

## WEEDS

A simple definition for a weed from a human perspective would be ‘a plant out of place’, and this naturally means that a weed in one place may not be a weed in another. Weeds are not always included in the same category of ‘pests’ as insects and other invertebrate or vertebrate pests. This is because their threat to humans is not as severe, and most weeds do not affect most humans directly. However, the broadest definition of a pest includes any organism that is detrimental to human interests, and in that sense weeds are important pests because they invade outdoor spaces in community environments, such as gardens, lawns, parks, and landscapes. In general, weeds have the ability to invade, propagate, compete, and survive among the surrounding ‘desired’ plants. Some of these characters include ability to reproduce by seeds and/or vegetative structures, high rate of seed production and dispersal, adaptations of seeds and vegetative plant parts to undergo dormancy for long periods of time. Many weeds can also survive in frequently disturbed environments as well as under shade, drought, and other stressful environmental conditions.

No plant is a weed in nature and they may not necessarily look objectionable or different from other plants that are desired to be grown in a particular area. They are so common that most people may appreciate their flowers or color and not recognize or understand the detrimental impact they have on crop production and landscape aesthetics. From an agricultural or turf and landscape systems management perspective, weeds constitute the most serious pest constraint. As a result herbicides often account for the majority of actual pesticide use.



Weeds around a play area for children  
Photo: Dawn Gouge

Major problems caused by weeds include interfering and competing with cultivated and desirable plants for space, light, water and soil nutrients, reducing crop yields, interference with cultural operations and harvest, and serving as alternate hosts for other crops pests and diseases. Some weeds produce chemicals that are toxic to crop plants and animals, and can cause allergic reactions in humans. Around homes and structures, weeds deter from the aesthetics and functionality of the landscape. They can be trip hazards when growing on sports fields and playground turfs, and can serve as hiding places and access pathways for arthropods and rodents when they grow too close to a structure. Weeds can also cause structural damage when their roots grow into and around fence lines, drains, road surfaces and structural foundations.

Despite their general negative characteristics, weeds may have beneficial effects in the community environment and it is important to consider specific needs or requirements of an area before trying to control all of them. In the desert ecosystem, weeds may be a living mulch that can prevent soil moisture loss and erosion by holding the soil together. Leguminous weeds improve soil fertility by fixing atmospheric nitrogen. Some have medicinal value, others are used as food for humans and animals, while some attract pollinators and other beneficial insects that prey on harmful pests. Integrating and maintaining areas of the community landscape as 'naturalized areas' that require minimal interference with less fertilizers, tillage operations or pesticides, may help to utilize the beneficial aspects of these plants.

Weed management in community environments may be complicated due to the presence of a wide variety of plants. Typically, landscapes have annuals and perennial ornamentals, bedding plants, herbs, shrubs, trees and turfgrass areas ranging from small home lawns to sports fields and playgrounds or golf courses. Identification of weeds among these diverse plants is the first step in their management.

Weeds can be classified in different ways, based on their biology, life cycle, ecology, habitat, and other characteristics. One of the most common starting points in weed identification is classifying them based on their botanical biology, into eudicotyledons (broadleaved) and monocotyledons (narrow-leaved grasses), followed by further taxonomic classification to family, genus and species level. Weeds may also be categorized according to their pest status or importance from a management perspective. Such classes include nuisance, noxious or invasive weeds. Another common method is to classify them according to their growth cycle and seasonality. This system includes categories such as winter annuals (germinate in the fall and grow, flower and set seed through winter and spring); summer annuals (germinate in spring and grow, flower and set seed through the summer); biennials (complete their life cycle over two years); and perennials (continuously re-grow over several years). The following sections will describe weeds using a combination of the above categorizations.

## WINTER ANNUAL BROADLEAVED WEEDS

**CLOVERS** are small, leguminous plants with typically trifoliate leaves, and small dense flower heads with small red, purple, white, or yellow flowers. They fix atmospheric nitrogen with the help of symbiotic bacteria in their roots. True clovers belong to the genus *Trifolium*, but other closely related genera such as *Medicago* and *Melilotus* are also referred to as clovers.

**Common name(s):** Annual sweet clover  
**Scientific name:** *Melilotus indicus*, **Family:** Fabaceae

**Distribution:** Worldwide

**Description and ID characters:** Tall, erect plants, growing to about 5 feet, with spreading branches. Plants are herbaceous at first, but may become woody at the base by the second year. Leaves are alternate with toothed edges, seen in groups of three to five egg-shaped leaflets, middle leaflet on a separate stalk. Flowers are bright yellow, and formed in small spikes mostly at the top of the plant. Fruits are small pods with one kidney-shaped bean seed each.

**Best identifying feature(s):** Small yellow or white flowers spikes.

**Habitat:** Gardens and ornamental landscape areas, unmanaged and disturbed areas

**Life cycle:** Winter annual in the low desert or biennial at higher elevations.

**Propagation:** Seeds.

**Similar plants:** Perennial sweet clover *M. officinalis*, with larger flowers.



Annual sweet clover fruits  
Photo: Forest and Kim Starr



Annual sweet clover  
Photo: Christian Hummert

**Common name(s):** Black medic, black medick

**Scientific name:** *Medicago lupulina*, **Family:** Fabaceae

**Distribution:** Worldwide

**Description and ID characters:** Low growing, hairy broadleaf plant. Main stem branches near base, and side branches grow almost prostrate to the ground with their tips growing upwards. Leaves are alternate with slightly toothed edges, in groups of three oval leaflets on a petiole. Center leaflet is on a separate petiole. Flowers are small, slender pea-like flowers in a dense rounded flower head. Fruits are kidney-shaped pods, black when mature.



Black medic  
Photo: Karan A. Rawlins

**Best identifying feature(s):** Small yellow flowers in tight clusters, kidney-shaped pods.

**Habitat:** Agricultural land, landscapes, turf, unmanaged areas

**Life cycle:** Winter annual or biennial, sometimes short-lived perennial.

**Propagation:** Seeds, adventitious buds on roots.

**Similar plants:** Other clovers such as burclover and other plants with three leaflets and small yellow flowers such as common yellow woodsorrel.



Black medic pods  
Photo: Forest and Kim Starr

**Common name(s):** Burclover, toothed medic

**Scientific name:** *Medicago polymorpha*,

**Family:** Fabaceae

**Distribution:** Worldwide

**Description and ID characters:** Low growing, hairless, broadleaf plant, height up to 2 feet. Main stem branches near base, and side branches grow almost prostrate to the ground with their tips growing upwards, and often root at the nodes. Leaves are alternate with toothed edges and reddish mid-veins, seen in groups of three oval leaflets on a long petiole. Center leaflet is on a separate petiole. Flowers are small, slender and pea flower-like, in a small rounded flower head. Fruits are dark, tightly coiled pods, with rows of hooked prickles or burs that can attach to shoes and clothing of humans, and fur of pets and grazing animals.

**Best identifying feature(s):** Small yellow flowers in tight clusters, fruit with burs.

**Habitat:** Agricultural land, landscapes, low density turf, unmanaged areas

**Life cycle:** Winter annual.

**Propagation:** Seeds, adventitious buds on roots.

**Similar plants:** Other clovers and other plants with three leaflets and small yellow flowers such as common yellow woodsorrel.



Burclover  
Photo: Christian Hummert



Burclover fruits  
Photo: Karan A. Rawlins

**Clover look-alike:**

**Common name(s):** Oxalis, yellow woodsorrel

**Scientific name:** *Oxalis stricta*, *O. corniculata*, **Family:** Oxalidaceae

**Distribution:** Worldwide

**Description and ID characters:** Low-growing, creeping broadleaf plant with prostrate stems about 1 foot long. Leaves resemble clover leaves, but have three

heart-shaped leaflets on long stalks (about 2-3 inches in length), green or tinged with purple. Flowers are bright yellow with 5 petals, and seen in clusters of 2-5 arising from a leaf stalk. Fruits are capsules with five lobes, with several seeds.

**Best identifying feature(s):** Small yellow five-petal flowers, heart-shaped leaflets, creeping habit. Leaves and stems contain oxalic acid (from which their name is derived), giving the leaves a sour taste.

