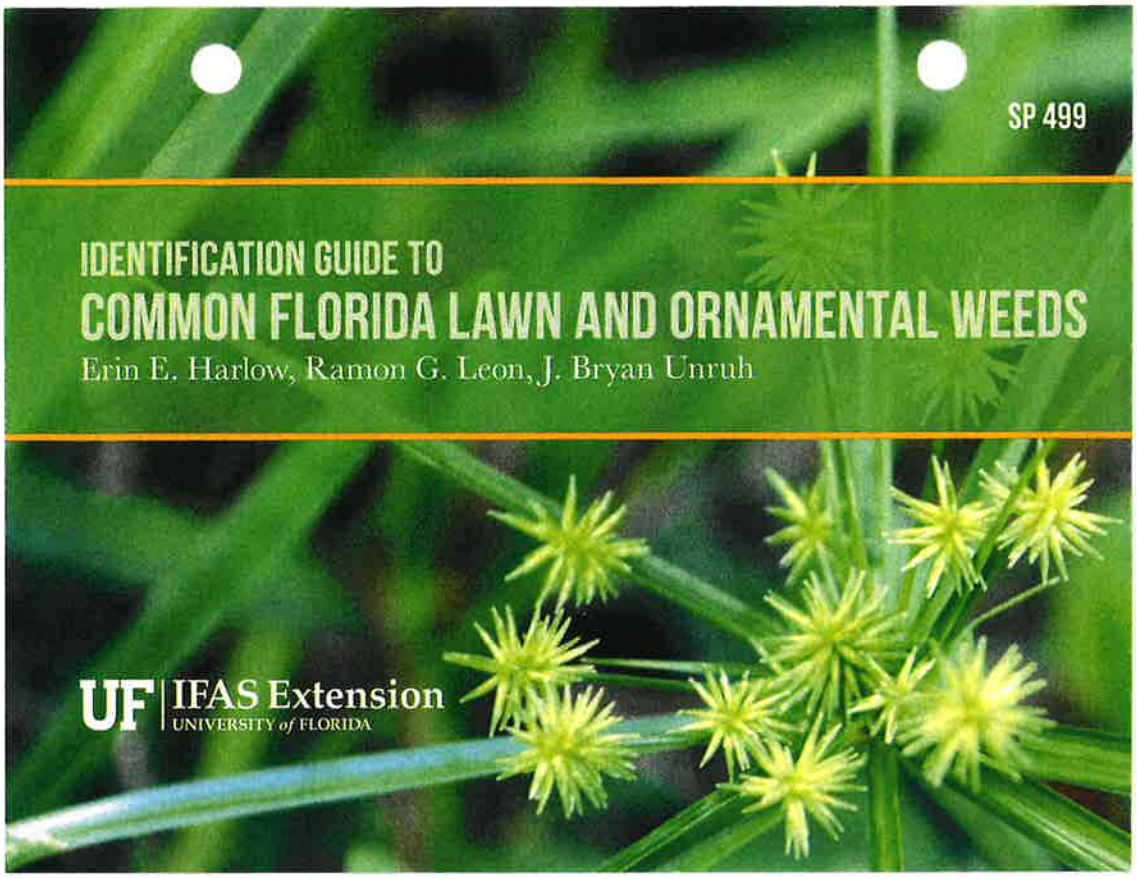


LIFE CYCLES

ANNUAL WEEDS

Annual weeds germinate, produce seed, and die in one growing season and are classified as either winter or summer annuals. Summer annual weeds germinate in the springtime, usually beginning sometime in February or March. Germination depends on the type of plant and soil temperature. The seeds of most summer annual weeds require soil temperatures above 55°F to germinate. Examples of summer annual weeds include

Spreading Dayflower

chamberbitter, crabgrass, goosegrass, and spreading dayflower. Winter annual weeds germinate in the fall, usually when soil temperatures fluctuate between 40°F and 60°F, and they live until the springtime. Examples of winter annual weeds include Carolina geranium, henbit, chickweed, and cutleaf evening primrose.

Cutleaf Evening Primrose

BIENNIAL WEEDS

A weed that completes its life cycle in two growing seasons is classified as a biennial. The first year the plant grows leaves and roots, often forming a rosette. The second year it begins to reproduce by producing flowers and sets seed before it completes its life cycle. Examples of biennial weeds include types of cudweed and thistles.

