Identifying and Managing Landscape Weeds

A Guide for Homeowners in the Piedmont Region of NC

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Weed control is an essential part of gardening. Weeds reduce aesthetic value of lawns and landscapes. In addition, weeds compete with desired plantings for nutrients, water, and sunlight, and can harbor pests, such as insects, disease-causing pathogens, and animals. Some weeds, such as poison ivy, pose health and safety concerns.

Weeds should be managed using an integrated approach. Eradication is an unrealistic goal, but weeds can be controlled to an acceptable level. Integrated weed management includes several means of weed control. These may include preventative measures, assessment of the weed populations and the necessity for taking action to control weeds, cultural control measures, and judicious use of herbicides.

Weed Life Cycles

There are four basic weed life cycles. Knowing the life cycle of the weed allows gardeners to exploit weak links in the plant's life cycle and thus better control the weeds.

Annual weeds are those that complete their life cycle in one season. These plants germinate from seed, grow, flower and produce seed, then die within a single year. **Winter annuals** germinate in fall or early spring when soil temperatures are cool. Winter annual weeds will flower in the spring or early summer, then die as the weather heats up. **Summer annuals** prefer warmer soil temperatures. Summer annual weeds germinate in the spring, flower at the end of summer, and die as the weather cools in the fall. Important aspects of managing annual weeds include preventing flowering and seed production, and prohibiting germination of the weeds at the appropriate time of year. Germination of annual weed seeds can be inhibited by the use of mulches or pre-emergent herbicides.

Biennial weeds germinate from seed and grow as a cluster or rosette of leaves near the soil surface during their first year of growth. During the plant's second year, it produces flowers and seeds, then dies. Biennial weeds are most easily managed during their first year of growth, and are often managed similarly to annual weeds.

Perennial weeds grow for many years. These weeds can flower and produce seeds during many growing seasons. In addition to reproduction by seed, many perennials can spread vegetatively above- and/or belowground. Many perennial weeds will die back to the ground during the winter and resprout from a root system or crown that persists underground. Perennial weeds are often difficult to manage and require repeated control. Early-season growth of perennials may be tender and easier to control mechanically. Chemical control of perennial weeds is effective in the fall when the plant is moving nutrients to its root system for winter storage.

Weed Identification

Properly identifying weeds allows gardeners to choose more effective means of controlling them. Plants are easiest to identify when they are in flower. However, preventing weeds from flowering is key to managing weed populations in the landscape. Learning to recognize the vegetative characteristics and unique characteristics of weeds allows for more effective control.

Weeds can be separated into two broad categories. **Monocots** are plants whose seedlings have one cotyledon (seed leaf). Typically, these plants are recognizable by their long, narrow leaf blades with parallel veins. Grasses, rushes, and sedges are all examples of monocots.

Dicots are plants whose seedlings have two cotyledons. Dicot weeds are often referred to as **broadleaf** weeds. Broadleaf weeds are highly variable, but generally can be identified by leaves that are broad with netted veins.

General Weed Prevention in Lawns

Many weeds in lawns can be prevented by maintaining a healthy stand of turf. Homeowners should select their desired turf and manage it accordingly. Lawns in the Piedmont should be maintained as cool-season or warm-season turfgrasses, but never a combination of the two. Proper fertilization, irrigation, and mowing heights encourage healthy lawns.

Cool-season turfgrasses are bunch grasses and require overseeding every two to three years to maintain a full stand of grass. Pre-emergent herbicides will inhibit the germination of turfgrass as well as weed seeds, so should not be applied when overseeding occurs.

Warm-season turfgrasses spread vegetatively. In areas where lawn exists besides a landscape bed, warm-season grasses will require edging to prevent the grass from invading beds and becoming a weed.

Selective herbicides may be effective in managing broadleaf weeds in turf, as the turfgrasses will not be damaged by herbicides that target broadleaf plants. Chemical control of monocot weeds in lawns is more difficult to achieve.

General Weed Prevention in Landscape Beds

Sanitation and prevention are important for controlling weeds in landscape beds. As much as possible, gardeners should use soil, amendments, and plant material free of weeds and weed seed. Mulching landscape beds with two to three inches of organic mulch inhibits the germination of annual weeds and is an excellent way to reduce weed pressure. Proper spacing of desired plants to fill the garden bed will provide competition for sunlight and can help reduce weed pressure.