**Habitat:** Gardens and ornamental landscape areas, fields, turf, unmanaged areas, greenhouse containers, nurseries.

**Life cycle:** Winter annual or perennial.

**Propagation:** Seeds, adventitious roots.

**Similar plants:** Yellow clovers.



Yellow wood sorrel  
Photo: Francois Van Der Biest

**COMPOSITES** are plants belonging to the diverse aster/daisy/sunflower family (Asteraceae or Compositae). They are characterized by the typical composite flower heads, consisting of two kinds of florets – disc florets arranged in a tight circle in the center, and ray florets arranged around them, pointing outwards.

**Common name(s):** Groundsel, common groundsel

**Scientific name:** *Senecio vulgaris*, **Family:** Asteraceae

**Distribution:** Worldwide.

**Description and ID characters:** Plants are low-growing rosettes when young, and grow erect upon maturity reaching about 2 feet in height. Plants may be single-stemmed or have branches arising from the base, stems are hollow. Leaves are variously shaped, with deep lobes and toothed edges, arranged at equal intervals along the stem. Lower leaves are larger and stalked while the upper leaves are smaller and directly attached to the stem. Some leaves are hairless, while others have long, delicate hairs. The flower head does not open out, and consists of tiny yellow disc florets arranged in a cluster at the tip of the flowering stem, with small green bracts with black tips closely arranged around their base. Ray florets are absent. When mature, the flower head dries up and opens out into a white puffball, resembling a dandelion seed head. Fruits are tiny and formed under each individual flower on the flower head. They are brown in color, elongated with shallow grooves, and a tuft of delicate hairs attached to one end that help dispersal. Each fruit contains one seed.



Common groundsel  
Photo: Robert Vidéki, Bugwood.org

**Best identifying feature(s):** Closed flower head with tiny yellow flowers clustered and enclosed within green bracts.

**Habitat:** Vegetable and alfalfa fields, orchards, gardens, turf, parks, roadsides and unmanaged areas.

**Life cycle:** Winter annual, sometimes perennial.

**Propagation:** Seeds.

**Similar plants:** Dandelion (flower heads after maturity).

**Common name(s):** Prickly lettuce

**Scientific name:** *Lactuca serriola*, **Family:**

Asteraceae

**Distribution:** Worldwide.

**Description and ID characters:** Plants are low-growing rosettes when young, and grow erect upon maturity reaching about 6 feet in height, with several branches towards the top of the main stem. Stems are thick and hairless, and exude a milky sap when cut. Lower leaves are larger, deeply lobed and stalked while the upper leaves are smaller and directly attached to the stem, with two basal lobes clasping it. All leaves have rows of stiff bristles or prickles along their edges and lower mid-veins. Flowers are clustered at the tip of flowering stems. Flower heads open out partially, revealing pale yellow ray florets with a circle of dark green, purplish tinged bracts enclosing their bases. Mature flower heads dry up but do not open out into a ball. Fruits are small, spear-head shaped, flat and brown in color, with rows of barbs. Each fruit is attached to a long stalk which has a tuft of fine hairs on the other end. Each fruit contains one seed.

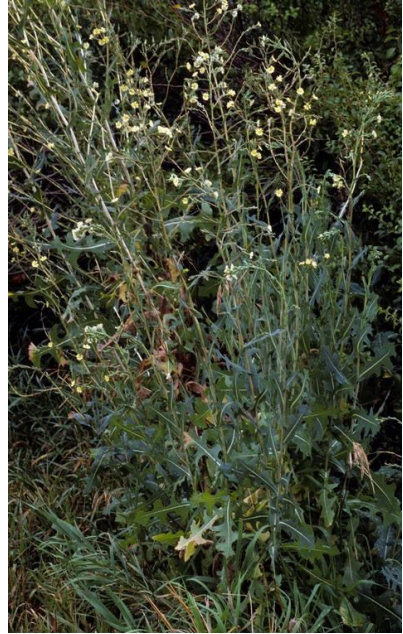
**Best identifying feature(s):** Pale yellow flowers, leaves with rows of prickles along the sides and lower mid-veins.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas.

**Life cycle:** Winter annual in the low desert or biennial.

**Propagation:** Seeds.

**Similar plants:** Bitter lettuce, spiny sowthistle.



Prickly lettuce plants

Photo: Ohio State Weed Lab Archive



Prickly lettuce leaf showing spines on lower mid-vein

Photo: Mary Ellen Hart

**Common name(s):** Sowthistle

**Scientific name:** *Sonchus* spp., *S. oleraceus* is most common, **Family:** Asteraceae

**Distribution:** Worldwide.

**Description and ID characters:** Plants are low-growing rosettes when young, and grow erect upon maturity reaching about 1 ½ feet in height, with single or branched main stem. The stem is hollow and exudes a milky sap when cut. Lower leaves are larger, deeply lobed and stalked while the upper leaves are smaller, with two basal lobes and directly attached to the stem. All leaves are dark bluish-green and hairless. Flowers are clustered at the tip of flowering stems. Flower heads open out fully, with yellow disc and ray florets. Mature flower heads dry up and appear as slightly flattened, white fluffy balls (not perfectly spherical). Fruits are tiny and formed under each individual flower on the flower head. They are flat and brown in color, with a tuft of delicate hairs attached to one end that help dispersal. Each fruit contains one seed.



Common sowthistle  
Photo: Christian Hummert

**Best identifying feature(s):** Open, daisy-like yellow flowers.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas. Some species of sowthistles are invasive, and many serve as alternate hosts to important sap-sucking crop pests such as aphids, that can vector plant viruses.

**Life cycle:** Winter or summer annual.

**Propagation:** Seeds.

**Similar plants:** Dandelion, false-sowthistle, blue sowthistle.

**MUSTARDS** belong to the mustard family (Brassicaceae) and are characterized by a sulfur-like odor due to chemicals contained in various plant parts, and their thin, tubular pods containing numerous seeds.

**Common name(s):** Black mustard.

**Scientific name:** *Brassica nigra*, **Family:**

Brassicaceae

**Distribution:** Worldwide.

**Description and ID characters:** Plants are typical low-growing rosettes when young, and reaching 2-6 feet when mature. Young leaves are deeply lobed, upper leaves are narrow and elongated. Flowers are bright yellow, with 4 petals and appear as a compound flower (raceme). Fruits are long, thin capsules with four lobes, each full of round black seeds.

**Best identifying feature(s):** Long, thin pods, bright-yellow compound flowers.



Black mustard  
Photo: Teun Spaans

**Habitat:** Crop fields, gardens, unmanaged areas and landscapes.

**Life cycle:** Winter annual or perennial.

**Propagation:** Seeds.

**Similar plants:** Other mustards.

**Common name(s):** London rocket

**Scientific name:** *Sisymbrium irio*, **Family:**

Brassicaceae

**Distribution:** Worldwide

**Description and ID characters:** Young plants are short and rosette-like till flowering stems develop. Mature plants are erect, growing to about 2 feet, with branches arising from the base. Lower rosette leaves are about 6 inches long and deeply lobed, whereas upper leaves are narrow and oblong, up to 4 inches long, with no stalks, but two basal lobes clasping the stem. Flowers are formed in small clusters at the tip of the upright flowering stems. They are pale yellow or cream colored, elongated with four petals. Fruits are long, thin cylindrical pods, mostly straight or slightly curved, about 2 inches long, containing small oblong, red seeds.

**Best identifying feature(s):** Long, thin mustard-like pods, yellow flowers.

**Habitat:** Gardens and ornamental landscape areas, fields, low-density turf, unmanaged areas, greenhouse containers, nurseries. Often found in urban environments which get adequate winter rainfall.

**Life cycle:** Winter annual.

**Propagation:** Seeds.

**Similar plants:** Flixweed, tumble mustard.

**Common name(s):** Saharan mustard, African mustard.

**Scientific name:** *Brassica tournefortii*, **Family:**

Brassicaceae

**Distribution:** Worldwide, in low desert environments.

**Description and ID characters:** Plants are typical mustard-like, rosettes when young, and produce a single upright flowering stem growing to about 3 feet when mature. Rosette leaves are lobed, upper leaves are narrow and elongated. Flowers are light yellow in color, with 4 petals. Fruits are long, thin capsules. Seeds disperse from the dried pods with the slightest



London rocket  
Photo: Joseph M. DiTomaso



Sahara mustard  
Photo: Joseph M. DiTomaso



Sahara mustard flowers and young fruit  
Photo: Stan Shebs



moisture during rain, and once moistened, become sticky and attach to animals, or other moving objects.

