Emerging aquatic plants

By Stephen Futch, Kenneth Jones and David Hall

The emergent aquatic plants discussed in this article are frequently found in and around ditches, canals and ponds in or near citrus groves. These emergent aquatic weeds may need to be treated with herbicides to maintain adequate water flow in ditches and canals, thereby minimizing potential for grove flooding or elevated water tables that will impact citrus root growth.

Additional articles on floating and submersed aquatic weed species are planned for *Citrus Industry* magazine later this year.

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ALLIGATOR WEED

Alternanthera philoxeroides

Leaves: opposite, with a rim between the bases, margins smooth, elliptical, 2 to 5 inches long, and one quarter to three-quarters inch wide, lanced-shaped; tiny erect hairs are found in leaf axils and rims

Stem: round, hollow, often pinkish in color, roots at nodes, to 3 feet long

Flowers: white, in a solitary head on a long stalk, non-sexual parts of flower papery

Seeds: none produced in Florida; reproduction is vegetatively by fragmentation

Height: prostrate

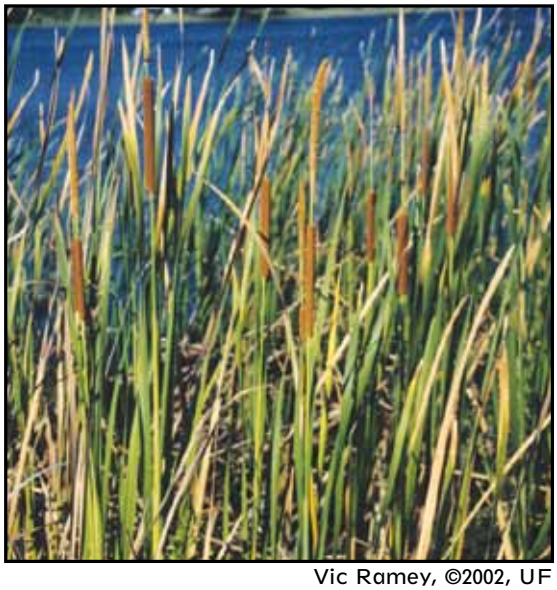
Life cycle: herbaceous perennial

Growth characteristics: forms dense interwoven mat, can be free floating or rooted in soil; flowering primarily April to October or all year in southern parts of Florida

Distribution: native to South America; throughout the entire southern United States; margins of ponds and lakes, streams, swamps, ditches, flooded fields

Origin: non-native

Comments: can be suppressed by alligator-weed flee beetle or alligator-weed stem-borer; grows primarily in fresh water, but can tolerate some salinity. During periods of low water, the weed can grow on muddy banks and other low areas.



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CATTAIL

Typha spp. (Typha domingensis, and T. latifolia)

Leaves: straplike, spongy, upper surface concave, lower surface slightly rounded, tip of blade nearly flat; base of the blade can reach 2.5 inches wide, gradually narrowing upward

Stem: extensive, fast-growing rhizomes

Flowers: unisexual, brown, extremely small in size forming a dense cigar-shaped spike that ranges from 6 inches to 1.7 feet long; the male section of the spike includes the stamens and is located above the female section of the spike containing the pistils; the section with the male flowers is usually narrower than the female section

Seeds: contained in sausage-shaped mass of clusters of nutlets surrounded by a protective casing; multitude of hairs around seeds enable long-distance dispersal by wind

Height: to 11 feet tall

Life cycle: perennial

Growth characteristics: flowering primarily January–June; spreads by seeds and fragmentation of rhizomes; grows rapidly

Distribution: native; *T. latifolia* – throughout North America; *T. domingensis* – Delaware west to Kansas and California, south into tropical America; shallow fresh and brackish waters of marshes, ditches, canals, retention ponds and lakes

Origin: non-native

Comments: common along shorelines; an aggressive invader of disturbed habitats with moist soils

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CUBAN BULRUSH, BURHEAD SEDGE

