


Plants of the Kissimmee-Okeechobee-Everglades Ecosystem

Native Plants

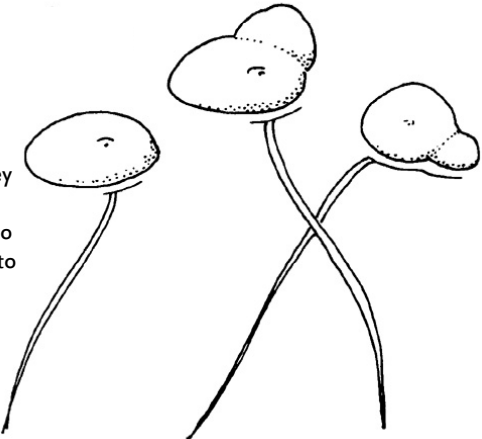


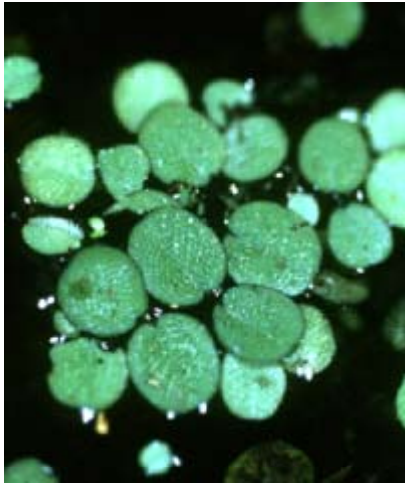
Alana Edwards

Duckweed

Lemna valdiviana

Duckweed is a floating plant that often forms large floating mats. They are tiny green plants with shoe-shaped leaves, approximately 1/16 to 1/8 inch in size. Each plant has two to several leaves joined at the base. A single root hangs beneath.



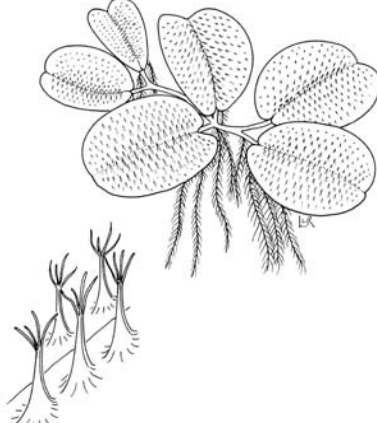



Alana Edwards

Water fern

Salvinia minima

Water ferns are floating ferns. This species is about 3/4 inch in width. It occurs in still waters having high organic content. Water fern has joined oval leaves. Its leaf surfaces are covered with stiff hairs. Water fern has root-like structures which are actually modified fronds.



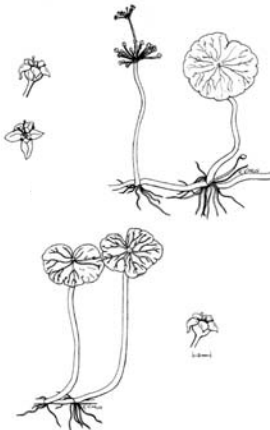


Center for Aquatic and Invasive Plants

Pennywort

Hydrocotyle umbellata


Pennywort has long creeping stems that often form dense mats. The stems can grow many feet long. The circular leaves are typically the size of a half-dollar, but can be much larger or smaller. The leaves are shiny and leathery, and the margins have blunted teeth. Long leaf stalks attach at the leaf centers, umbrella-like. The flowers form delicate white or green umbels.



Special thanks to the Center for Aquatic and Invasive Plants (www.ifas.ufl.edu) for the use of line drawings, text and some photos and to the ISB:Atlas of Florida Vascular Plants (<http://www.florida.plantatlas.usf.edu/>) for the use of some photos. Produced by the Florida Center for Environmental Studies at Riverwoods Field Lab. Contact 863/462-0025 or <http://www.ces.fau.edu/education/resources>

Plants of the Kissimmee-Okeechobee-Everglades Ecosystem


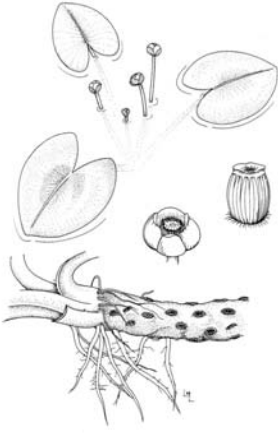
Native Plants



Robert Turpin

Spatterdock, Cow Lily
Nuphar advena


Spatterdock is a large plant whose leaves are often floating. However, submersed and emergent leaves are common. The heart-shaped leaves are attached to long, stout stems which arise from large, spongy rhizomes. The flowers are yellow and "half-opened" at or above the water surface. Flowers are attached to thick round stems that are often 6 feet long. The plant is called Cow Lily because it is known to be eaten by cows.