**Best identifying feature(s):** Long, thin mustard-like pods, light-yellow flowers, sticky seeds.

**Habitat:** Throughout low desert landscapes, gardens, fields, turf, unmanaged areas, and roadsides. Invasive and variously adapted to desert life, surviving long periods without rain, and extreme heat.

**Life cycle:** Winter annual.

**Propagation:** Seeds.

**Similar plants:** Tumbleweed, other mustards.

**Common name(s):** Shepherd's purse.

**Scientific name:** *Capsella bursa-pastoris*, **Family:** Brassicaceae



Shepherd's purse plants  
Photo: H. Zell



Shepherd's purse flowers and fruits  
Photo: Mary Ellen (Mel) Harte

**Distribution:** Worldwide, in Mediterranean and temperate environments.

**Description and ID characters:** Plants are typical low-growing rosettes when young, and reaching about 2 feet when mature, with branches towards the upper portion. Young leaves are lobed, upper leaves are narrow, elongated and fewer in number towards the top of the plant. Leaves are lightly covered with hairs. Flowers are small and white or tinged with pink, with 4 petals and are arranged on a loosely arranged compound flower head (raceme). Fruits are flat, triangular or heart-shaped pods with long stalks, and have two chambers within.

**Best identifying feature(s):** Triangular, purse-like pods, pale pink or white flowers.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas.

**Life cycle:** Winter annual, sometimes perennial.

**Propagation:** Seeds.

**Similar plants:** Other mustards, radish.

**Common name(s):** Swinecress, wartcress

**Scientific name:** *Coronopus didymus* (lesser swinecress), *C. squamatus* (greater swinecress), **Family:** Brassicaceae

**Distribution:** Worldwide, in Mediterranean and temperate environments.

**Description and ID characters:** Plants are typical low-growing rosettes when young, and are spreading when mature, with many hairy branches growing flat on the ground. Young leaves are lobed, later leaves are narrow, elongated and fewer in number towards the tips of the stem. Leaves are lightly covered with hairs and look feathery. Flowers are small and white or purplish, with 4 petals and may be found at the plant base or arranged on a thick spike. Fruits are oval, wrinkly pods, each with two chambers containing one seed.

**Best identifying feature(s):** Flat, spreading growth with feathery leaves, lesser swinecress has a strong odor when leaves are crushed, wrinkly pods.

**Habitat:** Vegetable and alfalfa fields, orchards, gardens, turf, parks, roadsides and unmanaged areas.

**Life cycle:** Winter or summer annual, sometimes biennial.

**Propagation:** Seeds.

**Similar plants:** Wild celery.



Lesser swinecress plants  
Photo: Forest and Kim Starr



Greater swinecress flower stalk  
Photo: Joseph M. DiTomaso

**Common name(s):** Wild radish.



Wild radish plants  
Photo: Joseph M. DiTomaso



Wild radish flower and fruits  
Photo: Forest and Kim Starr

**Scientific name:** *Raphanus raphanistrum*, **Family:** Brassicaceae

**Distribution:** Worldwide, in Mediterranean climates.

**Description and ID characters:** Plants are typical low-growing rosettes when young, and reaching about 2 feet when mature, with branches towards the upper

portion. Young leaves are lobed, upper leaves are narrow and elongated, all leaves are covered with sparse, stiff flattened hairs, more towards the leaf bases. Flowers are larger than mustard flowers, up to 1 inch in diameter with 4 petals, petals are cream or pinkish with purple tinge and dark purple veins. Fruits are long, narrow capsules with four lobes, fleshy when young, and dry and hard with distinct ridges when mature.

**Best identifying feature(s):** Mustard-like plant with larger white to pinkish flowers, leaves covered with spines.

**Habitat:** Crop fields, orchards, gardens, parks, roadsides and unmanaged areas. Invasive species.

**Life cycle:** Winter or summer annual, sometimes biennial.

**Propagation:** Seeds.

**Similar plants:** Other mustards, radish.

## OTHER COMMON WINTER ANNUALS

**Common name(s):** Cheeseweed, little mallow

**Scientific name:** *Malva parviflora*, **Family:** Malvaceae

**Distribution:** Worldwide.

**Description and ID characters:** Young plants first appear as low rosettes, but turn into low, erect growing woody plants, reaching up to 3 feet when mature. Leaves are alternately arranged along the stem, and have 5-7 shallow lobes with wavy edges, and a red spot at the leaf base. Flowers are small, white, pale pink or purple in color with 5 petals, and found in clusters at each leaf base on flowering stems. Fruits are light or yellowish-green in color, round and slightly flattened, shaped like a wheel of cheese with 5 wedge-shaped sections, often covered with remnants of the floral parts. Each section of the fruit contains one reddish-brown, kidney-shaped seed. Seedlings grow a strong taproot that makes it hard to uproot.

**Best identifying feature(s):** Resemblance to cotton plants, 5-7 lobed leaves, white or pink flowers.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas.

**Life cycle:** Winter annual, biennial or short-leaved perennial.

**Propagation:** Seeds.

**Similar plants:** Bristly mallow



Cheeseweed plant  
Photo: Forest and Kim Starr



Cheeseweed flower  
Photo: José María Escolano



Cheeseweed fruits  
Photo: Curtis Clark

**Common name(s):** Chickweed, common chickweed, chickenwort, winterweed

**Scientific name:** *Stellaria media*, **Family:** Caryophyllaceae

**Distribution:** Worldwide in Mediterranean climates.

**Description and ID characters:** Low

growing herbaceous plant, often growing in thick mats. Stems have a band of fine white hairs only on one side. Leaves are widely oval in shape, with a pointed tip and mostly hairless. They are arranged oppositely and at equal

intervals on the stem. Lower leaves are smaller and stalkless, while the upper ones are larger and stalked. Flowers are distinctly attractive, with 5 white petals each with 2 deep lobes, making them appear as 10 separate petals. Flowers are produced in loose clusters towards the tips of the flowering stalks. Fruits are small, green egg-shaped pods which are formed very quickly after flowering. Each fruit contains numerous seeds, which are flat, round, reddish-brown in color, and covered with tiny warts.

**Best identifying feature(s):**

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas. Can harbor sap-sucking crop pests that vector plant viruses, and various leaf-feeding caterpillars.

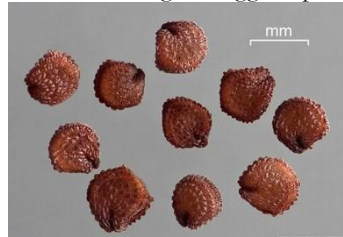
**Life cycle:** Winter annual or biennial.

**Propagation:** Seeds, occasionally by rooting at prostrate stem joints.

**Similar plants:** Sticky chickweed, other chickweeds



Chickweed plant with flowers  
Photo: K.D. Zinnert



Chickweed seeds  
Photo: D. Walters and C. Southwick

**Common name(s):** Knotweed, prostrate knotweed

**Scientific name:** *Polygonum arenastrum* **Family:**

Polygonaceae

**Distribution:** Worldwide.

**Description and ID characters:** Prostrate plant, growing flat on the ground with numerous long, wiry stems, each with multiple branches, growing in a zig-zag pattern. Individual stems can grow up to 4 feet in length. They are dark grayish-green in color, with longitudinal ribs and swollen nodes that look like knots. Leaves are narrow and elongated oval in shape, bluish-green in color and arranged alternately on the stems. Flowers are not distinctive. Individual flowers have no petals, and have five tiny green sepals with white or pink borders and appear in tight clusters on short stalks at the bases of leaves all along the stem. Fruits are tiny, and enclosed within the floral parts and contain a single seed.



Prostrate knotweed  
Photo: Joseph M. DiTomaso



Prostrate knotweed flowers  
Photo: Joseph M. DiTomaso

Seeds are shiny, dark reddish-brown, with one pointed and one rounded end.

**Best identifying feature(s):** Prostrate, zig-zag growth pattern, stem does not exude milky sap on breaking (this can help differentiate knotweed from spurges, which have milky sap).

