

Sources of Control Information

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- California Exotic Plant Pest Council: www.caleppc.org
- Florida Exotic Plant Pest Council: www.fleppc.org
- Southeast Exotic Plant Pest Council: www.se-eppc.org
- Southern Weed Science Society: www.weedscience.msstate.edu/swss
- The Nature Conservancy's Invasive Species Team's Control Methods Handbook, Tu, M.; Hurd, C.; Randall, J.M. 2001 <http://tncweeds.ucdavis.edu/handbook.html>
- USDA Animal and Plant Health Inspection Service's Federal Noxious Weed Program: www.aphis.usda.gov/ppq/weeds
- USDA, Forest Service, Southern Research Station: www.srs.fs.fed.us or www.srs.fs.usda.gov
- USDA Natural Resources Conservation Service's National Noxious Weed Program: <http://dogwood.itc.nrcs.usda.gov:90/Weeds>

Sources of Native Plants

USDA Natural Resources Conservation Service's Plant Materials Program: <http://plant-materials.nrcs.usda.gov/>

Glossary of Important Terms

acute tip: terminating in a sharp or well-defined point, with more or less straight sides.

allelopathic: referring to a plant known to emit chemicals that retard the growth or seed germination of associated plants.

alternate leaves: one leaf at each node and alternating on sides of the stem.

alternately whorled leaves: one leaf at each node and their points of attachment forming a spiral up the stem.

annual: a plant that germinates, flowers, produces seed, and dies within one growing season.

anthers: the pollen-producing portion of the stamen or male reproductive part of a flower.

appressed: lying close to or flattened against.

arbor: vine entanglement within the crowns of shrubs or trees.

ascending: tending to grow upward, slightly leaning to somewhat erect.

asymmetric: not identical on both sides of a central line.

axil: the angle formed between two structures, such as between a leaf and the stem.

axillary: located in an axil or angle.

berry: a fleshy or pulpy fruit from a single ovary with one to many embedded seeds, such as tomato and grape.

biennial: a plant that lives for about 2 years, typically forming a basal rosette in the first year, flowering and fruiting in the second year, and then dying.

bipinnately compound: twice pinnately compound; a pinnately compound leaf being again divided.

blade: the expanded part of a leaf.

bract: a small leaf or leaflike structure at the base of a flower, inflorescence, or fruit.

branch scar: a characteristic marking on a stem where there was once a branch.

bud: an undeveloped flower, flower cluster, stem, or branch, often enclosed by reduced or specialized leaves termed bud-scales.

bulbil: an aerial tuber.

bunch grass: a grass species with a cluster-forming growth habit; a grass growing in an upright large tuft.

bundle scar: tiny raised area(s) within a leaf scar, from the broken ends of the vascular bundles, found along a twig.

calyx: the collective term for all of the sepals of a flower, commonly green, but occasionally colored and petal-like or reduced to absent.

calyx tube: a tubelike structure formed by wholly or partially fused sepals.

cane: very tall grasses, for example, switchcane and bamboo; tall, stiff stem.

capsule: a dry fruit that splits into two or more parts at maturity, for example, the fruit of tallowtree.

clasping: base that partly or wholly surrounds another structure, such as a leaf base surrounding a stem.

collar: the area of a grass leaf blade where it attaches to the sheath.

colony: a stand or group of one species of plant, from seed origin or those connected by underground structures such as rhizomes.

cordate: heart-shaped.

cordate base: a leaf base resembling the double-curved top of a heart shape.

corolla: the collective name of all of the petals of a flower.

cotyledon: the initial leaves on a plant germinant.

crenate: margin with shallow, rounded teeth; scalloped.

cultivar: a form or variety of plant originating under cultivation.

deciduous: falling off or shedding; not persistent; refers to leaves, bracts, stipules, and stipels.

dioecous: plants with unisexual flowers and having male and female flowers on separate plants.

drupe: a fleshy fruit, surrounding a stone (endocarp) that contains a single seed.

ellipsoid: a three-dimensional ellipse; narrow or narrowly rounded at ends and widest in the middle.

elliptic: oval-shaped; broadest at the middle and rounded and narrower at the two equal ends.

entire: margins without teeth, notches, or lobes.

even pinnately compound: a leaf with two or more leaflets arranged opposite along a leafstalk or rachis.

evergreen: green leaves remaining present through winter.

exotic: foreign; originating on a continent other than North America.

fern: a broadleaf pteridophyte of the order Filicales, typically with much-divided leaves and spore reproduction.