Weeds that do grow in the landscape should be removed before flowering. When pulling weeds by hand, gardeners should try to remove the roots as much as possible. Light scraping of the soil surface with a hoe is a good method of control for seedling weeds.

Germination of weeds is often triggered by soil disturbance. Renovation and other activity in garden beds can lead to the germination of weeds. Gardeners may choose to till the soil several weeks before planting to allow weed seeds to germinate. Weeds should be killed or removed before planting.

Chemical control of weeds in landscape beds can be more difficult than in turf, as most landscape plants are dicots and will be damaged by herbicides that target broadleaf weeds.

Herbicides

The use of chemicals for weed control should always be the last resort in an integrated weed management plan. Herbicides can be classified by their mode of action and how they are used. When using herbicides, always read and follow the label instructions. Be sure to wear the proper personal protective equipment. For a list of herbicides approved for use in the landscape, see the *North Carolina Agricultural Chemicals Manual*. Homeowners may prefer to hire a licensed professional to perform pesticide applications.

Pre-emergent herbicides prevent germination of seeds. Pre-emergent herbicides are not selective and will also kill seeds of grasses or desired plants in the landscape. Pre-emergent herbicides are most effective on shallow-seeded plants and do not kill existing plants or dormant seeds. Pre-emergents applied in late summer and early fall control winter annual weeds, while applications in early spring control summer annual weeds. Most pre-emergent herbicides require rainfall or irrigation to activate the herbicide.

Post-emergent herbicides are applied to the foliage of weeds that have already germinated. Post-emergent herbicides can be **contact** or **systemic** herbicides. Contact herbicides kill only the part of the plant that comes into contact with the herbicide. Adequate spray coverage is necessary for controlling weeds with a contact herbicide. Systemic herbicides are absorbed through the foliage of a plant and are translocated through the vascular system of plants. Thus, systemic herbicides can also kill the underground portion of plants. The majority of post-emergent herbicides are systemic herbicides.

Post-emergent herbicides can also be classified by their selectivity. **Selective** herbicides control certain plant species without serious impact on the growth of others. For instance, some herbicides can be used in lawns to control broadleaf weeds without harming the grass. Other herbicides do the opposite and can be used to control grassy weeds in flower beds. **Nonselective** herbicides damage all plant species. These should be used to control all plants in a certain area. Nonselective herbicides can be used to spot-treat weeds, but gardeners should exercise care to avoid damaging non-target plants.

Annual Bluegrass
Poa annua

Photo: turffiles.ncsu.edu

Photo by Leslie Peck

Life Cycle: Winter annual

Appearance and Growth Habit
Compared to most turfgrasses, annual bluegrass has a lighter green color with a bunching or slightly spreading growth habit. It has a coarse leaf texture and produces abundant light colored seed heads. Annual bluegrass is prevalent in shady, damp compacted soils. Contrary to its name, annual bluegrass may also be found as a short-lived perennial subspecies with similar appearance and growth habit.

General Information
Annual bluegrass seed germinates in the late summer or early fall when soil temperatures reach 70℉ or below. Seedlings grow through shorter days and cooler fall temperatures, overwinter and produce seed heads in spring. Flowering over several months in spring, annual bluegrass is a prolific seed producer. Seeds can remain dormant in soil for years before germinating. Annual bluegrass will usually die in late spring/early summer with high temperatures and reduced moisture.

Methods of Control
Preventive measures, including maintaining a healthy stand of turf, are important for managing annual bluegrass. In turf, reduce frequency of watering and minimize application of high nitrogen fertilizers. For cool season turf grasses, fall aeration should be avoided or occur before annual bluegrass germinates. Mowing cool season turfgrasses at 3 to 4 inch height will reduce turf stress and reduce competition from annual bluegrass. In landscape beds, hand weeding is an effective method of control.

Pre-emergent herbicides inhibit germination of bluegrass seed and should be applied in late summer or early fall when temperatures drop to a daytime high of 75℉ for 4 consecutive days. Overseeding or re-sodding of turf areas may be impacted by the application of pre-emergent herbicides. Always read the label thoroughly.

Pre-emergent herbicides will not control developed, actively growing weeds. To control annual bluegrass weeds, spot treat areas in cool season turfgrasses and in non-turf areas with a nonselective herbicide such as glyphosate (Roundup, others).