Cudweed

PERENNIAL WEEDS

Perennial weeds require three or more years to complete their life cycle. Many have specialized stems, such as rhizomes, stolons, bulbs, or corms, where energy is stored. Creeping perennials use rhizomes or modified stems that grow below the soil surface, or stolons that grow above the soil surface, to creep and reproduce. Examples of perennial weeds include Florida betony, yellow nutsedge, wild garlic, and bermudagrass.

Florida Betony

Yellow Nutsedge

Bermudagrass

CLASSIFICATION

BROADLEAF WEEDS

Broadleaf weeds are dicotyledonous (having two seed leaves), and they generally have tap roots, net-like veins and showy flowers. Examples of broadleaf weeds that commonly occur in Florida include chickweed, henbit, and dollarweed.

Chickweed

Dollarweed

GRASSES

Grasses are monocotyledonous (having one seed leaf) and include plants such as sandspurs, torpedograss, goosegrass, and crabgrass. Grasses have leaves that are longer than they are wide, with parallel veins and fibrous root systems. Many will root at the nodes.

Goosegrass

Bermudagrass

SEDGES

Sedges are known for having solid, triangular stems and dark green, shiny leaves. Examples of sedges most commonly found in the landscape include purple nutsedge, yellow nutsedge and globe sedge. Generally, the flower is on a stalk that originates from the center of the plant.

Globe Sedge

Purple Nutsedge

HERBICIDE TYPES

SELECTIVE

Selective herbicides can be used as over-the-top applications because they control only certain types of weeds without seriously affecting other plant species. For example, some selective products control only broadleaf weeds; they do not seriously harm grasses and are used in turf applications. Examples of selective herbicides include 2,4-D; bentazon; fluazifop; pendimethalin; prodiamine; and oryzalin.

NONSELECTIVE

Nonselective herbicides control all weed and plant species that they are applied to. These products are recommended for renovation projects, over hardscapes, and for some spot treatments. Glyphosate, glufosinate, and diquat are examples of nonselective herbicides.

CONTACT

Contact products only affect the portions of the plant tissues they touch and do not move through the plant's vascular system. They will not kill root systems or parts of the plant that are underground. Repeat applications are usually necessary with these products. Examples of contact herbicides include bentazon, glufosinate, and diquat.

SYSTEMIC

Systemic herbicides move throughout the plant's vascular system, which means they will enter into the root and stem systems. These products are typically used for perennial weeds, are slower acting, and will kill the plant over several days. Examples of systemic herbicides include glyphosate; 2,4-D; and fluazifop.

HERBICIDE OPTIONS BASED ON TIMING

PREEMERGENCE

Preemergence herbicides prevent root or shoot development from the newly emerging plant. It is important to understand weed life cycles when using a preemergence herbicide, because the product has to be in place before the seed germinates, otherwise little to no control is achieved. A preemergence herbicide normally requires watering after application to form a barrier at the soil surface. If the barrier is disturbed, the preemergence herbicide is less likely to be effective. Preemergence herbicides should be used with caution in areas where seed will be used, either in beds or turf, for two to four months after application. Examples of preemergence herbicides include pendimethalin, prodiamine, and oryzalin.

POSTEMERGENCE

Postemergence herbicide products work on actively growing weeds. Typically, the treated plant should be young and vegetative for the herbicide to be most effective. The more mature the plant is, the higher the rate of product will be needed. If plants are under drought or cold stress, are producing seeds, or are mowed before the product has time to work (several days) it is likely to be less effective. To increase chances for an effective application, it is best to apply postemergence herbicides during warm temperatures and when adequate soil moisture is present. Examples of postemergence herbicides include glyphosate; glufosinate; 2,4-D; fluazifop; diquat; bentazon; and pelargonic acid.

Herbicide	Selective	Non-selective	Contact	Systemic	Pre-emergence	Post-emergence
Glyphosate		X		X		X
Glufosinate		X	X			X
2, 4-D	X			X		X
Pelargonic acid		X	X			X
Bentazon	X		X			X
Fluazifop	X			X		X
Diquat		X	X			X
Pendime-thalin	X		X		X	
Prodiamine	X		X		X	
Oryzalin	X		X		X	

Table 1. Common lawn and ornamental weed herbicides and their characteristics.

BERMUDAGRASS

SCIENTIFIC NAME
Cynodon spp.