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas, thrives in compacted soil.

**Life cycle:** Winter annual or short-lived perennial.

**Propagation:** Seeds.

**Similar plants:** Spurges, common knotgrass (*P. aviculare*)

**Common name(s):** Redstem filaree, common stork's-bill, pinweed

**Scientific name:** *Erodium cicutarium*,

**Family:** Geraniaceae

**Distribution:** Worldwide in Mediterranean, subtropical and temperate climates.

**Description and ID characters:**

Plants are low-growing rosettes when young, with fern-like leaves. Mature flowering stems grow upward reaching 2-3 feet and have a reddish tinge. They are hairy and sticky. Upper leaves are also deeply lobed. Flowers are 5-

petaled, bright pink or purplish-pink with dark center, arranged in a loose cluster towards the top of the flowering stems. Fruits are long pods with 5 sections, and resemble a stork's head and beak when immature. On maturity, the sections separate and burst open, sending the seeds flying into the air. Seeds have a spring-like awn on one end, which is tightly coiled in the immature state, which aids in seed dispersal. The awn also changes shape on contact with soil moisture and helps the seeds to bury themselves in the soil, thus preventing desiccation and enhancing seed survival.

**Best identifying feature(s):** Bright pink flowers, immature fruits resembling stork's head facing upwards.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas. Invasive in low desert and arid grasslands.

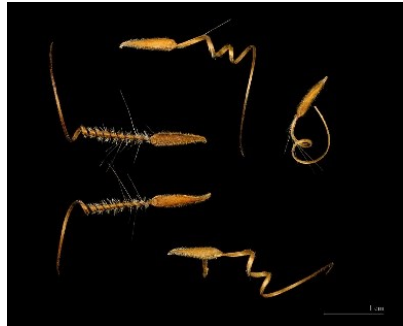
**Life cycle:** Winter annual or biennial.

**Propagation:** Seeds.

**Similar plants:** Whitestem filaree, broadleaf filaree



Redstem filaree plant, flowers, fruits  
Photo: Michael J. Plagens



Redstem filaree seeds  
Photo: Didier Descouens

**Common name(s):** Wild carrot, Queen Anne 's lace

**Scientific name:** *Daucus carota*, **Family:**

Apiaceae

**Distribution:** Worldwide in Mediterranean type climates.

**Description and ID characters:** Low growing herbaceous plant, reaching up to 4 feet at flowering. Young plants are rosettes with bright green, fern-like leaves covered with fine, upright hairs. Older leaves have 3 lobes, all finely divided and lacy. Leaves are alternately arranged along the stem, lower leaves have long stalks, but upper leaves are not stalked. Flowering stems are taller, hollow, with longitudinal ridges, and have sparse leaves and branches. Flowers are tiny and white in color, arranged in distinct, dense umbrella-shaped clusters, the flowers in the middle of the cluster may have a pink or purple tinge. Fruits are brown in color, elongated oval shaped, with 5 ridges covered with short bristles, and a short stalk at one end. Biennials grow a strong taproot that is used to store food through the winter. Crushed leaves and roots give off a typical carrot smell.

**Best identifying feature(s):** Bright green, feathery or frilly leaves, small umbrella-shaped compound flowers.

**Habitat:** Crop fields, orchards, gardens, parks, roadsides and unmanaged areas.

**Life cycle:** Winter annual, biennial or short-leaved perennial.

**Propagation:** Seeds.

**Similar plants:** Wild celery, wild parsley



Wild carrot  
Photo: Chris Evans

**Common name(s):** Wild celery

**Scientific name:** *Cyclospermum leptophyllum*,

**Family:** Apiaceae

**Distribution:** Worldwide.

**Description and ID characters:** Low growing, hairless, herbaceous plant, stems can be prostrate or with tips growing upward, reaching about 2 feet at flowering. Leaves are divided into thread-like lobes, giving them a feathery appearance. They are alternately arranged along the stem, lower leaves have long stalks, but upper leaves are not stalked. Flowers are tiny white flowers with 5 petals, formed in distinct umbrella-shaped clusters with flat tops (umbels). Fruits are elongated oval in shape, slightly curved with one pointed end, flattened and hairless, with 5 ridges and light brown in color.

**Best identifying feature(s):** Thread-like green leaves and small umbrella-shaped



Wild celery plant  
Photo: Forest and Kim Starr



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Wild celery flowers  
Photo: Joseph M. DiTomaso

compound flowers.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas.

**Life cycle:** Winter or summer annual.

**Propagation:** Seeds.

**Common name(s):** Wild parsley

**Scientific name:** *Petroselinum crispum*, **Family:** Apiaceae

**Distribution:** Worldwide in Mediterranean type climates.

**Description and ID characters:** Low growing herbaceous plant, reaching up to 2 feet at flowering. Young plants are rosettes with several bright green, three-lobed leaves with feather-like divisions along their edges, giving them a frilled appearance. Flowering stems are taller and have sparse leaves. Flowers are yellowish-green in color, arranged in distinct, umbrella-shaped clusters. Fruits are brown in color, elongated oval shaped, with a prominent stalk at one end. Biennials grow a strong taproot that is used to store food through the winter.



Wild parsley  
Photo: H. Zell

**Best identifying feature(s):** Bright green, feathery or frilly leaves, small greenish yellow umbrella-shaped compound flowers. Leaves and stems are mildly aromatic when crushed, the smell lasting for 10-15 seconds.

**Habitat:** Crop fields, orchards, gardens, parks, roadsides and unmanaged areas.

**Life cycle:** Winter annual or biennial.

**Propagation:** Seeds.

**Similar plants:** Wild celery, wild carrot, ammi

## SUMMER ANNUAL BROADLEAVED WEEDS

**Common name(s):** Field bindweed

**Scientific name:** *Convolvulus arvensis*,

**Family:** Convolvulaceae.

**Distribution:** Worldwide.

**Description and ID characters:**

Climbing or creeping plant, may stand up to 1 foot without support. The plant has a well-developed and deep root system, extensive underground horizontal stem (rhizome), as well as above ground stems which can grow up to 5 feet in length or more. Leaves are spirally arranged along the stem, and are elongated and shaped like shovels or arrowheads, the mature leaves have lobes at the base near the stem. Flowers are trumpet-shaped, about 1 inch in diameter, and borne on stalks also about 1 inch in length. They have five, white or pale pink petals, sometimes with a slightly darker shade along the border and the mid-line of each petal. Fruits are small, light-brown, rounded capsules with a pointed tip, borne on the flower stalks. Each capsule has 2 sections, containing 1-2 seeds. Seeds are dark brown, slightly flattened and broadly diamond-shaped in outline. They are dispersed when the capsules burst open or when eaten by birds, and can remain viable in the soil for several years.

**Best identifying feature(s):** Attractive white or pale pink trumpet-shaped flowers, creeping or trailing stems.

**Habitat:** Crop fields, gardens, parks, turf, roadsides and unmanaged areas. Especially problematic in grain crops, potatoes and beans. Can harbor certain viruses that cause diseases in crop plants, such as potato X disease and tomato spotted wilt. Grows rapidly and often chokes other plants, and is therefore undesirable, even though the flowers are attractive. Well adapted to highly compacted soils and low-moisture areas.

**Life cycle:** Summer annual or perennial.

**Propagation:** Seeds, underground stems (rhizomes).

**Similar plants:** Morning glories



Field bindweed  
Photo: Mary Ellen (Mel) Harte



Field bindweed fruits (left) and seeds (right)  
Photo: Julia Scher, USDA-APHIS PPQ



Field bindweed infestation  
Photo: Howard F. Schwartz



**Common name(s):** Goathead, puncturevine, tackweed

**Scientific name:** *Tribulus terrestris*,

**Family:** Zygophyllaceae.

**Distribution:** Worldwide.

**Description and ID characters:** Low

growing plant, up to 1 foot in height or

slightly taller in shade, forming dense

mats 2-5 feet in diameter with

branching, hairy stems radiating from a

crown. Leaves are oppositely arranged

on the stem and are compound, with 4-8

pairs of leaflets, also oppositely arranged

on the main stalk. Flowers are produced

in leaf axils, and are about ½ inch wide, with 5 lemon

yellow petals. Fruits are pods which appear as clusters of

short, sharp spines. Each fruit has 5 parts, each

containing 3-5 seeds. The fruit parts or ‘nutlets’ separate

easily, and each has 2-4 short, sharp and strong upward-

pointing spines on its surface, giving a resemblance to the

head of a goat or other horned animal, or a caltrop (a

metal device placed on roads or other areas to deter

vehicles or pedestrians, that has numerous upward

pointing spikes). These spines attach and often pierce

into to passing objects such as vehicle tires, shoes,

clothing or fur of animals. They are sharp enough to

injure bare skin and soles of the feet, and the insides of the mouth and digestive

tract of animals if ingested. The plants can also be mildly toxic to sheep and similar

livestock. Fruits tangled in sheep wool cause degradation of wool quality.