Large Crabgrass
Digitaria sanguinalis

Photo by J.C. Neal, NCSU

Photo: turffiles.ncsu.edu

Other Common Names: Hairy crabgrass

Life Cycle: Summer annual

Appearance and Growth Habit
Crabgrass typically exhibits a prostrate growth habit. The stems are round, and stems and leaves both are hairy. Nodes where the leaves emerges from the stems appear swollen and may produce roots. Crabgrass typically grows in bare areas that are neglected or not well maintained, such as along sidewalks or driveways.

General Information
Crabgrass seeds germinate in the spring, around the time when forsythia plants bloom. Plants produce seed in late summer and die in the fall at the time of the first killing frost. Crabgrass will thrive under close mowing conditions.

Methods of Control
Crabgrass control in lawns is best achieved by proper turf maintenance.

Pre-emergent herbicides applied in late winter or early spring inhibit germination of crabgrass seeds. In landscape beds, application of mulch can also inhibit germination.

Actively growing crabgrass plants can be removed by hand. When mechanical control is not feasible, crabgrass can be spot-treated with nonselective herbicides.

Purple Nutsedge and Yellow Nutsedge
Cyperus rotundus and *Cyperus esculentus*

Photo: turffiles.ncsu.edu

Life Cycle: Perennial

Appearance and Growth Habit

Sedges can be identified by their triangular stems and leaves that are grouped in threes. Nutsedge prefers moist areas but can also tolerate dry soil. The two types of nutsedge are best distinguished by the color of their seed heads and their tuber structure.

Yellow nutsedge has bright green, pointed leaves that are typically glossy and taller than lawn grasses. Yellow nutsedge has pale yellow, umbrella-shaped flowers. Yellow nutsedge spreads by tubers that grow on the tips of underground rhizomes.

Purple nutsedge has darker leaves with more blunt leaf tips than yellow nutsedge. Purple nutsedge develops red or purple seed heads and spreads by tubers that grow on chains connected to underground rhizomes.

General Information

Yellow nutsedge is a more widespread weed problem but is less difficult to control. Purple nutsedge is most commonly found in the coastal plain of NC. Both nutsedges emerge in the spring and form tubers throughout the summer. A single plant can produce up to 6,000 tubers that can lie dormant in the soil for several years. Nutsedge flowers in late summer and will die back at the first frost.

Methods of Control

Sanitation is the key to nutsedge control. Gardeners should use soil, plant material, and soil amendments free of nutsedge and tubers. Pulling emerging plants in the spring or early summer, before seed and tuber production, is important for control. Dig to remove any existing rhizomes and tubers. Control is more difficult in warm-season lawns.

Nutsedges can be controlled after they emerge either with non-selective herbicides or with selective herbicides that target sedges. Pre-emergent herbicides may also provide some control for yellow nutsedge.

Carolina Geranium
Geranium carolinianum

Photo by Leslie Peck

Photo: turffiles.ncsu.edu

Other Common Names: Carolina cranesbill, Carolina wild geranium, Wild geranium

Life Cycle: Winter annual or biennial

Appearance and Growth Habit
Carolina geranium grows on erect stems with a basal rosette of leaves. Plants are widely branching. Leaves are hairless and deeply lobed with five to seven lobes; each lobe is again lobed and bluntly toothed. Leaves vary in size, from 1 inch to greater than 2 inches. The plant has a short tap root and the flower is a tiny, inconspicuous pink bud.

General information
Carolina geranium can be found growing in fields, lawns, roadsides, waste sites, flower and vegetable gardens. This weed begins growing in the fall and blooms in late spring. Carolina geranium produces seeds with a hard-coated membrane that can withstand prolonged dormancy in the ground.

Methods of Control
Carolina geranium is best controlled in the spring or fall, when it is actively growing. Maintaining healthy turf is a good control measure, as is the use of mulches in landscape beds.

Use of pre-emergent herbicide is neither effective nor recommended for Carolina geranium control. Weeds should be removed by hand pulling or hoeing, and control is best achieved if the underground crown of the plants also is also removed.

Post-emergent herbicides can be used on actively growing Carolina geranium when infestations are great. Fall applications are most effective.

Common Chickweed
Stellaria media

Photos: turffiles.ncsu.edu

Other Common Names: Winterweed

Life Cycle: Winter annual

Appearance and Growth Habit
Chickweed is a low-lying plant that forms large mats of foliage. The stems are weak and slender; the leaves oval and opposite, about ½ inch long; flowers are white and small with 5 petals; the root system is shallow and weak. Chickweed forms extensive, dense patches in cultivated ground.