CLASSIFICATION

Grass

P

Perennial

GROWTH HABIT
creeping, rooting at nodes

Bermudagrass is a medium- to fine-textured warm-season grass that is planted and managed as turf, but can become a weed. It spreads by rhizomes and stolons, which make it a very resilient plant. Bermudagrass can be identified by its hairy ligule, folded leaf vernation and a sharp leaf tip. The seedhead has three to five spikes that arise from a main stalk.

SEEDHEAD

CRABGRASS

SCIENTIFIC NAME
Digitaria spp.

CLASSIFICATION

Grass

Summer Annual

GROWTH HABIT
spreading, prostrate

Five species of crabgrass are common in Florida: India, blanket, southern, tropical and smooth crabgrass. Leaf blades vary in size from 1 inch to over 2 inches long. Depending on the species, the blades and sheaths may be hairy or smooth. Crabgrass is generally considered a summer annual and germinates at soil temperatures of 50°F to 55°F or greater. Most will root at the nodes, and leaves have a prominent midvein. The seedheads are on long stalks that have one to two whorls of spikelets at the end.

SEEDHEAD

GOOSEGRASS

SCIENTIFIC NAME
Eleusine indica

CLASSIFICATION

Grass

Summer Annual

GROWTH HABIT
upright, clumping

Goosegrass is a summer annual grass that germinates when soil temperatures reach 63°F to 65°F. It is recognized by the silvery-whitish center of the dark green foliage. It has a smooth leaf blade, but occasionally a few hairs can be found near the base of the blade. Seedhead spikelets form in two rows on 2 to 13 "fingers". Many times, a single finger will form below the large cluster.

