM GRASS***

*(Paspalidium geminatum)*

## ***DESCRIPTION***

**Average Height:** 3 ft

**Leaf Type:** A grass; leaves with sheaths and blades

**Leaf Size:** 8 to 12" long

**Flower Type:** Spikelet seed head

**Flower Color:** Green

**Flowering Season:** All year

**Habitat:** Marshes, rivers, and lakes

**Wildlife Value:** Excellent habitat for fish and other aquatic animals

**Distribution:** Statewide

**Overwinter:** Stems and leaves may brown in hard freeze

**Common Uses:** Planted in shallows beyond shoreline plants such as pickerelweed to improve fisheries

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** None, not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** 12 to 18" of water

**Density:** 2 ft apart

**Planting:** Leaves must be above water; place rhizomes on top or slightly below soil; weigh down if necessary in windy areas

**Survivability:** Medium to high

**Cost:** Retail           \$ 3.00           1 gal  
Wholesale       \$ 0.45 – 0.55   2" pot (1000 minimum order)





# ***PASPALIDIUM GRASS***

*(Paspalidium geminatum)*





# MAIDENCANE

(*Panicum hemitomon*)

## DESCRIPTION

**Average Height:** 3 ft

**Leaf Type:** A grass; leaves with sheaths and blades

**Leaf Size:** 7 to 11" long

**Flower Type:** Spikelet seed head

**Flower Color:** Green

**Flowering Season:** Summer

**Habitat:** Marshes, rivers, lakes

**Wildlife Value:** Excellent habitat for fish and other aquatic animals, especially invertebrates; seeds fed upon by songbirds

**Distribution:** Statewide

**Overwinter:** Stems and leaves may brown in hard freeze

**Common Uses:** Planted in shallows beyond shoreline plants such as pickerelweed to improve fisheries

## PLANTING REQUIREMENTS

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** None, not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** 12 to 18" of water

**Density:** 2 ft apart

**Planting:** Make sure leaves are above water and rhizomes are firmly in soil

**Survivability:** Medium to high

**Cost:** Retail \$ 2.25 1 gal  
Wholesale \$ 0.25 - 0.40 bareroot (1000 minimum order)  
\$ 0.45 - 0.55 2" pot (1000 minimum order)  
\$ 0.75 - 0.80 4" pot (1000 minimum order)





# ***MAIDENCANE***

*(Panicum hemitomon)*





# ***JOINTED FLAT SEDGE***

*(Cyperus articulatus)*

## ***DESCRIPTION***

**Average Height:** 5 ft

**Leaf Type:** Leaves inconspicuous; stems green, round, tubular

**Leaf Size:** Blades are absent, stems elongated

**Flower Type:** Cluster of spikelets

**Flower Color:** Light-brown

**Flowering Season:** Summer to fall

**Habitat:** Marshes, rivers, lakes

**Wildlife Value:** Habitat for fish and other aquatic animals; songbirds feed on seeds

**Distribution:** Statewide

**Overwinter:** Some browning of stems

**Common Uses:** Offshore, planted in deeper water

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low to medium (brackish)

**Propagation:** Seeds and rhizomes

**Pest Problems:** None; not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** 18 to 30" of water

**Density:** 3 ft apart

**Planting:** Use small plants versus large mature plants; place between shoreline plants and bulrush/water lily plants; stems are frequently bent over mid-way to prevent whipping of plants in windy areas; new stems will sprout.

**Survivability:** High

**Cost:** Retail \$ 4.00 1 gal

Wholesale \$ 0.60 – 0.85 bareroot (1000 minimum order)





# ***JOINTED FLAT SEDGE***

*(Cyperus articulatus)*





# ***BULRUSH***

(*Scirpus californicus* & *validus*)

## ***DESCRIPTION***

**Average Height:** *S. californicus* – 6 to 9 ft  
*S. validus* – 4 to 5 ft

**Leaf Type:** Leaves inconspicuous. Stems green, round tubular, tall

**Leaf Size:** Reduced sheaths with blades absent.

**Flower Type:** Spikelets, not showy

**Flower Color:** Brown

**Flowering Season:** Spring to fall

**Habitat:** Marshes, rivers, lakes

**Wildlife Value:** Excellent habitat for fish and other aquatic animals; stems provide surface for apple snail and invertebrate attachment; ducks, songbirds and mammals feed on seeds