General Information
Chickweed is a winter annual that germinates in autumn, grows over the winter and dies back in late spring. Seeds lie dormant over the warm months. Chickweed will survive close mowing, so proper mowing heights for turfgrass are important in managing this weed.

Methods of Control
Mechanical control is effective only before the plant sets seed. In a cultivated bed, chickweed can be easily pulled or hoed because of its shallow root system. Repeated tillage can kill newly emerged plants. Using mulches will inhibit germination of chickweed seeds.

Chemical control may be necessary for larger populations of chickweed. Pre-emergent herbicides applied in late summer or early fall keep the seeds from germinating. After chickweed has started growing, post-emergent herbicides can be used to control its growth through the winter and spring.

Dandelion
Taraxacum officinale

Photo by Leslie Peck

Photo: turffiles.ces.ncsu.edu

Life Cycle: Perennial

Appearance and Growth Habit
Dandelion leaves are long, narrow and toothed. They grow in a rosette from the crown and are often purple at the base. Leaves and flower stalks emit a milky white sap when broken. Dandelions have a thick, fleshy taproot. The deep golden yellow flowers are a composite of many very small flowers borne in heads on long hollow stalks. The blossoms mature into spherical clusters like white puffballs, composed of parachute-like seeds that are carried on the wind.

General Information
All parts of the dandelion plant are edible. Dandelion plants persist during the winter as an evergreen rosette of leaves. New growth appears in early spring with flowering and dandelion spreads by seeds dispersed by the wind.

Methods of Control
Dandelions are perennial, so repeated control usually is necessary Regular mowing of dandelions in turf can prevent flowering and seed formation. In landscape beds, dandelions can be hand dug to remove the entire plant, including taproot. Application of mulch inhibits the germination of dandelion seeds in the spring.

Pre-emergent herbicide applied in early spring will prevent germination of seeds. Post-emergent herbicide can be applied in spring once active growth has begun.

English Ivy
***Hedera* spp.**

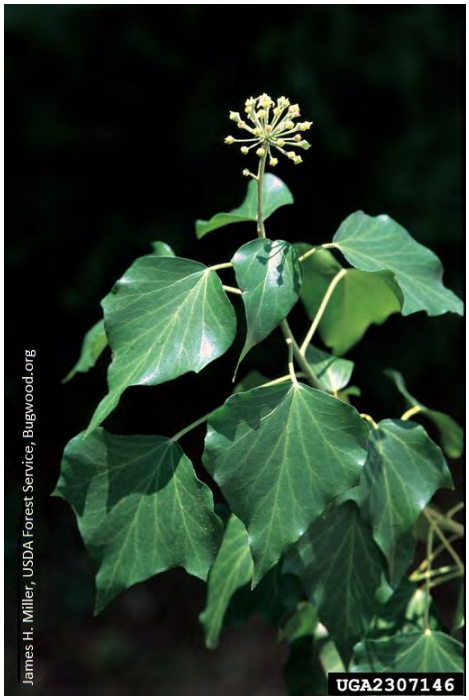

Photo by Sheilah Lombardo

Life Cycle: Perennial

Appearance and Growth Habit
English ivy is an evergreen, creeping woody vine with two distinct growth phases. In its juvenile stage, the alternate leaves are dark green, generally three- to five-lobed, occasionally variegated and often clearly marked with prominent whitish veins. If allowed to climb trees, walls, fences and similar vertical objects, the vines mature, becoming thicker and woodier, and the leaves typically lose their distinctive lobed form. Adult plants also begin to produce clusters of insignificant yellowish flowers, followed by blue-black fruits (drupes). Birds eat the fruit and spread seed to infest new areas.

General Information
Ivy is considered an invasive pest plant of landscapes and woodlands throughout much of the United States. The evergreen foliage is present year-round. Flowering occurs from mid-summer into autumn, followed by ripening fruits.