SEEDHEAD

SANDSPUR OR SANDBUR

SCIENTIFIC NAME
Cenchrus echinatus

CLASSIFICATION

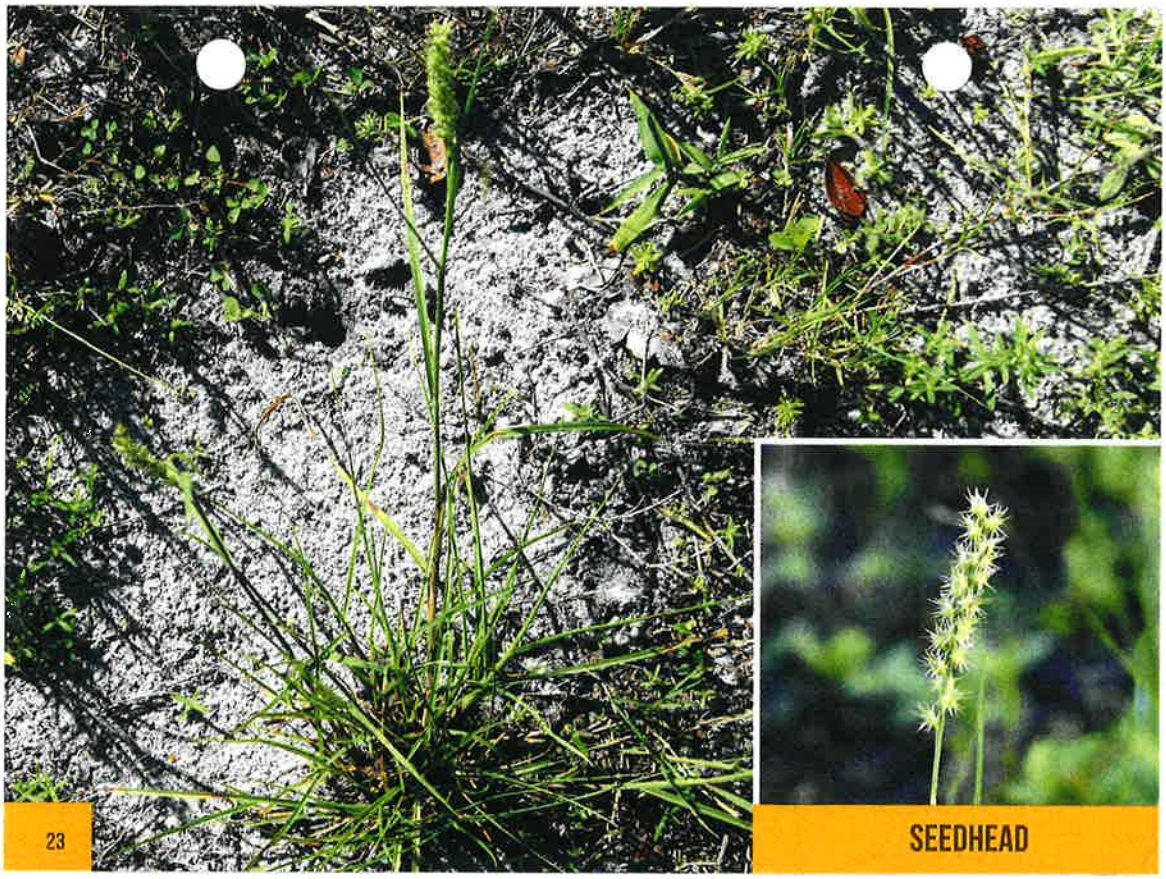
Grass

SA

Summer Annual

GROWTH HABIT
tufted with some stems rooting at the nodes

Sandspur has a tufted or clumping growth habit. The stems are often a reddish color at the base. The long leaves have a sandpaper feel because of short, thick hairs on the upper blade. There are long hairs present at the collar where the leaf connects to the stem. The seedhead has spiny burs directly attached to the end of a stalk.



SEEDHEAD

TORPEDOGRASS

SCIENTIFIC NAME
Panicum repens

CLASSIFICATION

Grass

P

Perennial

GROWTH HABIT
creeping, upright

Torpedograss is a creeping perennial that has sharply-pointed, spreading rhizomes that are white in color. The leaf blades are sparsely hairy on the top and have pointy tips. The stems can grow upward reaching 4 to 5 feet if left unchecked. Seedheads may be present on more mature specimens, although the seeds are not usually viable in Florida and the plant mainly propagates by rhizomes.

RHIZOMES

SEDGES

GLOBE SEDGE

SCIENTIFIC NAME
Cyperus globulosus

CLASSIFICATION

Sedge

P

Perennial

GROWTH HABIT
upright

Globe sedge is a perennial weed that reproduces by seed and has an upright growth habit. The plant grows in a clump or tuft with leaves that are a shiny, bright green. The seedhead is raised on a stiff stalk with flower clusters at the end, resembling a spiky globe. There is a series of leaves at the base of the seedhead.

SIDE VIEW

PURPLE NUTSEDGE

SCIENTIFIC NAME
Cyperus rotundus

CLASSIFICATION

Sedge

P

Perennial

GROWTH HABIT
upright

Purple nutsedge has large, whitish-to-purple leaves with a triangular stem. The plant produces underground runners (rhizomes) that form tubers connecting the plants in chains. The seedhead is a purple-reddish color with 5 to 12 leaves coming out of the base of the seedhead. The flowers are oblong in shape with small spikes on stalks. The tip of the leaf is boat-shaped, which can help distinguish it from yellow nutsedge.

RHIZOMES

YELLOW NUTSEDGE

SCIENTIFIC NAME
Cyperus esculentus

CLASSIFICATION

Sedge

P

Perennial

GROWTH HABIT
upright

Yellow nutsedge is an upright perennial that has a triangular stem and bright leaves. The plant forms underground runners that end at tubers, but unlike purple nutsedge they do not connect plants. The leaf blade progressively narrows towards the tip, as compared to the thicker tip of the purple nutsedge. The flowers are yellow to brown in color and form at the end of a stiff stalk. The leaves are usually longer than the flower stalks.

SEEDHEAD


BROADLEAVES

BLACK MEDIC

SCIENTIFIC NAME
Medicago lupulina

CLASSIFICATION

Broadleaf

Winter Annual

GROWTH HABIT
prostrate, spreading

Black medic is a winter annual that has spreading, prostrate growth and a taproot. The leaves are alternate on the stem with each leaf having three leaflets. Each leaflet is elliptic in shape, toothed near the tip with a small spur at the end. It has yellow flowers that form in clusters at the end of each branch. Each flower cluster can have between 10 and 50 individual flowers, which turn into a black seed pod.