Alana Edwards

Smartweed
Polygonum densiflorum


Smartweed is an emergent plant. A distinguishing characteristic of smartweed is its swollen nodes where the leaves meet the stems. The leaves are lanceolate and narrow. Stipules on the node form sheaths that surround the stem called ochreas. Leaves are alternately attached. The flowers are small and pinkish or white, and grow in terminal spikes that are typically several inches long.



Robert Turpin


Pickerelweed
Pontederia cordata

Pickerelweed is a very common emergent plant. It typically grows to about 2 or 3 feet tall. Its leaves are large, up to 5 inches wide and are usually twice as long. Leaf shapes are variable, but are usually lanceolate. The flowers are violet-blue and arranged on spikes. Ducks will consume the seeds of pickerelweed while muskrats and nutria will consume the rhizomes and base.



Plants of the Kissimmee-Okeechobee-Everglades Ecosystem


Native Plants




SFWMD

Duck Potato
Sagittaria lancifolia

Duck potato is an emergent plant with large leaves and conspicuous flowers. It has large, firm, lanceolate leaves, which are typically 4 inches wide and up to 2 feet long. The flowers are showy and white with three petals. They are extended on thick stalks that are often a foot or more above the leaves. Duck potato gets its name from its potato-like, underground corms that they sometimes form. The tuberous roots can be eaten like potatoes and ducks eat the small, flat seeds.






Bob Bierman

Arrowhead
Sagittaria latifolia

Arrowhead is an emergent plant with leaves basal, in submersed, floating, or emerged forms, depending on species and growing conditions. Leaves can be strap shaped, some with arrowhead-shaped, lance shaped, or oval blades. Flowers unisexual, on the same plant usually white petals, 3 green sepals; stamens of male flowers numerous, pistils separate, numerous, and crowded into a bumpy dome shape. The individual flowers are on a slender stalk and borne in whorls of 3 on a long scape (male whorls above, female below).





Center for Aquatic and Invasive Plants


Alligator Flag
Thalia geniculata

Alligator Flag is a large, emergent plant that grows from a thick rhizome. The large simple leaves are on long stalks and are broadly lance-shaped, with rounded bases. They can be up to 8 inches wide and more than 2 1/2 feet long. Multiple small purple flowers hang from bracts on top of a tall flower stalk. The flowers have 3 petals. Named alligator flag because it is known to grow in alligator holes.



Plants of the Kissimmee-Okeechobee-Everglades Ecosystem

Native Plants

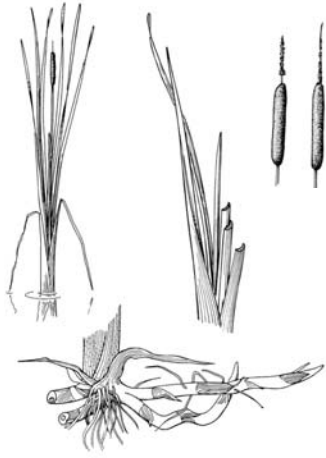



Robert Turpin

Cattails

Typha sp.

Cattails have stems to 9 feet tall. Its leaf blades are strap-like, stiff, and sheathed together at the base to appear "flattened". The inflorescence is spike-like, with very densely packed tiny flowers. Cat-tails get their name from their brown cylindrical flower spikes which can be more than 1 foot long. Although they are native plants they can become a nuisance because they proliferate in areas with high levels of nutrients.







Center for Aquatic and Invasive Plants

Sawgrass

Cladium jamaicense

Sawgrass is actually a sedge and its stems can grow from 4 to 10 feet tall. The leaf blades are large and stiff with small sharp sawteeth along the margins and underside midribs. The inflorescence is large, tall and complex, often extending several feet above the leaves. The spikelets are light reddish brown. Sawgrass is also known as the famous native Everglades species.