Goathead plants and flowers  
Photo: Howard F. Schwartz



Goathead nutlets attached to the  
bottom of a shoe  
Photo: Eric Coombs



Goathead fruits  
Photo: Forest and Kim Starr



Goathead-dry separated nutlets  
Photo: Cesar Calderon

**Best identifying feature(s):** Compound leaves, lemon yellow 5-petaled flowers, distinctive, spiky fruits.

**Habitat:** Crop fields, orchards, gardens, parks, turf, roadsides and unmanaged areas. Well adapted to highly compacted soils and low-moisture areas due to a strong, deep taproot. Declared invasive in many regions.

**Life cycle:** Summer annual or perennial.

**Propagation:** Seeds.

**Similar plants:** None

**Common name(s):** Horseweed, mare's tail, fleabane

**Scientific name:** *Conyza* spp, **Family:**

Asteraceae

**Distribution:** Worldwide in temperate climates.

**Description and ID characters:** Plants are low-growing rosettes when young, and grow erect upon maturity reaching well over 5 feet in height, usually with a single main flowering stem, with few branches towards the top. The stem is thick and covered with sparse hair. Leaves are arranged alternately on the stem, and are dark green, slender, stalkless and have coarsely toothed margins. Flowers are produced at the tip of the flowering stems.

They are urn-shaped at the base, with a small pale yellow, white or pinkish flower head with a yellow center, on top. The flower heads open out and expand on maturity, resembling puffballs. Fruits are small, narrow and flat, oblong in shape with sparse hair, and a tuft of off-white or dirty white hair at one end to aid dispersal. Each fruit contains one seed.

**Best identifying feature(s):** Tall stem with elongated leaves, urn-shaped flower bases topped with pale pink or yellow flower heads.

**Habitat:** Crop fields, orchards, gardens, parks, roadsides and unmanaged areas.

**Life cycle:** Summer annual or biennial.

**Propagation:** Seeds.

**Similar plants:** Hairy fleabane (shorter and more hairy).



Horseweed/ Mare's tail  
Photo: Chris Evans



Horseweed flowers  
Photo: Graham Calow

**Common name(s):** Jimsonweed, devil's snare, datura, thorn apple, moon flower

**Scientific name:** *Datura stramonium*, **Family:** Solanaceae.

**Distribution:** Worldwide.

**Description and ID**

**characters:** Upright growing bushy plant, 2-5 feet in height, with several branches. All plant parts emit a foul smell if crushed. Stems are stout, smooth and pale green in color, and branch repeatedly into leafy forks. Leaves are 3-8 inches in length, soft and smooth, with wavy, pointed margins. They are dark green on the upper side, and lighter below. Flowers are



Jimsonweed plant- forked branching, leaves, flowers, fruit,  
Photo: Radio Tonreg

large and showy, with a distinctive smell. They are trumpet-shaped, with 5 long creamy white or pale violet petals with prominent ridges and pointed tips, on a pale green tubular calyx. The flowers can measure 6-9 inches in length, and are borne on short stalks in the leaf axils or in the branch forks. They open only partially at night, and their characteristic fragrance is attractive to moths. Fruits are egg-shaped capsules, about 2 inches in length, covered with short dense spines. Each capsule has 4 chambers, containing numerous small black seeds.

The entire plant contains certain chemicals (alkaloids) that impart a bitter taste. They are known to have numerous medicinal properties, but can be hallucinogenic and poisonous at higher doses.

**Best identifying feature(s):** Large, tubular pale violet flowers, large leaves resembling other solanaceous plants such as eggplant, spiny egg-shaped fruits.

**Habitat:** Crop fields, orchards, landscaped areas, gardens, parks, turf, roadsides and unmanaged areas. Often considered dangerous around human residences because of its potential poisonous effects.

**Life cycle:** Summer annual.

**Propagation:** Seed.

**Similar plants:** Sacred datura or moon flower.

**Common name(s):** Khakiweed, creeping chaffweed, matt chafflower

**Scientific name:** *Alternanthera caracasana*, **Family:**

Amaranthaceae

**Distribution:** Worldwide

**Description and ID characters:** Prostrate, creeping herbaceous plant, trailing to about 2 feet. Stems are light green in color, sometimes with reddish tinge, with fine teeth and soft hairs. Multiple stems grow from a crown, and roots are formed at stem nodes. The crown has a deep taproot, but other roots are shallower. Leaves are oppositely arranged in pairs, and are of various sizes, mostly oval shaped, or oval with a pointed tip, short-stalked and with sparse hairs. Undersides of the leaves have prominent veins. Individual flowers are inconspicuous, but clusters are distinctive, formed in leaf axils, surrounded by stiff, straw or tan-colored bracts resembling chaff on grains. Fruits are small capsules, covered with short, light-brown burrs and each contains a single, ovoid, shiny black seed.

**Best identifying feature(s):** Prostrate growth, prickly fruits that attach to animals, and other moving objects.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas.

**Life cycle:** Summer annual or perennial.

**Propagation:** Seeds, roots at stem nodes, root fragments.

**Similar plants:** Low amaranth



Khakiweed  
Photo: Forest and Kim Starr

**Spurges** are common low-growing weeds with succulent leaves, exuding a milky sap when plant parts are broken.

**Common name(s):** Hyssop spurge

**Scientific name:** *Chamaesyce (Euphorbia) hyssopifolia*, **Family:** Euphorbiaceae. Spotted spurge (*C. maculata*) and prostrate or creeping spurges (*C. prostrata*, *C. pepus*, *C. serpens*) are other common species.

**Distribution:** Worldwide.

**Description and ID characters:** Low, partially upright growing herbaceous plant up to 1 foot in height when competing for light. Stems are slender, light-green or tan with pinkish or reddish tinge, and exude milky sap when crushed or broken. Branches alternate along the main stem. Leaves oppositely arranged, oval or elongated oval in shape, with rounded tips and lopsided bases, short-stalked, dark grayish green in color, with dark red or purple spot or patch in the center and fine teeth along margins in some species. Flowers are small, white when formed, and turn pinkish as they age, seen in small clusters of 10-20 at the tips of flowering stalks or in smaller clusters along the stem at leaf axils. Separate male and female flowers are present in each cluster. Female flowers have a dangling, 3-sided ovary below the petals. Fruits are tiny, 3-lobed, egg shaped, hairy capsules that burst open to disperse light-brown, oblong seeds.

**Best identifying feature(s):** Prostrate growth, dark-grayish green elongated oblong leaves, reddish tinged stem that exudes sap when broken, flowers with dangling 3-sided ovary. Harbors ants.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas. Common in sandy desert washes.



Hyssop spurge  
Photo: Ethel Aardvark



Hyssop spurge flowers  
Photo: Michael J. Plagens



Spotted spurge fruits  
Photo: Rebekah D. Wallace



Spotted spurge  
Photo: Forest and Kim Starr



Prostrate spurge  
Photo: Forest and Kim Starr

**Life cycle:** Summer annual.

**Propagation:** Seeds, sometimes root at stem nodes.

**Similar plants:** Other spurges, prostrate knotweed.

**Common name(s):** Pigweed. This can include several species commonly called prostrate/low amaranth, tumble pigweed and the more problematic Palmer amaranth, which is often resistant to glyphosate.

**Scientific name:** *Amaranthus* spp. **Family:** Amaranthaceae

**Distribution:** Worldwide.

**Description and ID characters:**

**Palmer amaranth (*Amaranthus palmeri*)** is

a tall, erect branching herbaceous plant, growing up to 8 feet in height. Stems and leaves are bright green, smooth and hairless.