LEAVES

FLOWER

CAROLINA GERANIUM

SCIENTIFIC NAME
Geranium carolinianum

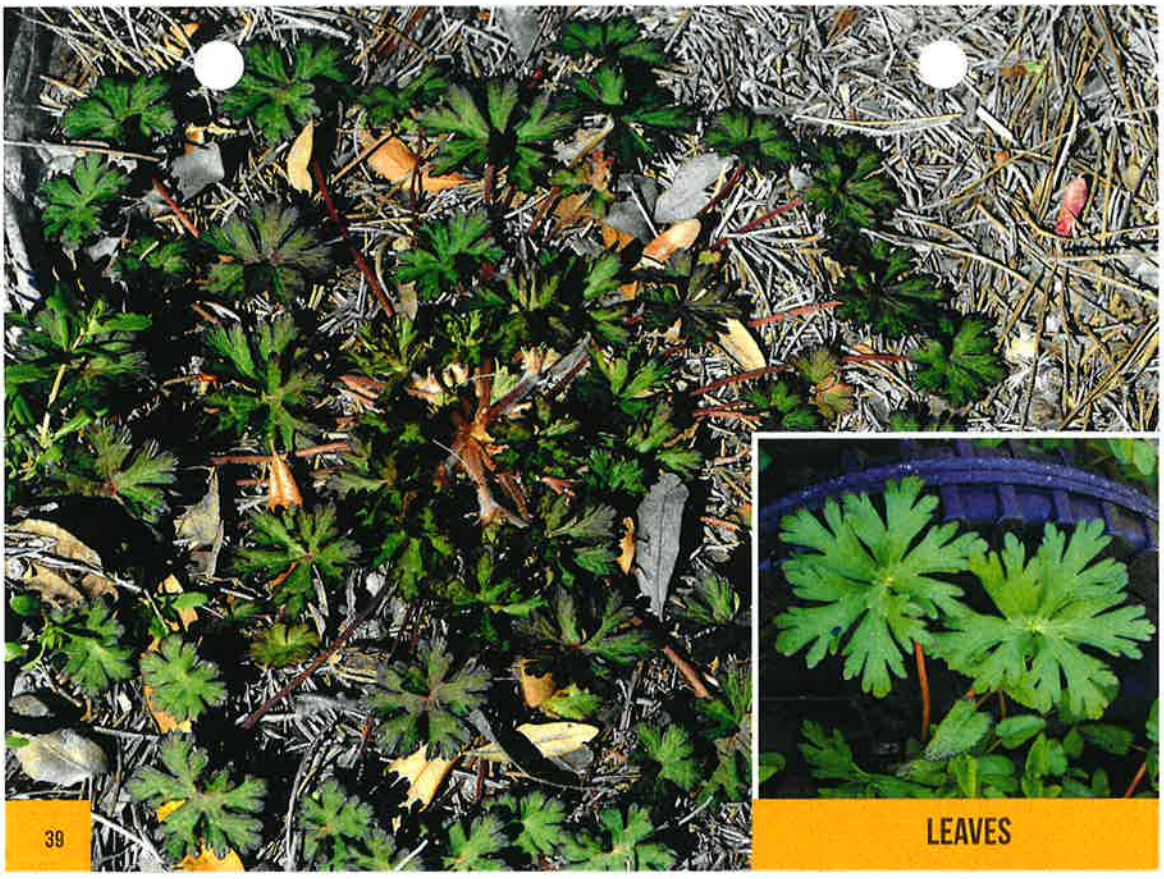
CLASSIFICATION

Broadleaf

Winter Annual

GROWTH HABIT
semi-erect, rosette

Carolina geranium is a winter annual that reproduces by seed. The stems are a greenish-pink to red color, and the leaves may be opposite or alternate, but they usually form a rosette. The leaves are deeply toothed and not sharp, and the petioles vary in length. Flowers arise in pairs or clusters and are subtle pink to purple with five petals. The seed is a capsule-like structure with each flower producing five seeds. When the seeds are mature, the seedhead pops open and disperses the seeds a considerable distance.