filament: the long, slender stalk of a stamen that supports the anther.

forb: a broad-leaved herbaceous (nonwoody) plant.

frond: a large, once- or twice-divided leaf, here referring to fern leaves.

gland: a structure which contains or secretes a sticky, shiny, or oily substance.

grain: a grass seed.

grass: plants of the family Poaceae, typically with narrow leaves and jointed stems.

hairy: surface features of plants, many protruding filaments or glands that give texture; pubescent.

herb or herbaceous: a plant with no persistent aboveground woody stem, dying back to ground level at the end of the growing season.

hip fruit: the fruit of the genus *Rosa* that is ovoid, fleshy, and usually red when ripe.

husk: the outer scalelike coverings of a grass seed.

inflorescence: the flowering portion of a plant; the flower cluster; the arrangement of flowers on the stem.

internode: the space on an herb or grass stem between points of leaf attachment.

lanceolate: lance-shaped; widest at or near the base and tapering to the apex.

lateral: on or at the sides, as opposed to terminal or basal.

leaflet: an individual or single division of a compound leaf.

leaf scar: the scar or marking left on a twig after leaf fall.

leafstalk: the main stem of a compound leaf, rachis.

legume: a plant in the family Fabaceae; a dry, splitting fruit, one-to-many seeded, derived from a single carpel and usually opening along two sutures, confined to the Fabaceae.

legume pod: the fruit of a legume.

lenticel: a raised dot or short line, usually corky to white in color, on twigs and stems.

ligule: a tiny membranous projection, often fringed with hairs, from the summit of the sheath (top of the throat), where the leaf attaches, in many grasses and some sedges.

linear: long and narrow shaped with roughly parallel sides.

lobed leaf: margins having deep indentations resulting in rounded-to-pointed portions.

margin: the edge of a leaf blade or flower petal; the edge of a forest.

marsh: a poorly drained portion of the landscape with shallow standing water most of the year, most extensive around intertidal zones.

membranous: thin, filmy, and semitransparent.

midvein: the central vein of a leaf or leaflet.

milky sap: sap being opaque white and often of a thick consistency.

monocot: the class of plants having one cotyledon (or monocotyledonous) and parallel leaf veins, including grasses, sedges, lilies, and orchids.

mottled: spotted or blotched in color.

node: the point of leaf or stem attachment, sometimes swollen on grass stems where the sheath is attached.

nutlet: a small, dry, nonsplitting fruit with a woody cover, usually containing a single seed.

oblanceolate: lance-shaped with the widest portion terminal; inversely lanceolate.

oblong: a shape two-to-four times longer than wide with nearly parallel sides.

obovate: two-dimensional egg-shaped, with the attachment at the narrow end; inverted ovate.

odd pinnately compound: pinnately compound leaves with a terminal leaflet rather than a terminal pair of leaflets or a terminal tendril.

opposite: leaves born in pairs at each node on opposite sides of the stem.

ornamental: a plant cultivated for aesthetic purposes.

oval: broadly elliptic in shape, with the width greater than half of the length.

ovate: two-dimensional egg-shaped, with the attachment at the wider end.

ovoid: three-dimensional egg-shaped, with the attachment at the wider end.

panicle: an irregularly branched inflorescence with the flowers maturing from the bottom upward.

pealike flower: irregular flower characteristic of sweet peas and beans in the family Fabaceae.

perennial: any plant that persists for three or more growing seasons, even though it may die back to rhizomes or rootstock during the dormant period.

petiole: a stalk that attaches the leaf blade to the stem.

pinnately compound: a compound leaf with leaflets arising at intervals along each side of an axis or rachis (leafstalk).

pistil: the female reproductive portion of a flower, usually consisting of an ovary, style, and stigma.

pith: the soft or spongy central tissue in some twigs and stems, sometimes absent making the stem hollow.

plume: a tuft of simple or branched bristles.

pod: an elongated dry fruit that usually splits open upon maturity, such as a legume.

raceme: an elongated, unbranched inflorescence with stalked flowers generally maturing from the bottom upward.

rachis: the main axis of an inflorescence or compound leaf.

recurved: gradually curved backward or downward.

rhizome: an underground stem, usually horizontal and rooting at nodes.

right-of-way: a narrow corridor of land in straight sections across the landscape, repeatedly cleared and kept in low vegetation, to accommodate roadway structures, poles and wire for electrical and telephone transmissions, and pipelines.