Center for Aquatic and Invasive Plants

Soft Rush

Juncus effusus subsp. *solutus*

One of the most common species of *Juncus*, the native soft rush may be found as a single clump, as a colony of clumps, or as a colony of single stems several feet tall, in water or on "dry" ground. Its pale-green stems are erect and two to five feet tall. Stems are cylindrical and have no leaves. Leafy reddish sheaths wrap the stems at the bottom of the plant. The inflorescence of soft rush appears to be coming out of the side of the stem. The inflorescence is open and branched. Each branch has 30-100 small flowers, each greenish-brown flower on its own stalk. Above the inflorescence is a "continuation" of the pointed stem, this being a stiff, rolled and pointed bract, usually brown or grayish when mature. Soft rush provides food and nesting to birds and other wildlife.



Plants of the Kissimmee-Okeechobee-Everglades Ecosystem

Native Plants



Center for Aquatic and Invasive Plants

Common reed

Phragmites australis

Common reed is a very large grass. Its rhizomes are thick and its stems are stiff, erect, and grow to 16 ft. tall. The leaf blades alternate along top half of stem and are flat, strap-like, and smooth, tapering to a long tip up to 2 ft. long, to more than 1 in. wide. The inflorescence is conspicuous, large, silvery-tan, plume-like, 1-2 1/2 ft. long, silky, on stem tip, and often draping to one side.



Alana Edwards

Water-Hemlock

Cicuta mexicana

Water-Hemlock is a perennial herb that grows up to 2.5 m tall. Flowers are produced in a flat-topped, terminal or axillary, compound umbels. Strongly resembles Elderberry. The plants is used by the Black Swallowtail butterfly as a larval food source. All parts of this plant are toxic to humans.



Alana Edwards

Elderberry


Sambucus nigra subsp. canadensis

Elderberry is a medium to large shrub, up to 4 m tall. Leaves are opposite and petioles are usually pubescent. Small, white flowers with 5 petals on terminal cymes. Fruit is a fleshy purple-black, berry-like drupe. The fruits are favorites of birds such as robins, mockingbirds and cedar waxwings. The fruit is edible and is made into jams, jellies and wine.



Plants of the Kissimmee-Okeechobee-Everglades Ecosystem


Native Plants




SFWMD

Buttonbush
Cephalanthus occidentalis

Buttonbush is a shrub which can grow up to 3m tall. The elliptic to ovate leaves are deciduous, and are opposite or whorled. Flowers are small, white, ball-like structures on long stalks below the leaves. The fruiting structure is round, brown and usually persists throughout the year. Waterfowl and shorebirds consume the seeds; butterflies, bees, and hummingbirds are attracted to its nectar.





SFWMD

Carolina willow
Salix caroliniana

Small to medium tree or large shrub with a spreading, open, irregular crown. There are separate male and female trees, both bearing rather inconspicuous flowers in catkins in mid spring. The female flowers mature to an elongate cluster of small fruits which open, liberating seeds bearing white, silky, plume-like hairs which aid in long distance wind dispersal. Only native larval host plant for the viceroy butterfly; also larval host for (*Automeris io*) moths.



Alana Edwards

Wax Myrtle
Myrica cerifera

Wax Myrtle is an evergreen shrub or small tree that can grow up to 12m in height. The leaves are alternate and narrowly oblanceolate, typically toothed toward the apex. Flowers are borne in catkins at the leaf axils. The fruit is a small, waxy, bluish drupe. The berries and aromatic leaves were used for its waxy substances by settlers to make candles. The fruit is a food source for many birds.

Plants of the Kissimmee-Okeechobee-Everglades Ecosystem

Native Plants



Alana Edwards

Live Oak

Quercus virginiana

Live Oaks are spreading evergreen trees which grow to about 20m in height. The bark is rough and has a central trunk which typically divides 2-3cm above the ground into several large branches. The leaves are alternate, leathery, and about 2-15cm long. The Live Oaks often delineate higher land elevations when found in wetland areas.



Alana Edwards

Bald Cypress

Taxodium distichum

Bald Cypress is a tall, straight, deciduous tree to about 40 meters in height. Older trees will often exhibit a large buttressed base. The leaves are between 8-20 mm in length and having a feathery appearance. Cypress knees typically protrude from the ground around Cypress trees. The knees help to provide oxygen transport and give the tree stability in wetland soils.