LEAVES

CHAMBERBITTER

SCIENTIFIC NAME
Phyllanthus urinaria

CLASSIFICATION

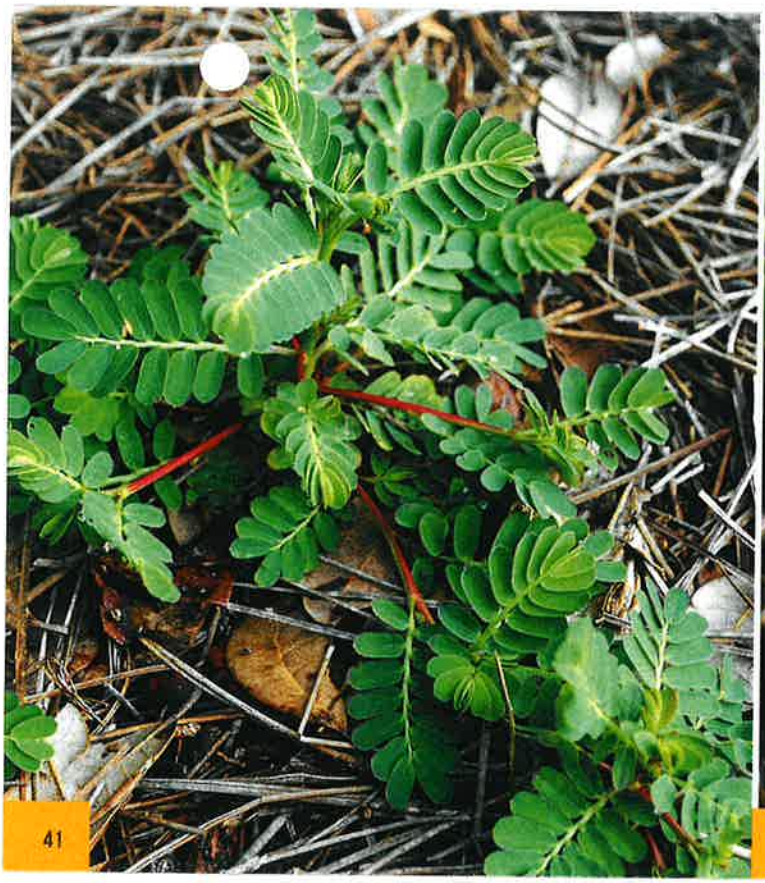
Broadleaf

A

Summer Annual

GROWTH HABIT
upright, woody stem

This aggressive summer annual has a reddish stalk and bears its seed directly on the midrib of the leaves. It has a deep taproot and can grow in full sun or shade. The leaves are alternately arranged on branchlets, are oval and have a smooth leaf margin. The flowers are small and white, located on the underside of the leaflets. This plant can become woody if it is continuously mowed.



FLOWERS AND SEEDS

CHICKWEED

SCIENTIFIC NAME
Stellaria media

CLASSIFICATION

Broadleaf

WA

Winter Annual

GROWTH HABIT
mat-forming

Chickweed is a mat-forming winter annual that reproduces by seed. The flowers are white and have deeply notched petals that form at the end of the stem. The leaves are small and elliptical in shape, and are opposite and smooth. The leaves at the end of the stems are directly connected to the stem, while the leaves toward the bottom of the plant are on long, sparsely hairy petioles.

CUTLEAF EVENING PRIMROSE

SCIENTIFIC NAME
Oenothera laciniata

CLASSIFICATION

Broadleaf

Winter Annual

GROWTH HABIT
low growing

Cutleaf evening primrose begins as a rosette and then quickly sends out hairy stems. It has lance-shaped leaves that are deeply notched and hairy on the upper surface. Once the reddish stems are formed, the leaves are alternate. A single 4-petal yellow or red flower is found on the end of the long stem. Seeds are capsules that are located just below the flower. Once the flower falls off, the capsules will open, releasing many small seeds.

FLOWERS

DICHONDRA

SCIENTIFIC NAME
Dichondra carolinensis

CLASSIFICATION

Broadleaf

P

Creeping Perennial

GROWTH HABIT
creeping, rooting at nodes

Dichondra is a creeping perennial that has small round or kidney-shaped leaves. Another common name of dichondra is 'ponyfoot', because the leaves resemble the shape of a pony's hoof. Leaves are alternate and sparsely hairy. The flowers are white, but frequently not noticeable. The modified stem is a stolon that grows at the surface of the ground and aids the creeping habit of this plant.

DOLLARWEED

SCIENTIFIC NAME
Hydrocotyle spp.