Methods of Control
Immature vines can be controlled relatively easily by hand-pulling and/or chemical herbicides. Control is more difficult in well-established colonies, but can be accomplished with persistence. *NOTE: When working with ivy, wear heavy gloves, long sleeves and long pants to protect against accidental contact with poison ivy or briers that may be growing with the English ivy.*

Physically remove plants by pulling up the shallow-rooted, ground-level vines. This is easiest when soil is moist. Climbing vines should be carefully cut at a comfortable height, using loppers or pruning saw, then pried away from the support and cut again close to the base. Be sure to cut all ascending vines, clearing a band between top and base growth. The vines above the gap will wither and decompose. Large rooted stumps that cannot be fully removed can be treated with undiluted herbicide containing triclopyr or glyphosate, carefully painted full-strength on the freshly cut surfaces to ensure that the roots are killed.

Physical removal is a good job to undertake over the winter, pulling manageable sized areas one by one. If possible, remove all refuse from the site as vines left on the ground may take root. Monitor the area regularly to find and remove any regrowth.

The leaves of English ivy are most vulnerable to chemical spray shortly after they emerge and expand, especially early in the growing season. As foliage matures, it develops a waxy cuticle that resists penetration. Adding surfactant to a triclopyr- or glyphosate-based herbicide mixed according to label directions can maximize effectiveness.

It can be effective to mow or string-trim a stand of ivy, allow it to sprout new, tender growth, and then apply herbicide spray.

Always monitor for regrowth and reapply herbicide as needed to ensure that all plants are eradicated.

Field Madder
Sherardia arvensis

Photo: cses.auburn.edu

Other Common Names: Blue field madder, Spurwort

Life Cycle: Winter annual

Appearance and Growth Habit
Field madder is a low-growing plant with whorled leaves. Four to six leaves are present at each node, with 4-leaved whorls predominating on the lower part of the stem. Small leaves (5 to 15 mm long and 2 to 4 mm wide) are hairy and pointed at the tip. The square stems are also hairy. Four-petaled flowers are pink to pale lavender and appear in clusters at the end of the stems. Fruits have two lobes containing one seed each.

General Information
Field madder is a broadleaf weed typically found in lawns and grain fields. Field madder is a broadleaf weed that germinates in the fall and blooms early in the spring. The appearance of field madder is similar to bedstraw (*Gallium* spp.) weeds.

Methods of Control
Field madder is best controlled by competition from a healthy, well-maintained stand of turf. Be sure to remove field madder before it blooms. Hand-pulling is effective in sparse populations, but post-emergent herbicide may be necessary to control large populations of field madder. Herbicides that target broadleaf weeds are a good choice for managing field madder in lawns.

Pre-emergent herbicides applied in late summer or early fall will inhibit germination of field madder. Maintain a dense, actively growing turf through proper mowing, fertilizing, and watering to prevent most weeds from invading your lawn.

Ground Ivy
Glechoma hederacea

Photos: turffiles.ncsu.edu

Life Cycle: Perennial

Appearance and Growth Habit
Ground ivy is a low, prostrate, creeping broadleaf perennial that roots at nodes. This member of the mint family has square stems and a distinct odor when crushed.

Leaves are opposite, kidney-, heart-, or spade-shaped, with scalloped, serrated, or toothed edges and hairs on both upper and lower surfaces. Heavily veined palmate leaves vary from 2 inches at the base of plant, to ½ inch for new growth.

In the spring, purplish-blue funnel shaped flowers with dark pink speckles appear in whorls in the upper leaf axils.

General Information
Ground ivy prefers moist shady areas, but can tolerate full sun. Reproduction is mostly by creeping stems that root at nodes, less commonly by seeds.

Methods of Control
Ground ivy can be difficult to control as it is resistant to several common lawn herbicides. Hand pulling is tedious and is only practical on young weeds at the beginning of an infestation. In lawns, the key to controlling ground ivy is maintaining a healthy, dense turf that can compete effectively and prevent weed establishment.

Post-emergent herbicides can be used to control ground ivy, but two or more applications at 21- to 28-day intervals may be required. Herbicide treatment is most effective in spring and fall.

Hairy Bittercress

Cardamine hirsuta

Photos: turffiles.ncsu.edu

Other Common Names: Lambscress, Landcress, Hoary bittercress, Springcress, Flickweed, Shotweed

Life Cycle: Winter annual

Appearance and Growth Habit
Hairy bittercress grows as a green basal rosette with larger leaves growing around the lower portion of the stem and smaller leaves up the stem. The stem and upper surface of leaves have small hairs and the stems, typically 3 to 9 inches tall, bear clusters of tiny white flowers having four petals each. Seeds are arranged in single rows in thin pods arranged above the flowers. When dried or disturbed, the pods explode, flinging seeds everywhere. Hairy bittercress grows in sun and part shade and prefers cool, moist soil. This weed can form a dense mat of multiple plants.