Oxycaryum cubense

(syn. Scirpus cubensis)

Leaves: all near the base and often longer than the stem

Stem: slender triangular stolons, to 2½ feet; upright shoots form along the stolons

Flowers: one to 13, stalked, spherical clusters one-quarter to one-half inch in diameter, surrounded by two to six or more modified leaves

Seeds: pale or red-brown nutlet about one-eighth inch long, base and edges covered with white bony material

Height: can reach 2½ feet

Life cycle: herbaceous perennial

Growth characteristics: flowers winter through spring in Florida; reproduces by seeds and vegetatively through rhizome growth

Distribution: probably a native of tropical America; Gulf Coast states from Florida to Texas; ponds, marshes, lakes, streams, flooded areas

Origin: non-native

Comments: can use other aquatic vegetation as a substrate to initiate raft-formation which sometimes become floating islands or mats

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MAIDENCANE

Panicum hemitomon

Leaves: 4 to 10 inches in length, one-quarter to one-half inch in width, leaf upper surface is rough and the lower surface is smooth; sheath is smooth to hairy

Stem: narrow, 1½ to 6 feet in height; roots at the nodes

Flowers: green, in narrow spikes, 4 inches to 1 foot long

Seeds: about one-sixteenth inch long; pale tan, narrowly football-shaped, smooth

Height: typically 1½ to 3 feet tall

Life cycle: herbaceous perennial

Growth characteristics: flowering mainly in the summer; rhizomes form large stands, reproduces by seeds and vegetatively by branching and rhizome fragments; grows in shallow water and will extend from the shoreline upward, can form extensive colonies in uplands especially when irrigated, often occurs in pure stands

Distribution: native; New Jersey to Florida and west to Texas

Origin: native

Comments: has extensive creeping rootstocks (rhizomes); normally in shallow waters, it can grow to 8 feet or more tall to keep pace with rising water

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MEXICAN PRIMROSE-WILLOW, LONG-FRUITED PRIMROSE-WILLOW

Ludwigia octovalvis

Leaves: alternate, stalkless; blades narrowly lance-shaped to somewhat football-shaped, 2 to 6 inches long and up to one-half inch wide, veins are prominent; soft hairs cover both sides of the leaves

Stem: erect, branched, entirely herbaceous or herbaceous upward and woody in the lower section

Flowers: petals yellow, heart-shaped

Seeds: light brown, shiny, nearly round, tiny; capsule several-angled, ribbed

Height: 3 to 4 feet northward and to 9 feet tall southward

Life cycle: herbaceous or woody perennial

Growth characteristics: flowering summer-fall northward, all year southward; reproduces from seeds

Distribution: native plant; pantropical; from North Carolina to Florida and into eastern Texas; marshes, ditches, margins of lakes, swamps

Origin: non-native

Comments: typically found along shores; extensive growth of populations impairs flood control, navigation and recreational uses, can crowd out native species

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PARAGRASS

Urochloa mutica

(syn. Brachiaria mutica)

Leaves: 4 to 13 inches in length, one-half inch wide; very fine, sparse, hairs on both leaf surfaces, or both surfaces can be smooth; a rim of hairs at the leaf collars

Stem: hairy at nodes, roots at lower nodes

Flowers: seed head 5 to 10 inches in length, with several alternate branches; with numerous spikelets about one-tenth inch in length

Seeds: about one-sixteenth inch long, tan, minutely ridged, somewhat rounded at tip, football-shaped

Height: usually 3 to 6 feet tall, or sometimes stems to 15 feet long and frequently leaning or creeping; stems can lodge upward on other vegetation and reach 8 to 10 feet

Life cycle: herbaceous perennial

Growth characteristics: flowering mostly spring-summer; reproduces primarily by seeds or by rapidly growing stolons; spreads horizontally into water, where it can form dense floating mats, and can even spread out many feet over paved surfaces

Distribution: native to Africa; from Florida to Texas in the United States; prefers moist soils and grows along ditch banks and shores