**Distribution:** Statewide

**Overwinter:** Generally evergreen

**Common Uses:** Plant offshore in deeper water to improve fisheries and for songbird/wading bird habitat

## ***PLANTING REQUIREMENTS***

**Soil:** Sandy or muck

**Light:** Medium to high

**Salinity:** Low to medium (brackish)

**Propagation:** Seeds and rhizomes

**Pest Problems:** At times insect damage can be heavy, especially during early fall; not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** 24 to 36" of water

**Density:** 3 ft apart

**Planting:** Use small plants versus large mature plants; stems are frequently bent over mid-way to prevent whipping of plants in windy areas; weigh down plants in deeper water; seeds can be spread in shallow muddy areas

**Survivability:** Medium

**Cost:** Retail \$ 2.60 1 gal  
Wholesale \$ 0.35 – 0.45 bareroot (1000 minimum order)



# ***BULRUSH***

*(Scirpus californicus & validus)*







# ***YELLOW WATER LILY***

*(Nymphaea mexicana)*

## ***DESCRIPTION***

**Average Height:** Floating leaves

**Leaf Type:** Roundish heart shapes

**Leaf Size:** 6" to 8" wide

**Flower Type:** Single flower per stem

**Flower Color:** Yellow

**Flowering Season:** Summer

**Habitat:** Marshes, lakes and quiet streams

**Wildlife Value:** Habitat and shade for fish and other aquatic animals; mammals feed on tender stems

**Distribution:** Statewide

**Overwinter:** Perennial, majority of the leaves die off; overwintering rhizomes or stolons develop in late fall and occasionally produce small leaves.

**Common Uses:** Deep water plant used to improve fisheries, showy yellow blooms attractive

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** Insect leaf damage; turtles and small mammals feed on the leaves; not a preferred grass carp plant

**Growth Rate:** Medium

Water Depth: 24" to 36" of water

**Density:** 5 ft apart

**Planting:** Place rhizome cluster just below soil (trim off stolons)

Survivability: Medium

**Cost:** Retail \$ 16.00 1 gal (multi-leaf)

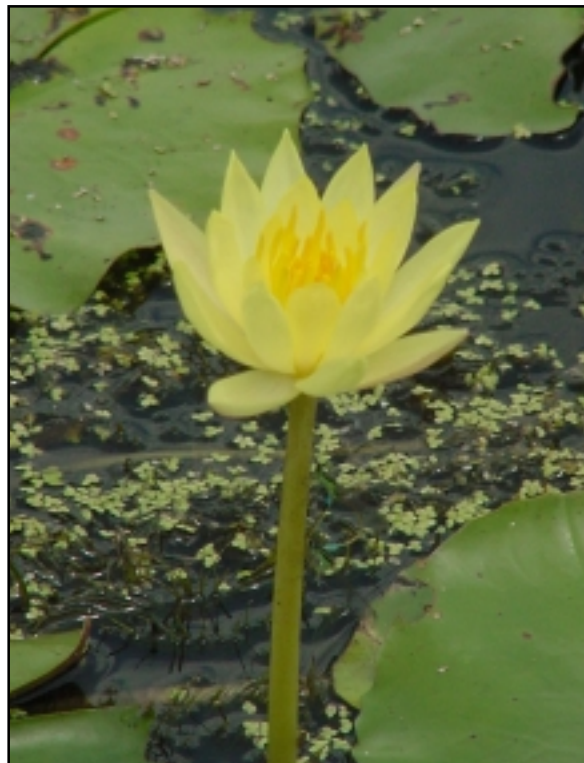
Wholesale \$ 2.50 - 3.00 bareroot (1000 minimum order)





# ***YELLOW WATER LILY***

*(Nymphaea mexicana)*





# ***FRAGRANT WATER LILY***

*(Nymphaea odorata)*

## ***DESCRIPTION***

**Average Height:** Floating leaves

**Leaf Type:** Large, roundish heart shapes

**Leaf Size:** 10 to 18" wide

**Flower Type:** Single flower per stem

**Flower Color:** White

**Flowering Season:** Spring to fall

**Habitat:** Marshes, lakes, and quiet streams

**Wildlife Value:** Habitat and shade for fish and other aquatic animals; invertebrates attach on underside of leaves; ducks and mammals feed on seeds and stems