Acer rubrum
Photo by Shirley Denton

Shirley Denton


Red Maple

Acer rubrum

Medium size to large deciduous tree with opposite, palmate leaves; flowering in late winter, these trees are conspicuously covered in red flowers or fruit; is a winged samara, maturing and falling from the trees in late spring. Red maples are found in swamps, floodplains, river and stream banks, lake and pond margins, disturbed wet soils and mesic uplands.

Plants of the Kissimmee-Okeechobee-Everglades Ecosystem

Native Plants




Gil Nelson

Pond apple

Annona glabra

A shrub or small tree with upwardly reflexed evergreen leaves, cream-white to pale yellow flowers with thick petals, and large, distinctive fleshy fruit. Pond apples are an understory species found along stream and river banks, canal banks, freshwater ponds, strands and deep slough swamps. Early Indians and settlers used the fruit as a food.

Annona glabra
Photo by Gil Nelson




South Florida Water Management District

Sabal Palm

Sabal palmetto

A palm tree with evergreen, fan shaped leaves which exhibit hanging threads and a long downturned midrib. The trunk is usually partially or completely (smaller individuals) covered by the bases of the petioles of broken off dead leaves. Sabal palms inhabit both wetland and upland sites; shallow floodplains, hydric and mesic hammocks, coastal forests, to hydric flatwoods, and pine rocklands of southern Florida (especially where subsurface limestone is present). The heart of this palm is edible and is commonly referred to as swamp cabbage or heart of palm.



Alana Edwards


White Twinevine

Sarcostemma clausum

White Vine is an herbaceous to semi-woody vine which has white flowers in clusters. Leaves are ovate and 6-7 cm in length. As a member of the milkweed family, this vine has a milky sap. Both the Queen and Soldier butterflies use this plant as a larval food source, laying eggs singly under the leaves.

Plants of the Kissimmee-Okeechobee-Everglades Ecosystem


Non-Native Plants




Robert Turppin

Hydrilla *Hydrilla verticillata*

Hydrilla is an invasive submerged plant. It can grow to the surface and form dense mats. Hydrilla stems are slender, branched and up to 25 feet long. Hydrilla's small leaves are strap-like and pointed. They grow in whorls of four to eight around the stem. The leaf margins are distinctly saw-toothed. Hydrilla often has one or more sharp teeth along the length of the leaf mid-rib. Hydrilla produces tiny white flowers on long stalks. *Hydrilla verticillata's* dioecious type (plants having female flowers only) originates from southern India. Hydrilla's monoecious type (plants having male and female flowers on the same plant) is probably from Korea.







Alana Edwards

Water Lettuce *Pistia stratiotes*

Water Lettuce is a floating plant. Its leaves are very thick, light dull-green, hairy and ridged. There are no leaf stalks. Its roots are light-colored and feathery. Its flowers are inconspicuous. It was once thought the water lettuce was native because it was described in 1765 by William Bartram. However, some experts believe the plant's origins are in Africa and it arrived in the ballast of explorer's sailing ships. Because it is invasive, years of biocontrol research has resulted in the successful introduction of two insects which are believed to be helping keep water lettuce under maintenance control in many places.






Center for Aquatic and Invasive Plants


Water Hyacinth *Eichhornia crassipes*

A native from South America, Water Hyacinth is an invasive floating plant. They vary in size from a few inches to over 3 feet tall. They have showy lavender flowers and the leaves are rounded and leathery, attached to spongy and sometimes inflated stalks. The plant has dark feathery roots. Water Hyacinth is closely related and often misidentified as our native Pickerel Weed. The first biocontrol insect released was the mottled water hyacinth weevil (*Neochetina eichhorniae*), the second biocontrol insect released was the chevroned water hyacinth weevil (*Neochetina bruchi*) and the third biocontrol insect introduced was the Argentine water hyacinth moth (*Sameodes albiguttalis*).



Plants of the Kissimmee-Okeechobee-Everglades Ecosystem


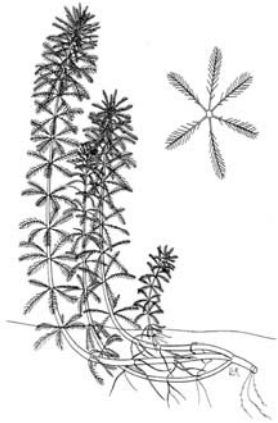
Non-Native Plants



Alana Edwards

Parrot feather
Myriophyllum aquaticum



Parrot feather is an emergent plant that trails along the ground or water surface. Parrot feather leaves are oblong, deeply cut and feathery looking. Parrot feather leaves are arranged in whorls of four to six. Stems can be five feet long. Stems trail along the ground or water surface, becoming erect and leafy at the end. Parrot feather is native to South America and continues to be sold in many garden centers, often under incorrect names.