riparian: situated or dwelling on the bank or floodplain of a river, stream, or other body of water.

root collar: the surface area of a perennial where the stem and roots join.

rootcrown: the part of a perennial plant where the stem and roots join, often swollen.

root sprout: a plant originating from a root or rhizome that takes root at nodes.

rootstock: the part of a perennial plant near the soil surface where roots and shoots originate.

rosette (basal rosette): a circular cluster of leaves on or near the soil surface radiating from a rootcrown, as in dandelions.

scaly: covered with minute flattened, platelike structures.

semievergreen: tardily deciduous or maintaining green foliage during winter only in sheltered locations.

semiwoody plants: species that have mostly woody stems and deciduous leaves, usually shorter than shrubs.

sepal: a single unit of the calyx; the lowermost whorl of flower parts.

serrate: margin with sharp forward-pointing teeth.

sessile: attached without a stalk, such as a leaf attached without a petiole.

shade intolerant: a plant that cannot grow and reproduce under the canopy of other plants but needs direct sunlight.

shade tolerant: a plant that can grow and reproduce under the canopy of other plants.

sheath: a more or less tubular portion of a structure surrounding another structure, such as the tubular portion of leaf bases of grasses that surround the stem.

shrub: a wood plant, typically multistemmed and shorter than a tree.

simple: not compound; single; undivided; unbranched.

smooth: not rough to the touch, usually hairless (or only finely hairy) and scaleless.

spherical: round in three dimensions, like a ball; synonymous with globose.

spike: an elongated, unbranched inflorescence with sessile or unstalked flowers along its length, the flowers generally maturing from the bottom upward.

sporangia: the case bearing spores on ferns.

spore: a minute (almost not visible), one-celled reproductive body of ferns, asexual.

stamen: the male reproductive portion of a flower, usually consisting of an anther and filament.

stipules: the pair of leaflike structures at the base of a leaf petiole in some species.

stone: a hard woody structure enclosing the seed of a drupe.

subshrub: a very short woody plant.

subtend: a structure just below another, such as flowers subtended by bracts.

succulent: fleshy or soft tissue.

swamp: a wooded or brushy area usually having surface water.

synonym: a discarded scientific name for a plant; another common name.

taproot: the main root axis; a long vertical, central root.

tardily deciduous: maintaining at least some green leaves into winter or early spring.

terminal: at the end.

thorn: a stiff, curved, sharply pointed modified stem, sometimes branched.

throat: the area inside a flower tube formed from fused petals; the upper side of a grass collar where the blade meets the sheath.

toothed: margin with outward pointed lobes; coarsely dentate.

trailing: running along the soil or leaf litter surface.

tuber: a thickened portion of a root or rhizome modified for food storage and vegetative propagation, such as a sweet potato.

tubular: a cylindrical structure, such as formed from fused petals or sepals.

twig: short leaf branch.

umbel: a compound flower with stems arising and radiating from one point of attachment.

variegated: marked with stripes or patches of different colors.

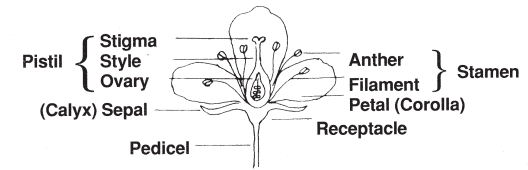
vine: a long trailing or climbing plant.

whorled: three or more leaves in a circular arrangement arising from a single node or radiating at different angles to the main stem.

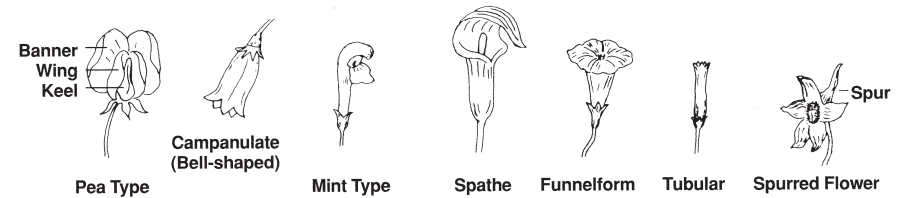
wiry: thin, flexible, and tough.