Leaves are large (up to 3 inches in length), oval-elliptical with pointed tips (roughly diamond-shaped), with long petioles- longer than the leaf blade, and are alternately arranged around the stem, giving a poinsettia-like appearance from the top. Flowers are tiny,

greenish-white and produced in long, tightly packed spikes in leaf axils. Individual spikes may measure over 1 foot in length. Male and female flowers are formed on separate plants. Female flowers have a ring of short rigid spines around their base giving a rough, prickly feel, while these are absent in the male flowers which are soft to the touch. Fruits are small single-seeded capsules, formed within the female flower spikes, each fruit containing a tiny, smooth, oval to round, glossy black seed.

**Best identifying feature(s):** Large oval-elliptical, roughly diamond-shaped leaves with long petioles, leaf arrangement is poinsettia-like or rosette-like when viewed from the top. Resistant to glyphosate herbicide in sites around AZ.

**Habitat:** Crop fields, orchards, gardens, lesser maintained turf, parks, roadsides and unmanaged areas. Highly aggressive and competitive, well adapted to extremely high temperatures and low rainfall, and resistant to multiple herbicides with different modes of action.

**Life cycle:** Summer annual or short-lived perennial.

**Propagation:** Seeds, new shoots can grow from plant bases after mowing or cultivation.

**Similar plants:** Spiny amaranth, and prostrate/low amaranth, tumble pigweed

**Prostrate/low amaranth (*Amaranthus deflexus*)** is a low growing, prostrate or partly erect herbaceous plant, growing up to 1 ½



Palmer amaranth  
Photo: Michael J. Plagens



Low amaranth  
Photo: Victor M. Vicente Selvas

feet in height. Stems are dull green in color with reddish tinge, and covered with short, soft hairs. Stems are slender and weak, mostly growing horizontally, but the tips pointing upwards. Individual stems can reach up to 20 inches in length. Leaves are dark, glossy green with light margins, oval-elliptical, medium sized (1-2 inches in length) and arranged alternately along the stem. Leaf stalks are almost as long as the leaf blades. Flowers are borne on shorter, less tightly-packed spikes than in Palmer amaranth, and are greenish brown or pinkish in color. Fruits are small capsules, each containing a single oval, smooth, shiny and reddish black seed. **Best identifying features** are prostrate growth habit often forming dense mats, glossy green leaves with light margins, flowers on spikes.

**Tumble pigweed (*Amaranthus albus*)** is a low growing, upright, shrub-like herbaceous plant up to 4 feet in height. Stems are pale green or white with multiple branches, giving a bushy appearance. Leaves are light green, oval or elliptical in shape and arranged alternately at close intervals on the stem. Flowers are small, greenish in color and formed in small clusters (not on spikes) in leaf axils. Flowers have long bracts, 2-4 times the length of the petals. Fruits are small capsules, each containing a single oval, smooth, shiny and reddish black seed. After flowering, the plant dries up and stems break off at the soil surface and tumble around with the wind.



Tumble amaranth  
Photo: Stefan Lefnaer

**Best identifying features** are bushy growth habit, white or pale green stems, tumbling habit after maturity.

**Common name(s):** Common purslane, hogweed, moss rose

**Scientific name:** *Portulaca oleracea*, **Family:** Portulacaceae

**Distribution:** Worldwide.

**Description and ID characters:**

Prostrate and spreading, succulent herbaceous plant, usually about 6 inches in height, but spreading up to 3 feet or more. Branches start from the base of the main stem and are thick, smooth and reddish green in color. Leaves are arranged opposite or alternately along the stem; and are thick, succulent and egg-shaped, dark green with reddish tinge, stalkless or very short-stalked. Flowers are produced singly or in small groups of



Common purslane  
Photo: Júlio Reis

2-5 at stem tips. They are small with 5 bright yellow petals. Fruits are round or oval capsules that contain numerous dark-brown or black, flat round seeds with a small beak and white dot where they were attached to the fruit.

Purslane has culinary and medicinal uses in many parts of the world. The leaves, stems, flowers and fruit are edible, and are used as a leafy vegetable. The plant is rich in omega-3 fatty acid content and is therefore considered a ‘superfood’.

**Best identifying feature(s):** Prostrate growth habit, succulent dark reddish green stems and leaves.

**Habitat:** Crop fields, orchards, gardens, turf, parks, roadsides and unmanaged areas.

**Life cycle:** Summer annual.

**Propagation:** Seeds, stem cuttings.

**Similar plants:** Spotted spurge.

**Common name(s):** Russian thistle, tumbleweed

**Scientific name:** *Salsola (kali) tragus*,

**Family:** Amaranthaceae

**Distribution:** Worldwide, with a preference for semiarid desert environments.

**Description and ID characters:** Large, bushy upright growing plant about 3-4 feet in height. Stems are stiff, green with purple or brown streaks, and multiple branches curving upwards and inwards into a tangled clump, giving the plant an overall round outline. Leaves are thick and leathery, narrow and elongated in shape with a narrow pointed tip, sometimes further tipped with a sharp spine or bristle.



Russian thistle as tumbleweed  
Photo: Pedro Tenorio-Lezama



Russian thistle  
Photo: Mary Ellen Harte



Russian thistle flowering stalk  
Photo: Stan Shebs

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Lower leaves are larger, whereas upper leaves are often reduced to stiff bristles. Leaves and stems may be hairless or covered with fine hairs. Flowers are produced in mature leaf axils, between 2 leaf-like bracts. They lack petals, but have dark pink or red sepals with dark veins. Fruits are light brown, oval capsules enclosed in the wing-like sepals. Seeds are elongated or conical, and grayish brown in color. After flowering, the plant typically dries up into a brown skeleton that breaks away at the base and tumbles around in the wind, dispersing seeds and often causing obstructions to traffic and other open, outdoor activities.

**Best identifying feature(s):** Large, bushy growth and branching habit, leaves tipped with spines, tumbleweed character towards maturity.

**Habitat:** Crop fields, orchards, gardens, abandoned turf, parks, roadsides and unmanaged areas, beaches, disturbed grassland.

**Life cycle:** Summer annual.

**Propagation:** Seeds

**Similar plants:** Tumble pigweed, tumble mustard



## WINTER ANNUAL GRASS WEEDS

**Common name(s):** Annual bluegrass, annual meadow grass, *Poa*

**Scientific name:** *Poa annua*, **Family:** Poaceae

**Distribution:** Worldwide

**Description and ID characters:** Low growing, dense and spreading clumping grass, reaching up to 1 foot in height. Stems are slightly flattened. Leaf blades are short, bright light green, hairless, with a blunt tip shaped like the bow of a boat. Leaves edges are finely toothed. Ligules are large, silvery and pointed. Flower head is open and triangular in outline, individual spikelets are stalked, lack awns and are tinged bluish or purple. Each spikelet has 3-8 flowers.

**Best identifying feature(s):** Leaf tip is blunt, shaped like the bow of a boat. Unmowed plants may have compressed “growth crinkles” on some leaves.

**Habitat:** Crop fields, orchards, gardens, turf, parks, lawns, low-mowed turf, roadsides and unmanaged areas. Any areas which receive fall-winter rainfall/runoff.

**Life cycle:** Winter annual, biennial or perennial

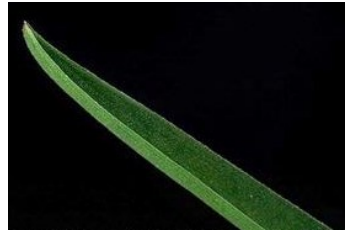
**Propagation:** Seeds.

**Similar plants:** Common meadow grass, hardgrass



Annual bluegrass

Photo: Joseph M. DiTomaso



Annual bluegrass leaf tip

Photo: Joseph M. DiTomaso

**Common name(s):** Hardgrass, common hardgrass, fairground grass

**Scientific name:** *Sclerochloa dura*, **Family:** Poaceae

**Distribution:** Worldwide

**Description and ID characters:**

Prostrate, sturdy and stiff, bunching grass, growing to a maximum height of 6 inches, forms small flattened clumps of prostrate and partly upright stems, measuring about 1 foot in diameter. Leaves have short, flat, overlapping blades with rounded tips, strongly folded, medium to dark green in color. Ligules are membranous.