Origin: non-native

Comments: originally introduced as a forage grass

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PICKERELWEED

Pontederia cordata

Leaves: stalked, erect, in clusters, growing from rhizomes; stalk to 2 feet long, constricted just below blade; blade 2½ to 9 inches long and 2¾ to 4¾ inches wide, varying in shape from lance-shaped to rounded to heart-shaped

Stem: unbranched, hidden by leaves except when flowering, and, similar to the leaf stalk, constricted just below the first node

Flowers: in a terminal spike which can have several hundred violet-blue or white flowers with yellow markings; two-lipped with six petals and six stamens of two sizes; each open for only one day

Seeds: one-seeded, smooth; fruit ridged, dry

Height: usually about 3 feet or less, but can be 6 feet tall

Life cycle: herbaceous perennial

Growth characteristics: flowering mostly spring-summer; typically found growing vigorously in shallow water; reproduces primarily vegetatively by branching and fragmentation of rhizomes and less frequently from seeds

Distribution: native; eastern United States and into Canada; shallow waters of marshes, streams, ditches, lakes

Origin: native

Comments: can form extensive, almost pure stands

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SMARTWEED

Polygonum hydropiperoides

Leaves: alternate; stalkless or nearly so; a papery tube sheaths the stem above leaf bases; blade narrow and lance-shaped

Stem: swollen at nodes, usually branched, viney, rhizomes often present

Flowers: pinkish, greenish or white in spike-like clusters at or near stem tip

Seeds: shiny, black or brown, three-angled nutlet, one-eighth inch long

Height: mostly 2 feet tall or less; plants can climb over old stems accumulated in wetlands reaching 4 feet or so

Life cycle: herbaceous perennial

Growth characteristics: flowering spring-fall; sprawling habit; reproduces by seeds, rooting from the nodes, and by rhizome fragmentation; can quickly cover open wet soils

Distribution: native; throughout most of the United States; found in shallow water of swamps, marshes, ditches, ponds and floodplains

Origin: native

Comments: typically forms thick, dense populations

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TORPEDO GRASS

Panicum repens

Leaves: blades flat or folded, one-quarter inch wide and 2 to 10 inches long, with very fine hairs on upper surface; leaf sheath is sparsely hairy

Stem: rigid, can reach many feet in length; with long rhizomes; rhizome tips are very sharp-pointed and torpedo-like (from which it gets its common name).

Flowers: whitish, small, stalked; in a terminal, open, branched seed head; seed head usually 2 to 4 inches long

Seeds: shaped like a football, smooth, shiny, with rounded ends, about one-eighth inch long

Height: mostly 8 inches to 1 foot tall, but can reach 3 feet, erect or leaning

Life cycle: herbaceous perennial

Growth characteristics: flowering mostly May–October; reproduces readily vegetatively and by seeds; may extend over open water, commonly forming large floating mats; can grow in almost any soil; requires moisture for germination; expands rapidly with irrigation or abundant rain

Distribution: native in tropical and subtropical areas of the world, probably introduced into the United States; common in Gulf Coast states from Florida to Texas; ponds, lakes and ditches

Origin: non-native

Comments: terribly invasive, easily crowds out native species

WATER PASPALUM

Paspalum repens
(syn. Paspalum fluitans)

Leaves: sheaths loose, with stiff, coarse hairs, often spongy; blades flat, 4 to 10 inches long and 1 inch wide or less

Stem: sprawling, spongy, rooting at the joints, often elongated, can reach nearly 2 feet in length

Flowers: greenish, hairy, clustered on the underside of the branches, about one-sixteenth inch long

Seed head: 3.5 to 8 inches long; with 20 to 70 winged branches, one-half to 4 inches long

Height: tips erect, usually less than 16 inches tall

Life cycle: herbaceous annual

Growth characteristics: flowering usually May–November; rapid growth; stems often submersed

Distribution: native plant; common West Virginia to Florida to Kansas and Texas; margins of lakes, ponds, ditches, streams, marshes and swamps