CLASSIFICATION

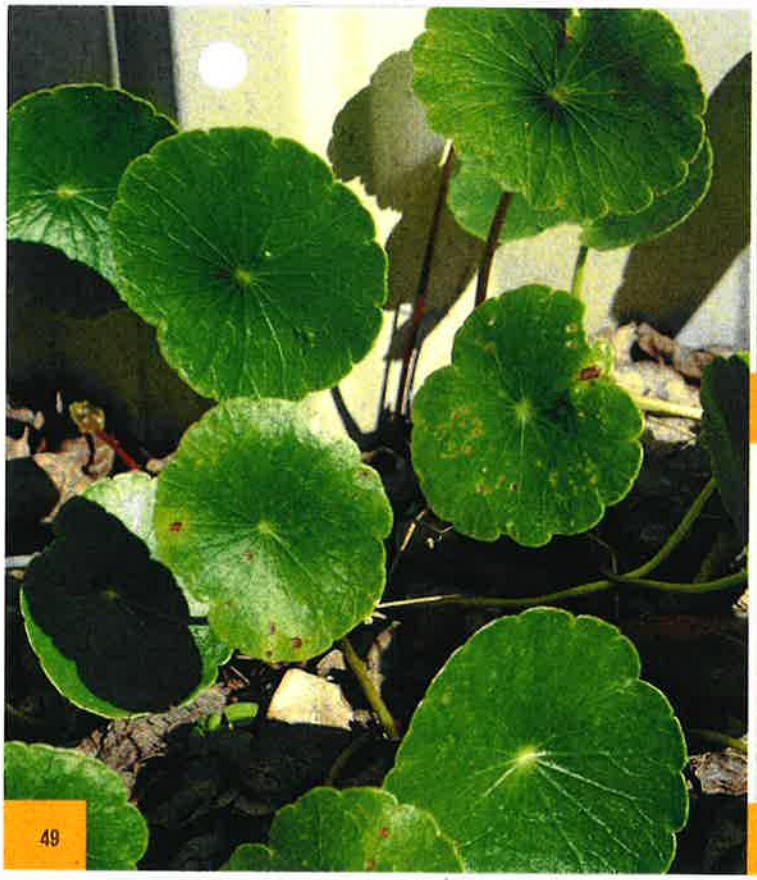
Broadleaf

P

Perennial

GROWTH HABIT
creeping

Dollarweed, sometimes called pennywort, is a perennial broadleaf weed. There are several species of dollarweed found in Florida. In urban landscapes, it reproduces mainly from underground rhizomes and sometimes from seed and tubers. It has a bright, shiny, flat leaf that is round with scalloped edges. The petiole is attached to the bottom of the leaf towards the center, not on the edge, which makes it distinguishable from dichondra. Each flower consists of lots of small, 5-petaled flowers that form one large umbrella-shaped flower (umbel) and are white in color.



RHIZOMES

LEAF PETIOLE

DOVEWEED

SCIENTIFIC NAME
Murdannia nudiflora

CLASSIFICATION

Broadleaf

A

Summer Annual

GROWTH HABIT
creeping

Doveweed is a fleshy, creeping summer annual that resembles a grass. It will root at the nodes and can form a dense mat. Leaves are alternately arranged and lance-shaped. Flowers are bluish purple and form at the end of stems in open clusters. This plant prefers moist-to-wet areas and grows vigorously between June and August.

FLORIDA BETONY

SCIENTIFIC NAME
Stachys floridana

CLASSIFICATION

Broadleaf

P

Perennial

GROWTH HABIT
upright with fleshy tubers

This Florida native is a perennial broadleaf. The underground stems form whitish tubers that are segmented and resemble a rattlesnake's rattle, giving this plant its other common name, rattlesnake weed. Plants are connected by thin, white underground runners where the tubers are produced. The plant has upright, square stems with toothed, opposite leaves. Flowers are white to pink in color and form seeds that have four nutlets.