Flower heads consist of short, stiff and compact groups of flattened

spikelets facing downwards. Individual spikelets lack awns, light or yellowish green in color, and contain 3 flowers.



Hardgrass

Photo: Charles T. Bryson

**Best identifying feature(s):** Small, clumping growth habit, short, stiff leaf blades, compact flower heads facing downwards.

**Habitat:** Crop fields, orchards, gardens, parks, turf, roadsides and unmanaged areas. Thrives in compacted soils.

**Life cycle:** Winter annual

**Propagation:** Seeds, roots from nodes.

**Similar plants:** Goosegrass.

**Common name(s):** Hare barley, mouse barley, leporinum barley

**Scientific name:** *Hordeum murinum* ssp. *leporinum*, **Family:** Poaceae. Wild barley (*H. vulgare* ssp. *spontaneum*) is a similar species.

**Distribution:** Worldwide



Hare barley

Photo: Joseph M. DiTomaso



Barley

Photo: Howard F. Schwartz

**Description and ID characters:** Upright, somewhat spreading grass about 3 feet in height at maturity. Leaves are long (about 8 inches), light green in color and covered with short hairs. Ligules are blunt and papery. Flower head is an elongated spike. Individual spikelets have long, stiff needle-like awns with upward pointing barbs that can get attached to grazing animals and cause irritation. Each spikelet has 3 flowers arranged around a central axis. In hare barley, the two side spikelets are larger than the central one, whereas in wild barley, only the central flower is fertile and the other two are reduced, and this condition is termed “two-row barley”. The spike breaks into several pieces when mature, facilitating seed dispersal.

**Best identifying feature(s):** Hairy leaves, flower head with long, bristly awns.

**Habitat:** Crop fields, orchards, gardens, parks, turf, roadsides and unmanaged areas.



Hare barley spikelet

Photo: D.Walters, C.Southwick



Two-row barley spikelet

Photo: Matt Lavin

**Life cycle:** Winter annual.

**Propagation:** Seeds.

**Similar plants:** Foxtail barley, common barley, wild barley.

**Common name(s):** Mediterranean grass, six-week schismus, common

Mediterranean grass

**Scientific name:** *Schismus*

*barbatus*, **Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID**

**characters:** Short, upright bunch grass, growing up to 1 foot in height, forming small clumps. Leaves are very fine and narrow, about 1/8 inch wide, with irregular jagged edges curling slightly inward. The leaves are hairless, but the ligule has a ring of short white hairs. Flower heads are short and narrow, erect panicles colored greenish-purple with 3-5 spikelets. Individual spikelets are ovate or elliptical and about 1/2 inch in length and lack awns. The seeds germinate in early winter, the plants flower in March-April and survive for up to 4 months, but remain standing for much longer.

**Best identifying feature(s):** Short stature, fine, thread-like leaves.

**Habitat:** Crop fields, gardens, parks, turf, roadsides and unmanaged areas. It is an introduced species in southwest U.S., and thrives in sandy soils. Considered invasive in several regions, because it out-competes native grasses. The plants tend to germinate in the spaces between larger desert shrubs, and utilize most of the available moisture, thus excluding other native grasses. The dried plants are a fire hazard because they serve to carry wildfires across the inter-shrub spaces in the low deserts.

**Life cycle:** Winter annual.

**Propagation:** Seeds.

**Similar plants:** Arabian schismus *S. arabicus*, also an introduced species.



Small clump of common Mediterranean grass

Photo: Michael J. Plagens



Common Mediterranean grass leaves (left) and flower head (right)

Photos: Joseph M. DiTomaso

**Common name(s):** Red brome,  
foxtail brome

**Scientific name:** *Bromus madritensis*  
ssp. *rubens* (*Bromus rubens*) **Family:**  
Poaceae

**Distribution:** Worldwide

**Description and ID characters:**

Upright, tufted bunch grass, about 2 feet in height. Several hairy stems arise from the base of a clump. Leaves are medium sized, light green in color and covered with sparse, fine white hairs. Leaves turn straw yellow towards maturity. Ligules are membranous. Flower heads are reddish-brown or purplish, drooping or nodding spikes, and consist of dense clusters of spikelets with long, needle-like awns.

**Best identifying feature(s):** Reddish or purple flower heads with long awns. Fire hazard in the desert.

**Habitat:** Open fields, gardens, parks, less maintained turf, playing fields, roadsides and unmanaged areas.

**Life cycle:** Winter annual.

**Propagation:** Seeds.

**Similar plants:** Other brome grasses, compact brome



Red brome clump  
Photo: John M. Randall



Red brome flower heads  
Photo: Matt Lavin

**Common name(s):** Rescuegrass

**Scientific name:** *Bromus catharticus*,  
**Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID characters:**

Upright and spreading bunch grass, about 2-3 feet in height. New plants appear as flattened clumps, but later grow almost upright. Stems and leaves are light green and almost smooth. Ligules are membranous. The flower head consists of a few spreading branches, the upper ones erect and the lower ones nodding or drooping. Each spikelet is extremely flat and pointed, the individual flowers are tipped with short awns.

**Best identifying feature(s):** Small, partly flat and partly upright clumping growth, flattened flower heads.



Rescuegrass clump  
Photo: Paulo Schwirkowski, Flora SBS

**Habitat:** Crop fields, pastures, parks, roadsides, right-of-way areas, forest edges, disturbed and unmanaged areas.

**Life cycle:** Perennial.

**Propagation:** Seeds.

**Similar plants:** Other brome grasses



Rescuegrass flower heads  
Photo: Forest and Kim Starr

## SUMMER ANNUAL GRASS WEEDS

**Common name(s):** Crabgrasses

**Scientific name:** *Digitaria* spp., large or hairy crabgrass-*D. sanguinalis*, smooth crabgrass-*D. ischaemum*, **Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID characters:** Sturdy grasses, growing to about 6 -12 inches in height or taller, forming flattened, spreading clumps of prostrate and slightly upright stems, measuring up to 2 feet in diameter. Stems branch at the base near the crown of the clump and are thick, flat and reddish brown or purplish in color. Leaf blades in large/hairy crabgrass are long, narrow, bright green in color, with a prominent mid-vein, and have long, hairs on both surfaces and the collar region; whereas in smooth crabgrass, the leaves are shorter and wider and lack hairs. Ligules are short and membranous. Flower heads are wide open, with 3-7 branches arranged towards the tip of the central stem (not radiating out from a central point). Each branch has densely packed spikelets arranged in rows.

**Best identifying feature(s):** Flattened, clumping growth habit, open flower



Smooth crabgrass  
Photo: Joseph Berger



Hairy crabgrass flower head  
Photo: Matt Levin

heads.

**Habitat:** Crop fields, gardens, parks, turf, playing fields and other turf, roadsides and unmanaged areas. Smooth crabgrass is more common in turf.

**Life cycle:** Summer annual.

**Propagation:** Seeds, roots at stem joints.

**Similar plants:** Goosegrass, cupgrass

**Common name(s):** Cupgrass, southwestern cupgrass

**Scientific name:** *Eriochloa acuminata*, **Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID characters:** Upright growing bunch grass, up to 4 feet in height, with multiple stems growing from the base of a clump, including some that are prostrate. Leaves are bright, light green and sparsely covered with soft, fine hairs. Ligule is long and prominent. Flower head is an upright, branching spike with 5-10 branches, each branch has light green or purplish-green spikelets arranged in rows on a central axis. Spikelets lack awns. Each spikelet has a tiny, cup-like structure at its base, giving the species its common name.



Southwest cupgrass stand  
Photo: Joseph M. DiTomaso

**Best identifying feature(s):** Upright, branching flower head with light green spikelets with cup-like structures at their base.