Origin: native

Comments: can form thick extensive mats impeding flood control, navigation and recreational activities

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WATER PENNYWORT

Hydrocotyle spp. (Hydrocotyle umbellata, H. bonariensis and H. verticillata)

Leaves: alternate; blades shiny green, blunt-toothed, almost round; stalks attached near the middle underneath the blade; although normally only an inch or two on land, stalks can be up to 1 foot or more long in deeper water

Stem: horizontally spreading, can be above or below ground, or floating

Flowers: small, white to greenish white, at the upper end of the flower spike, on individual whorled stalks (*umbellata* and *bonariensis*) or lacking stalks (*verticillata*), stalks simple *H. umbellata*, stalked branched *H. bonariensis*, no stalks *H. verticillata*

Seeds: paired nutlets, approximately one-sixteenth to one-eighth inch long, ribbed or ridged

Height: in shallow water or on land less than an inch to several inches tall; in deeper water, can be over a foot

Life cycle: herbaceous perennial

Growth characteristics: flowering March–July; reproduces by seeds and vegetatively by fragmentation of the stem

Distribution: native; *H. bonariensis* – outer Coastal Plain, west from North Carolina into Texas; *H. umbellata* – Nova Scotia and Minnesota south into Texas; *H. verticillata* – Coastal Plain and Piedmont, Massachusetts west into California; all three range south from Texas into South America; ponds, ditches, lakes, seeps, marshes, prairies, streams, frequent in lawns, gardens and flower beds

Origin: native

Comments: grows from the shoreline and progresses outward into open water; floating mats can break off from shoreline plants; all three species can grow together in mixed populations; can become weedy in many irrigated situations; grows best during cooler seasons of the year

Stacia Hetrick, UF/IFAS Osceola County Extension, 2009

WEST INDIAN MARSH GRASS

Hymenachne amplexicaulis

Leaves: blades flat, to 14 inches long and 1½ inches wide, base heart-shaped and clasping the stem

Stem: floating and creeping with ascending tips, spongy, rooting at the lower nodes

Flowers: seed head spike-like, dense, occasionally lobed at the base, about one-quarter inch wide and to 20 inches long; individual flowers small and rough with stiff hairs

Seeds: very narrow, about one-eighth inch long, tip sharply pointed

Height: 2 to 5 feet tall

Life cycle: herbaceous perennial

Growth characteristics: flowering in fall; reproduces by seeds and stem fragmentation; can quickly and completely cover wet pastures

Distribution: probably native to the West Indies; West Indies, tropics of Central and South America; central and south peninsula Florida; low wet pastures, marshes, river banks, wet ditches and other seasonally flooded habitats

Origin: non-native

Comments: adapted to fluctuating water levels, can survive extensive periods of drought

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WILD TARO

Colocasia esculenta

Leaves: all basal; stalks attached near the middle of the blade, to 4 feet long, with a purplish band at tip; blades large, heart-shaped, stiff, to 3 feet long and 1½ feet wide, upper surface dark green, velvety

Stem: a bulb covered with leafy scales producing a short, thick, vertical shoot

Flowers: enclosed in a sheath, sheath base green, sheath tip expanded and yellowish; flowers small, densely crowed on a finger-like cluster; female flowers are near the base and male flowers are grouped above, tip sterile with no flowers

Seeds: fruit a small berry, several seeds per berry

Height: 1.5 to 5 feet tall

Life cycle: herbaceous perennial

Growth characteristics: flowering January–August; reproduces via seeds and primarily from rhizomatous offshoots of the corm

Distribution: native of tropical Asia, now pantropical and ranging into the subtropics; Georgia west into Texas; throughout Florida; grows in a wide range of dry to wet habitats, can form dense growth along shore displacing native vegetation

Origin: non-native

Comments: it is grown for food and ornament; food must be properly prepared as the plant is poisonous; an astounding number of color variations have been developed as it is an extremely popular ornamental plant

SELECTED SOURCES

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