yam: a tuber or potato-like organ

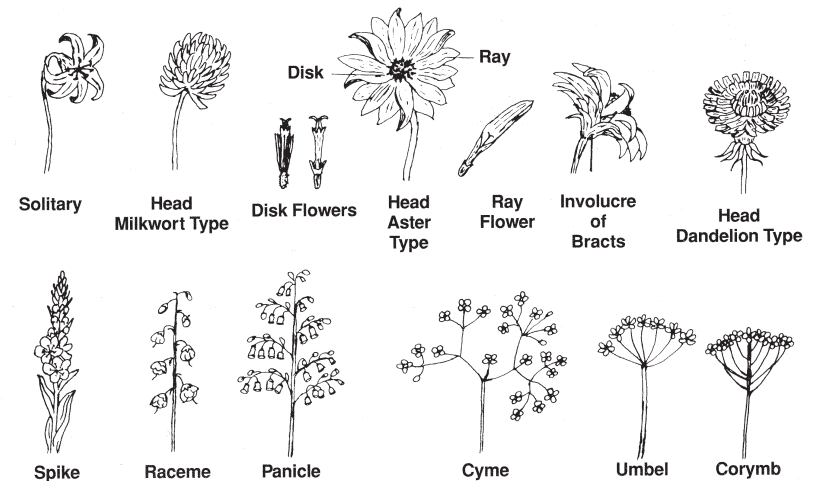
FLOWER PARTS



FLOWER TYPES

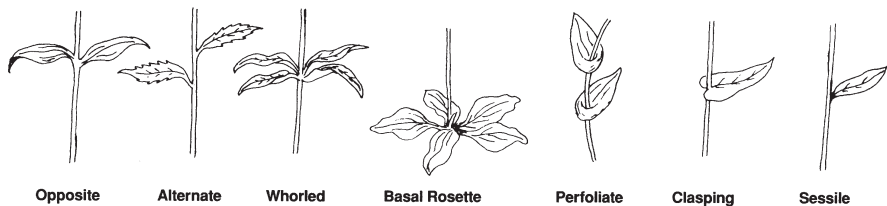


INFLORESCENCES

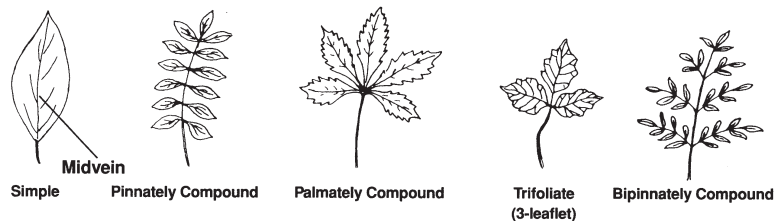


Flower parts, flower types, and inflorescences.