General Information
Hairy bittercress is a member of the mustard family (Brassicaceae) and is an edible broadleaf weed with a peppery taste similar to arugula. Native to Eurasia, hairy bittercress has been introduced to many countries. This plant is favored by aphids and is also the larval host of the spring azure and falcate orange-tip butterflies.

Hairy bittercress seed typically germinates in the fall or winter. As temperatures rise in early spring, the plant grows and flowers, dying back in late spring and early summer. Hairy bittercress relies on ballistic seed dispersal to spread its seed and seed pods will shatter to spread seed in the springtime.

Methods of Control
Germination of hairy bittercress seeds in the fall can be inhibited by the use of mulches. Pre-emergent herbicides applied in late summer or early fall also is effective.

When present in the landscape, hairy bittercress is best controlled prior to flowering and seed dispersal. Physical removal of plants during warm winter weather and early in the spring is advised. Removal can be done by hand or using a hoe. Post-emergent herbicide also can be used to manage plants that are

growing in the garden. Close mowing of turf allows bittercress to thrive, so be sure to mow your lawn to the appropriate height.

Henbit
Lamium amplexicaule

Photo: plants.ces.ncsu.edu
Anita Gould, CC BY-NC 2.0

Life Cycle: Winter annual

Appearance and Growth Habit
Henbit has square stems with pink to purple flowers appearing in early spring. Leaves are opposite and are circular to heart shaped. Plants may reach up to 16 inches in height. Henbit is sometimes confused with purple deadnettle. Deadnettle plants can be distinguished by their leaves which gradually get smaller towards the top of the plant.

General Information
Henbit emerges in the fall and will flower and set seed in early spring. As the weather warms in late spring, henbit plants will die.

Methods of Control
The fibrous root system of henbit plants makes this weed easy to physically remove by hand or with a hoe. Control is best achieved if plants are removed before flowering.

Mulches applied to a depth of two to three inches inhibit seed germination. Pre-emergent herbicides applied in late summer or early fall will also help to reduce seed germination.

Pennsylvania Smartweed
Polygonum pensylvanicum

Photo: extension.umd.edu

Other Common Names: Knotweed, Pink knot

Life Cycle: Summer annual

Appearance and Growth Habit
Smartweed is a broadleaf weed with alternate leaves. Leaves have smooth margins and may have a dark spot in the center. Stems are round, often reddish, and are somewhat enlarged at the nodes. Flowers appear in clusters as spikes at the end of the stems. Each flower is small and white to bright pink in color, with an appearance similar to a pebble.

General Information
Smartweed plants grow from seed, beginning in the late spring. Smartweed is rarely a problem in turf that is well-maintained and mowed to the proper height. Smartweed appears most frequently in landscaped areas and along margins and edges. It can tolerate a range of soil types and conditions, which gives it a strong competitive edge when turfgrass suffers due to poor soil conditions and inadequate water. Smartweed is sometimes confused with spurge and buttonweed, but these have opposite leaves rather than the alternate.

Methods of Control
Remove smartweed before it flowers and produces seed. In warm-season turfgrass, it is best to control this weed in late spring or early summer, as the turf will have a greater chance of growing to cover the areas previously occupied by weeds. In landscape beds, mulches inhibit germination of smartweed seeds. Pre-emergent herbicides can also inhibit seed germination in the landscape and in lawns. Control smartweed plants after emergence by hand removal or post-emergent herbicides.

Persian Speedwell
Veronica persica

Photos: turffiles.ncsu.edu

Life Cycle: Winter annual

Appearance and Growth Habit
Persian speedwell is a low, prostrate, spreading broadleaf weed that grows from a fibrous root. Leaves are usually oval/heart/spade-shaped, with rounded serrated edges and hairs on both upper and lower surfaces. Lower leaves are opposite and upper leaves are alternate, occurring on erect flowering stems.

Flowers occur singly on flower stalks that arise from leaf axils. The light-blue flowers range from 7 to 12 mm with a pale blue to white center and dark blue lines. Fruit is a heart-shaped seed pod.

General Information
Persian speedwell can grow in a variety of locations, but prefers areas with low fertility and dry, sandy or rocky soil. Shade and moisture encourage growth.