Center for Aquatic and Invasive Plants

Alligator weed
Alternanthera philoxeroides


A native from South America, Alligator weed is an emergent plant. It may form sprawling mats over the water or along shorelines. Alligator weed stems are long, branched, and hollow. Leaves are simple, elliptic, and have smooth margins. Leaves are opposite. The whitish papery flowers grow on stalks. The first biocontrol insect released against aquatic weeds in the U.S. was for alligator weed and has proven to be very successful.



Center for Aquatic and Invasive Plants

Para grass *Urochloa mutica*

Para grass is a non-native invasive plant from Africa. It is a medium size sprawling grass that may be noticed covering large areas growing in water or on land. Para grass seeds are used by water birds. Para grass has sprawling stems, which recline on the ground then ascend upward, 3-12 ft. long; leaf nodes swollen, with dense shaggy hairs; leaf blades flat, 4-12 in. long, to 3/4 in. wide, fine short hairs on upper surface at base; sheaths loose, overlapping, with stiff hairs; inflorescence at stem tip, 8-20 alternate branches spreading upward; spikelets purplish.




Plants of the Kissimmee-Okeechobee-Everglades Ecosystem


Non-Native Plants

Center for Aquatic and Invasive Plants

Torpedo Grass *Panicum repens*

Torpedograss grows erect or leaning, to about 3 feet tall. Its stems are rigid. It may be easily confused with maidencane. It has narrow leaves that are only 1/16 to 1/4 inch wide and 2 to 10 inches long. The leaves have hairs on the upper surface, and often are rolled inward. The inflorescence of torpedograss is 3 to 9 inches long, branched and somewhat opened, with the branches pointed upwards. Native to Africa and/or Asia, it was introduced to the U.S. in the early 1900's by United States Dept. of Ag. They imported and distributed torpedograss seed for planting in pasturelands, providing forage for cattle and now it has invaded natural areas.






Center for Aquatic and Invasive Plants

Lantana *Lantana camara*

Deciduous shrub to 2m tall or more. Stems are square and the leaves are opposite, simple with petioles to 2 cm long. Flowers are small, multicolored, and in stalked dense, flat-topped clusters to 4 cm across. Flowers in a single cluster may be white to pink or lavender, yellow to orange or red, changing color over time. The fruit is a round, fleshy, 2-seeded drupe, about 5mm wide, green turning purple then blue-black. Native to the West Indies, this invasive exotic is dispersed by animals which consume the berries. It has been known to hybridize with native Lantana, contaminating the endemic gene pool.




Glenn Flemming

Primrose Willow
Ludwigia peruviana.


Water primroses are emergent plants. They can grow to 5 or 6 feet tall. Stems are branched and sometimes have long hairs. The leaves are ovate to lanceolate, and up to 6 inches long. Leaves are covered on both sides by minute soft hairs., *L. peruviana* (short, fat ovary, in drawing). Both *L. peruviana* and *L. octovalvis* have 4 petals. Flowers on all species of Ludwigia are yellow.





Plants of the Kissimmee-Okeechobee-Everglades Ecosystem


Non-Native Plants




Alana Edwards

Brazilian Pepper *Schinus terebinthifolia*

Brazilian Pepper is a small tree up to 30 feet tall, with a short trunk usually hidden by dense intertwining branches. The leaves have a reddish, sometimes winged midrib. Leaves have 3 to 13 finely toothed leaflets which are 1 to 2 inches long. The flowers are white and the fruit are in clusters: glossy, green and juicy at first, becoming bright red. Brazilian Pepper is from South America and was introduced as an ornamental in the mid 1800's. It is one of the most invasive exotic plants in Florida.