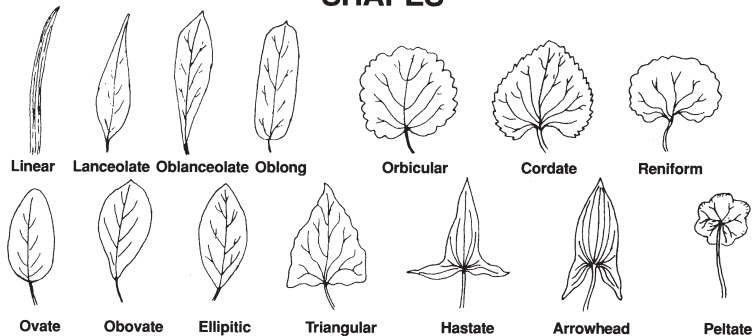
LEAF ARRANGEMENTS



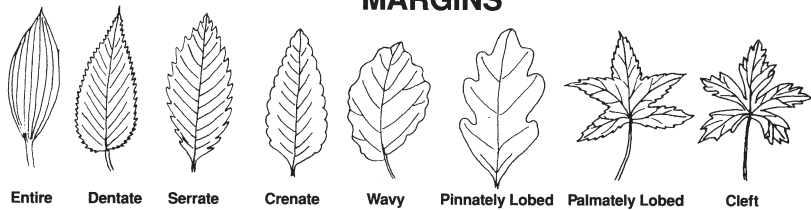
LEAF DIVISIONS



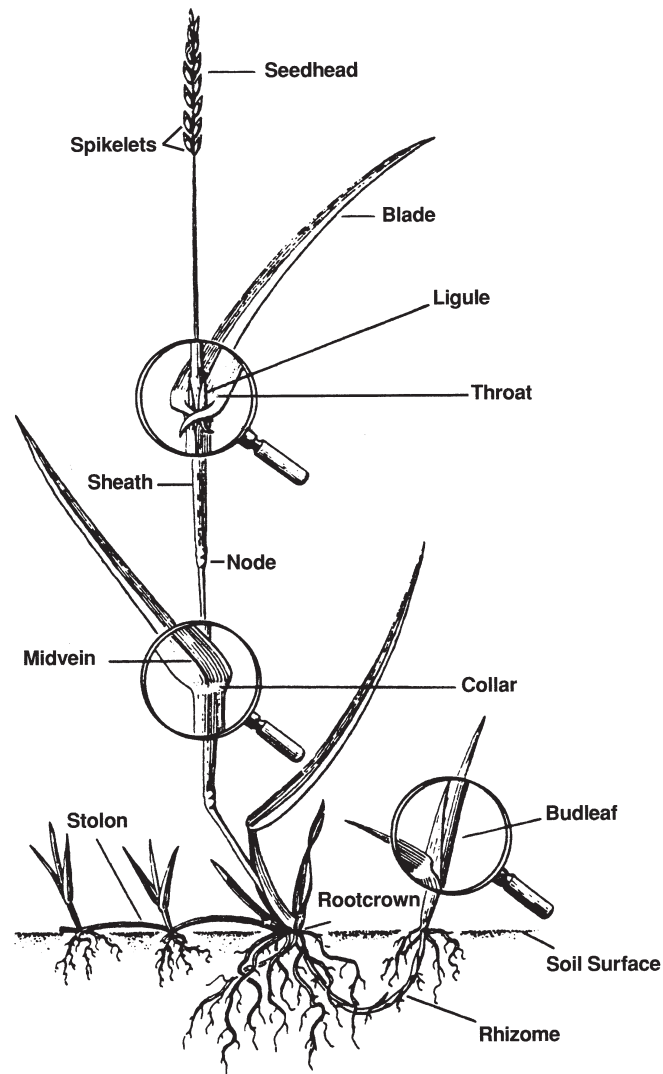
SHAPES



MARGINS



Leaf arrangements, leaf divisions, shapes, and margins.



Parts of a grass plant.

Pesticide Precautionary Statement

Pesticides used improperly can be injurious to humans, animals, and plants. Follow the directions and heed all precautions on the labels

Store pesticides in the original containers under lock and key—out of reach of children and animals—and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish and wildlife. Do not apply pesticides when there is danger of drift, when honeybees or other pollinating insects are visiting plants, or in ways that may contaminate or leave illegal residues.

Avoid prolonged inhalation of pesticide sprays or dust; wear protective clothing and equipment if specified on the container.

If your hands become contaminated with a pesticide, do not eat or drink until you have washed them. In case a pesticide is swallowed or gets in the eyes, follow the first aid treatment given on the label, and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash thoroughly.

Do not clean spray equipment or dump excess spray material near ponds, streams, or wells. Because it is difficult to remove all traces of herbicides from equipment, do not use the same equipment for insecticides or fungicides that you use for herbicides.

Dispose of empty pesticide containers promptly and in accordance with all applicable Federal, State, and local laws.

NOTE: Some States have restrictions on the use of certain pesticides. Check your State and local regulations. Also, because registrations of pesticides are under constant review by the U.S. Environmental Protection Agency, consult your State forestry agency, county agricultural agent or State extension specialist to be sure the intended use is still registered.

Use of trade names is for reader's information and does not constitute official endorsement or approval by the U.S. Department of Agriculture to the exclusion of any suitable product or process.

Miller, James H. 2003. Nonnative invasive plants of southern forests: a field guide for identification and control. Revised. Gen. Tech. Rep. SRS-62. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 93 p.

Invasions of nonnative plants into forests of the Southern United States continue to go unchecked and unmonitored. Invasive nonnative plants infest under and beside forest canopies and dominate small forest openings, increasingly eroding forest productivity, hindering forest use and management activities, and degrading diversity and wildlife habitat. Often called nonnative, exotic, nonindigenous, alien, or noxious weeds, they occur as trees, shrubs, vines, grasses, ferns, and forbs. This book provides information on accurate identification and effective control of the 33 nonnative plants and groups that are currently invading the forests of the 13 Southern States, showing both growing and dormant season traits. It lists other nonnative plants of growing concern, control strategies, and selective herbicide application procedures. Recommendations for preventing and managing invasions on a specific site include maintaining forest vigor with minimal disturbance, constant surveillance and treatment of new unwanted arrivals, and finally rehabilitation following eradication.

Keywords: Alien plants, exotic plant control, exotic weeds, herbicide weed control, integrated vegetation management, invasive exotic plants, invasive nonindigenous plants, noxious plant control.



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