UNDERGROUND TUBER

LEAVES AND FLOWERS

FLORIDA PUSLEY

SCIENTIFIC NAME
Richardia scabra

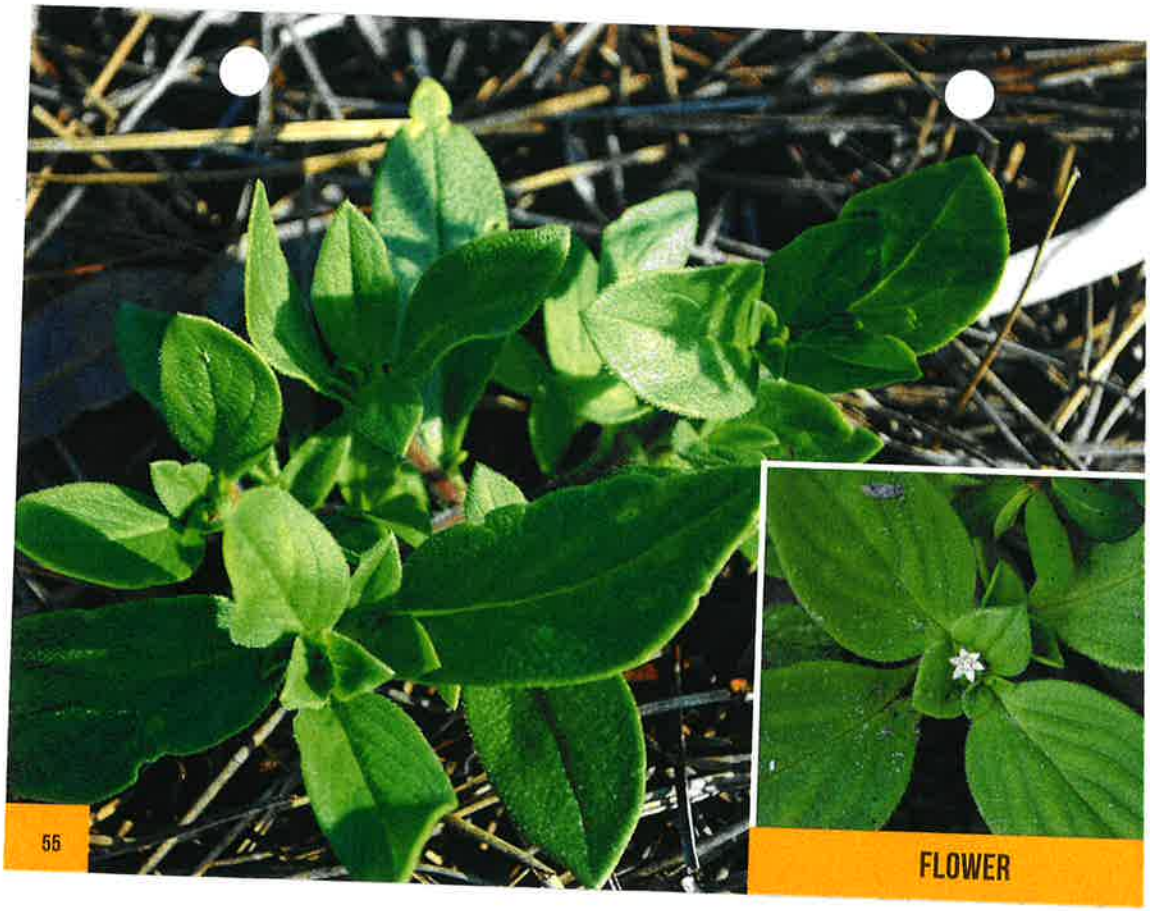
CLASSIFICATION

Broadleaf

Summer Annual

GROWTH HABIT
erect to prostrate

Florida pusley is a summer annual that has loosely branching stems. The stems are square, hairy and do not root. Leaves are opposite and oval in shape, can range from smooth with hairs on the edge to rough on both sides. The flowers are small, white, star-shaped, and form in clusters at the end of the bud.



FLOWER

HENBIT

SCIENTIFIC NAME
Lamium amplexicaule

CLASSIFICATION

Broadleaf

Winter Annual

GROWTH HABIT
upright, spreading

Henbit is a winter annual broadleaf. The upper leaves lack petioles and are directly attached to the stem, which is purplish green, tender and four-sided. Leaves are opposite with toothed margins that are not sharp. The veins are most noticeable on the underside of the leaves. Flowers are located up and down the stem and are a purplish-red color. The petals have darker spots toward the bottom and are arranged in whorls.

LEAVES AND FLOWERS

SPREADING DAYFLOWER

SCIENTIFIC NAME
Commelina diffusa

CLASSIFICATION

Broadleaf

SA

Summer Annual

GROWTH HABIT
prostrate, succulent, roots at nodes

Spreading dayflower is a summer annual broadleaf weed that reproduces by seed or stem fragments. The leaves are lance-shaped with the bottom of the leaf wrapping around the stem (closed sheath). The flowers are blue in color and have three petals.

LEAVES AND FLOWER

SPURGE

SCIENTIFIC NAME
Chamaesyce spp.

CLASSIFICATION

Broadleaf

A

Summer Annual

GROWTH HABIT
prostrate, does not root at nodes

Spurge is a summer annual broadleaf. Several species are found in Florida, including the roundleaf, sand-dune, garden, hyssop, and spotted. All spurges have a milky sap when the stem is broken. The leaves are opposite, round, and usually not symmetrical.

C. MACULATA

C. HYSSOPIFOLIA