Persian speedwell reproduces by seed, germinating in the fall or winter and grows during any warm spell but otherwise remains dormant throughout winter. Speedwell grows and produces seed in spring and dies as temperatures increase in late spring or early summer.

Methods of Control
As a winter annual, speedwell is best controlled before spring flowering. Pre-emergent herbicide applied in the fall is the most effective control. Hand pulling young weeds as they emerge will help control plants before they go to seed.

In lawns, maintain a healthy, dense turf that can compete and prevent weed establishment. In landscape beds, mulch will inhibit germination of speedwell seeds.

Poison Ivy
Toxicodendron radicans

Photo by Sheilah Lombardo

Photo: extension.umd.edu

Life Cycle: Perennial

Appearance and Growth Habit
Poison ivy is well known for its trifoliate leaves. Leaves are glossy and green, but will turn red or orange early in the fall. Poison ivy is a deciduous, woody vine. Vines form aerial roots, giving them a hairy appearance. Flowers are small and appear in summer, followed by white berries.

General Information
All parts of the poison ivy plant contain the chemical urushiol, an irritant that often causes a skin rash. The vine can grow up to seven feet and can spread by seeds, as well as vegetatively. Poison ivy often requires repeated control. Gardeners dealing with poison ivy should be sure to protect their skin from exposure and wash any clothing and tools that come in contact with poison ivy.

Methods of Control
Poison ivy typically requires repeated control. Seedlings and small plants can be removed by hand including the roots if possible. Systemic herbicides provide the best control and will be best absorbed by new leaves in the spring. Fall application of herbicides also encourages translocation of the pesticide to the roots, leading to better control. Always use care when handling and disposing of poison ivy plants.

Spotted Spurge
Euphorbia maculata

Photo by Leslie Peck

Photo: turffiles.ncsu.edu

Life Cycle: Summer annual

Appearance and Growth Habit
Spotted spurge grows from a taproot with stems radiating from a central point. The plant exhibits open and prostrate growth, forming mats near the ground. When broken, the red stems exude a milky sap. Small green or red leaves are opposite and have a maroon spot. Spurge develops insignificant white flowers at leaf axils. Fruit is a 3-lobed capsule.

General Information

Spurge is a broadleaf weed that can be a problem both in turf and the landscape. Spurge is easily identifiable by its milky sap. Because of its prostrate habit, spurge withstands mowing. Growth from a taproot allows spurge to become an issue in gravel, brick, or even cement walkways.

Methods of Control

Mulches and pre-emergent herbicides applied in the late winter or early spring inhibit the germination of spurge. After emerging, spurge plants should be prevented from flowering if possible. When removing spurge by hand, be sure to remove the taproot if possible to prevent resprouting. In turf, spurge can be controlled with selective herbicides for broadleaf weeds. In the landscape, spot treatments of a nonselective herbicide are appropriate for controlling spurge.

Sticky Burrweed
Soliva sessilis

Photos: turffiles.ncsu.edu

Other Common Names: Burrweed, Lawn Burrweed, Spurweed

Life Cycle: Winter annual

Appearance and Growth Habit
Burrweed is a low-growing weed with hairy, somewhat sticky leaves. It produces multiple small, spiny seed pods that readily attach to shoes, clothing, and animal fur.

General Information
Burrweed seeds germinate in the fall or winter and grow during cooler weather. The plants produce seed in the spring and die as temperatures increase late in the spring. Sticky burrweed grows well in the shade and prefers moist soil.

Methods of Control
Often an issue in lawns, burrweed is best controlled by maintaining a healthy stand of turf. Removal of any plants should be performed during warm winter weather or early in the spring before the plant produces flowers and fruit. Pre-emergent herbicides applied in late summer or early fall will inhibit germination of burrweed. Post-emergent control in lawns can be achieved with selective herbicides for killing broadleaf weeds.

Wild Violet
***Viola* spp.**

Photo by Leslie Peck

Life Cycle: Perennial

Appearance and Growth Habit
Wild violets are low-growing, cool-season perennials. Plants form colonies or clumps that are 4 to 10 inches in height. Plants spread from short stout rhizomes and reproduce from seed. Smooth green leaves are heart-shaped with a scalloped edge. Basal leaves form from a crown on relatively long petioles. Flowers have five petals and appear from April through June, forming on a leafless stalk usually shorter than the leaves. Flowers may be blue, purple, white, or yellow. Fruits are ½-inch capsules with three valves holding dark brown seeds.