**Distribution:** Statewide

**Overwinter:** Evergreen

**Common Uses:** Deep water plant for fisheries; showy sweet-scented flowers aesthetically pleasing

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Medium to high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** Insect and fungal leaf damage; ducks, turtles and small mammals feed on the leaves; not a preferred grass carp plant

**Growth Rate:** Medium

**Water Depth:** 30 to 36" of water

**Density:** 5 ft apart

**Planting:** Use a 18 to 24" long rhizome for planting, place on soil, weight down; leaf tear damage may occur in windy areas

**Survivability:** High

**Cost:** Retail \$ 16.00 1 gal

Wholesale \$ 0.90 – 1.20 bareroot (1000 minimum order)



# ***FRAGRANT WATER LILY***

*(Nymphaea odorata)*





# ***SPATTERDOCK***

*(Nuphar lutea/advena)*

## ***DESCRIPTION***

**Average Height:** Floating leaf or extending several inches above water surface

**Leaf Type:** Heart shaped, longer than wide

**Leaf Size:** 10 to 13" long

**Flower Type:** Single, ovoid shape flower per stem

**Flower Color:** Yellow

**Flowering Season:** Late winter to summer

**Habitat:** Marshes, rivers, lakes

**Wildlife Value:** Habitat and shade for fish and other aquatic animals; waterbirds feed on seeds

**Distribution:** Statewide

**Overwinter:** No freeze damage (see pest problem below)

**Common Uses:** Deep water plant; good plant for fisheries

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Medium - high

**Salinity:** Low

**Propagation:** Seeds and rhizomes

**Pest Problems:** Heavy insect damage to leaves and upper stems during winter; not a preferred grass carp plant

**Growth Rate:** Fast in muck

**Water Depth:** 30 to 36" of water

**Density:** 5 ft apart

**Planting:** Use small plant with submersed leaves or use 8 to 12" length rhizome for planting; place on soil, weigh down, leaves may die off soon after planting with new sprouts occurring in several weeks

**Survivability:** High

**Cost:** Retail \$ 12.00 1 gal

Wholesale \$ 1.00 – 1.10 bareroot (1000 minimum order)





# ***SPATTERDOCK***

*(Nuphar lutea/advena)*





# ***TAPE-GRASS, EEL-GRASS***

*(Vallisneria americana)*

## ***DESCRIPTION***

**Average Height:** Plants submersed, 6 inches tall to several feet (horizontal length in flowing water)

**Leaf Type:** Ribbon shape

**Leaf Size:** 6 inches to several feet (in flowing water)

**Flower Type:** Single flower per stalk; only female flowers seen at surface

**Flower Color:** White, tiny green tube

**Flowering Season:** Spring to summer

**Habitat:** Rivers, lakes

**Wildlife Value:** Excellent habitat for fish and other aquatic animals including invertebrates; waterfowl feed on leaves and flowers

**Distribution:** Statewide

**Overwinter:** Evergreen

**Common Uses:** Excellent submersed species for fisheries; good competitor to invasive species such as hydrilla; reduces turbidity from sediments

## ***PLANTING REQUIREMENTS***

**Soil:** Sand to muck

**Light:** Low to high

**Salinity:** Low to medium (brackish)

**Propagation:** Seeds, rhizomes and winter buds

**Pest Problems:** Not a preferred grass carp plant; turtles feed on leaves

**Growth Rate:** Medium

**Water Depth:** 12" to 36" of water

**Density:** 2 ft apart

**Planting:** Plant in shallow water for best results; fence in area to prevent turtles from eating leaves; plant winter vegetative buds by burying them into the sediment 2 to 3" deep; make sure filamentous algae doesn't cover water surface and shade out eel-grass

**Survivability:** Low

**Cost:** Retail \$ 1.00 bareroot

Wholesale \$ 0.25 – 0.30 bareroot (1000 minimum order)



# ***TAPE-GRASS, EEL-GRASS***

*(Vallisneria americana)*