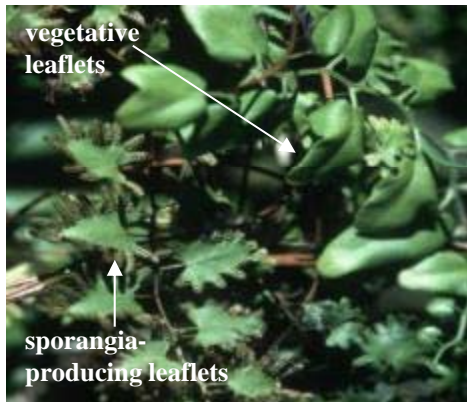
Lygodium japonicum
Photo by Shirley Denton

Shirley Denton

Japanese Climbing Fern

Lygodium japonicum

Japanese Climbing Fern is native to eastern Asia from Japan and west to the Himalayas. It has twining fronds of indeterminate growth and can reach lengths of 90 feet. Above-ground growth occurs along wiry main stems, properly called "rachises". Japanese Climbing Fern is closely related to Old World Climbing Fern (*Lygodium microphyllum*) and is distinguished by its feathery, light green fronds, with triangular, compound leaf branches (pinnae) and lobed, stalked leaflets (pinnules) on wiry, twining, stems (rachises), often orange to brown in color.



vegetative leaflets


sporangia-producing leaflets

Alana Edwards

Old World Climbing Fern

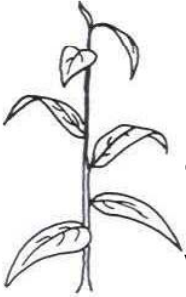
Lygodium microphyllum

Old World Climbing Fern is a fern with climbing fronds. What looks like a stem is actually a climbing, freely branching, leaf (frond) which may grow as long as 100 feet. It has two types of leaflets on its climbing leaf. The leaflet with the simple (unlobed) outline is a normal vegetative leaflet. The more convoluted leaflet has sporangia along its margin, which produce spores leading to the development of gametophytes. Old World Climbing Fern is an invasive exotic vine that is native to Asia and Australia.



Glossary

alternate - leaves occurring one at a node.

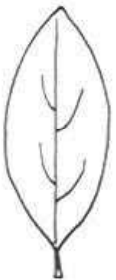


biocontrol- natural method for controlling exotic species.

corm - an enlarged solid subterranean stem, often rounded in shape but of no distinct characteristic shape or size in some species; filled with nutrients.

alternate

emersed plants - plants growing with their roots and a portion of the shoot below the water and the remainder of the shoot above the surface of the water.



elliptic

elliptic - an outline that is oval, narrowed to rounded at the ends and widest at about the middle (as the outline of a football).

floating - a plant that floats on the surface of the water with its roots not being attached to any structure.



lanceolate

gametophyte - the gamete-forming haploid phase in the alternation of plant generations.

inflorescence - a flower or putting forth blossoms; the mode of development and arrangement of flowers on an axis.

lanceolate - shaped like a lance; broadest toward the base and narrowed to the apex, several times longer than wide.

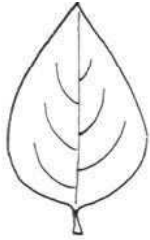


ocrea - a tube-like covering around some stems, especially of plants of the Polygonaceae.

opposite - leaves or bracts occurring two at a node on opposite sides of the stem.

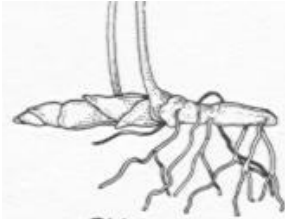
opposite

Glossary



ovate

ovate - egg-shaped and attached by the broader end.



rhizome

peltate - shield-shaped, leaves that are shaped like a shield and attached to the stem at the center or by some point distinctly within the margin, and having the petiole inserted into the undersurface of the lamina not far from the center.

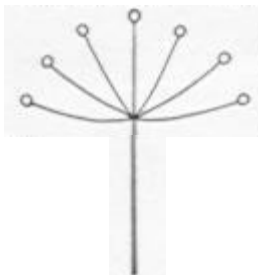
rhizome - a subterranean horizontal root-like stem sending out leaves and shoots from its upper surface and roots from its lower surface.



spike

spike - a long flower cluster attached directly to the stalk.

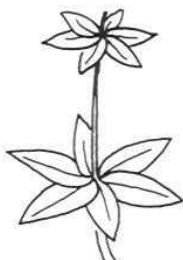
spikelet - a subdivision of a spike; as the spikelets of grasses.



umbel

submersed plants - plants growing with their root, stems, and leaves completely under the surface of the water.

umbel - an arrangement of flowers springing from a common center and forming a flat or rounded cluster.



whorled

whorled - when three or more leaves are arranged at the same level on a stem, typical of such plants as hydrilla.

0

1

2

3

4

5

6