General Information
Primarily a weed of turf and landscape, wild violet also is found in damp woods, meadows, and roadsides. Wild violets are well suited to shade environments. Wild violet grows actively in the cool seasons of the year. The flowers bloom in spring and early summer, followed by seed pods. The plant persists through the winter but will recede under a snow cover.

There are culinary uses for flowers and leaves of wild violet.

Methods of Control
Wild violet is difficult to control due to its aggressive growth and herbicide resistance. This weed's attractive appearance as a ground cover might make some homeowners think about incorporating it into the landscape. If used in this way, care should be taken to corral wild violets so they don't spread where not wanted.

Cultural Control
As a perennial weed, managing wild violet typically requires repeated control. In lawns, it is best

controlled by maintaining a healthy stand of turf that can compete with the violets. In landscape beds, hand digging is effective. Remove the entire plant, including rhizomes and coarse roots.

Post-emergent herbicides can be used from mid-spring to early summer and from mid- to late fall when violets have reached the two leaf stage and are actively growing. Products that target broadleaf weeds are appropriate for controlling wild violet in lawns.

Wild violet spreads by seed, so mulches and pre-emergent herbicides applied in late summer and early fall will prevent germination of this weed.

Yellow Woodsorrel
Oxalis stricta

Photo by Leslie Peck

Photo: turffiles.ncsu.edu

Life Cycle: Perennial

Appearance and Growth Habit
Yellow woodsorrel grows upright and 4 to 10 inches tall. Leaves are alternate and trifoliate, with three heart-shaped pinnate leaflets, 0.5 to 1 inch wide, and smooth margins. Yellow woodsorrel has fibrous roots, with a shallow taproot.

Woodsorrel typically blooms from March through April. The plant has yellow flowers are about 0.25 inch with five fused petals. Fruits are narrow capsules 0.5 to 1 inch long with a stalk that bends just below capsule. The fruits look like miniature okra pods and contain many seeds that can be expelled up to 16 feet.

General Information
Yellow woodsorrel, native to North America, prefers dry to moist, well-drained alkaline soils and can grow in nutritionally poor soil. Yellow woodsorrel spreads by rhizomes and stolons, as well as by seed. It grows best in spring or fall, but is present throughout the year. Woodsorrel can lead to other pest issues, as this weed often harbors white flies and mites.

A similar, shorter species, creeping woodsorrel (*Oxalis corniclata*), can be distinguished by its purplish leaves. Creeping woodsorrel is a pernicious weed with erect seed capsules. It spreads by rhizomes into mats.

Methods of Control
Begin control of yellow woodsorrel in early spring and expect to repeat with the desired control method as plants reappear in order to prevent seed set.

Mulches can prevent germination of yellow woodsorrel in landscape beds. Pre-emergent herbicides also will control germinating seed, however weeds may still appear from rhizomes and stolons.

Hand pulling to prevent seeding must be done repeatedly. In severe infestations, removal of plants with a layer of soil may be required. Post-emergent herbicides will control yellow woodsorrel.

ADDITIONAL RESOURCES

North Carolina Agricultural Chemicals Manual:
https://content.ces.ncsu.edu/north-carolina-agricultural-chemicals-manual

North Carolina Extension Gardener Handbook: https://go.ncsu.edu/eg-handbook
- Chapter 6: Weeds
- Chapter 8: Integrated Pest Management

NC State Extension Weeds Information Portal: https://weeds.ces.ncsu.edu

NCSU Turffiles: https://www.turffiles.ncsu.edu

Southeastern US Pest Control Guide for Nursery Crops and Landscape Plantings:
https://content.ces.ncsu.edu/southeastern-us-pest-control-guide-for-nursery-crops-and-landscape-plantings

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Information contained within this guide was compiled from Cooperative Extension resources in various states.

ABOUT N.C. COOPERATIVE EXTENSION

N.C. Cooperative Extension is a strategic partnership of NC State Extension, The Cooperative Extension Program at N.C. A&T State University, USDA's National Institute of Food and Agriculture (USDA-NIFA), and local governments statewide.

Extension professionals in all 100 counties and with the Eastern Band of Cherokee Indians connect millions of North Carolinians with research-based information and technology from NC State and N.C. A&T. Educational programs specialize in agriculture, food and nutrition, 4-H youth development, community development and the environment.