**Habitat:** Crop fields, gardens, turf, parks, playing fields, roadsides and unmanaged areas.

**Life cycle:** Summer annual.

**Propagation:** Seeds.

**Similar plants:** Prairie cupgrass, woolly cupgrass



Southwest cupgrass flower head (left): Photo: Joseph M. DiTomaso  
Individual spikelets (right) showing cup-like structure at the base:  
Photo: Russ Kleinman & Bill Norris

**Common name(s):** Goosegrass

**Scientific name:** *Elysiene indica*, **Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID characters:** Prostrate grass, growing to about 6 -12 inches in height, forms small flattened, spreading clumps of prostrate and slightly upright stems, measuring up to 2 feet in diameter. Stem bases are thick and fleshy near the crown and silvery in color. Leaf blades are pale green in color, with very sparse or no hair, but the leaf bases, collars and sheaths have long hairs. Ligules are short and membranous with uneven edges. Flower heads are wide open, with 2-6 spikes radiating out from a central point. Each spike has densely packed spikelets arranged in rows.

**Best identifying feature(s):** Flattened, clumping growth habit, open flower heads.

**Habitat:** Crop fields, gardens, parks, turf, playing fields, roadsides and unmanaged areas. Thrives in compacted, highly disturbed soils.

**Life cycle:** Summer annual or perennial.

**Propagation:** Seeds.

**Similar plants:** crabgrass



Goosegrass clump

Photo: Forest and Kim Starr



Goosegrass flower heads

Photo: Tau 'olunga

**Common name(s):** Six-week grama grass

**Scientific name:** *Bouteloua barbata*, **Family:** Poaceae

**Distribution:** Western U.S.

**Description and ID characters:** Short, partially upright growing bunch grass, about 1 ½ feet in height, forming medium sized, spreading clumps with both upright, branched and prostrate stems. Leaves are short and narrow, up to 2 inches in length, and ¼ inch wide. Flower heads consist of 3-10 widely spaced, short, upward-tilted branches, each with 10-30 closely packed spikelets. Individual spikelets are about ¼ inch long and light green with reddish or purplish tinges and have awns.

**Best identifying feature(s):** Short, frail appearance, narrow leaves, short flower heads with widely spaced branches.

**Habitat:** Crop fields, gardens, parks, turf, roadsides and unmanaged areas. Many animals feed on this grass, and its seeds are collected by harvester ants. Not

considered suitable for livestock because of its size and short life. Can be a fire hazard.

**Life cycle:** Summer annual.

**Propagation:** Seed.

**Similar plants:** Rothrock's grama (a perennial).



Dried up six-week grama grass plant (left) and flower heads (right)  
Photos: Matt Lavin

**Common name(s):** Liverseed grass, panic liverseed grass

**Scientific name:** *Urochloa panicoides*, **Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID**

**characters:** Medium sized bunch grass, with partially and fully upright stems up to 3 feet in length. Leaves are elongated lance-shaped, up to 12 inches long and 1/2 inch wide, bright yellowish green in color, with wavy margins. The leaf blades have hairy margins, and sparse hair scattered on the surfaces. Flower



Liverseed grass, flowering stalk and flower head  
Photo: USDA-APHIS PPQ Archive

heads are about 2 inches long, with 2-7 branches on the main stalk, and numerous spikelets arranged in a row along one side of each branch.

**Best identifying feature(s):** Bright yellowish-green, lance shaped leaves with wavy margins, short branching flower heads.



**Habitat:** Crop fields, gardens, parks, turf, roadsides and unmanaged areas. Thrive in moist areas near water bodies. Can be used as fodder. Can harbor disease-causing viruses such as maize streak virus, which can cause diseases in grain grasses.

**Life cycle:** Summer annual.

**Propagation:** Seed, roots from prostrate stem nodes.

**Similar plants:** Rescue grass



Liverseed grass, young clump  
Photo: Harry Rose

**Common name(s):** Sandbur, spiny burr, longspine

**Scientific name:** *Cenchrus longispinus*,

**Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID characters:** Upright, spreading, loose bunch grass up to 2 feet in height. Clumps can form large mats. Stems branch near the base and may also grow prostrate to spread. Leaves are broad, flat, light green and hairless on the upper side, and sparsely haired on the lower side. Ligules are membranous with a fringe of hairs. Flower heads are in the form of short, loosely packed spikes with several yellowish green burs arranged on a central axis. The burs have barbed spines all over their surface and stick to animals or other moving objects and facilitate seed dispersal. Each bur contains up to 3 seeds. Burs can cause irritation to grazing animals.

**Best identifying feature(s):** Spiny burs on the flower head.

**Habitat:** Crop fields, gardens, parks, playing fields and less maintained turf, roadsides and unmanaged areas.

**Life cycle:** Summer annual.

**Propagation:** Seeds, roots at stem joints.

**Similar plants:** Field sandbur (fewer, broader spines on the burs)



Sandbur  
Photo: Italo Specogna



Sandbur flower head  
Photo: Joseph M. DiTomaso

## PERENNIAL WEEDS

### GRASSES

**Common name(s):** Bermudagrass

**Scientific name:** *Cynodon dactylon*, **Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID characters:** Partially upright and creeping grass that can grow up to 1 foot in height. Spreads rapidly and forms large, dense mats by means of stolons (above-ground, side branches) as well as rhizomes (underground stems) and seeds. Stems are slightly flattened, light green, often tinged with purple or red and have short internodes. Leaves are narrow and short, greyish or dark green with rough edges and have sparse or no hair.

Ligules are membranous with a fringe of white hairs. Flower heads are in the form of open spikes with 4-8 slender branches radiating out from a central point at the tip of the flowering stem.

**Best identifying feature(s):** Open flower head with branches from a central point, dark or greyish green, slender leaves. Long stolons.

**Habitat:** Crop fields, gardens, parks, playing fields and other turf, roadsides and unmanaged areas. Cannot tolerate shade and becomes dormant in winter.

**Life cycle:** Summer annual or perennial.

**Propagation:** Seeds, stolons, rhizomes.

**Similar plants:** Crabgrass, cupgrass.



Bermudagrass stand  
Photo: Charles T. Bryson



Bermudagrass flowering stems (left) and single flower head (right)  
Photo: Steve Dewey



Bermudagrass spreading habit  
Photo: US National Park Service

**Common name(s):** Dallisgrass

**Scientific name:** *Paspalum dilatatum*, **Family:** Poaceae

**Distribution:** Worldwide.

**Description and ID characters:** Prostrate or upright growing, loose bunch grass, 1-5 feet in height, forming small spreading clumps. Stems are light green, flattened and joints are hairless. Leaves are short, wide and stiff, hairless, and dark green in color with swollen, hairy base tinged with red or purple. Ligules are membranous. Flower heads are distinctive and open, with 3-5 branches arising somewhat perpendicularly to one another, but drooping slightly. Each branch has neatly arranged rows of bead-like green or purple spikelets.



Dallisgrass flower head  
Photo: Joseph M. DiTomaso

**Best identifying feature(s):** Loose clumping growth habit, flattened, hairless stems, distinctive flower head pattern.

**Habitat:** Crop fields, pastures, parks, turf, roadsides, ditchbanks, lakesides, right-of-way areas, , disturbed and unmanaged areas.

**Life cycle:** Perennial.

**Propagation:** Seeds.

**Similar plants:** Crabgrass, goosegrass.



Dallisgrass young clump  
Photo: John D. Byrd



Johnsongrass stand  
Photo: Matt Levin

**Common name(s):** Johnsongrass,

**Scientific name:** *Sorghum halepense*, **Family:**

Poaceae

**Distribution:** Worldwide.

**Description and ID characters:** Large, upright, spreading grass, growing up to 8 feet in height. Stems are thick, sturdy and unbranched, with new shoots sprouting from the base of the clump. Creeping side shoots are also produced. Leaves are long, and broad with a distinct white mid-vein; may be hairless or sparsely hairy, especially towards the base. Ligules are membranous with a fringe of white hairs. Flower heads are large, open and triangular in outline, with several branches. Each branch has several loosely arranged, reddish brown or purplish spikelets. Underground stems (rhizomes) are well developed, thick white, fleshy and segmented. Each segment can give rise to roots and shoots.

**Best identifying feature(s):** Large, long leaves with distinct white mid-vein.

**Habitat:** Crop fields, pastures, parks, roadsides, ditchbanks, right-of-way areas, disturbed and unmanaged areas. Introduced as forage species, but now a noxious, aggressive weed.

**Life cycle:** Perennial.

**Propagation:** Seeds, rhizomes.

**Similar plants:** Witchgrass



Johnsongrass leaves, flower head  
Photo: James H. Miller & Ted Bodner

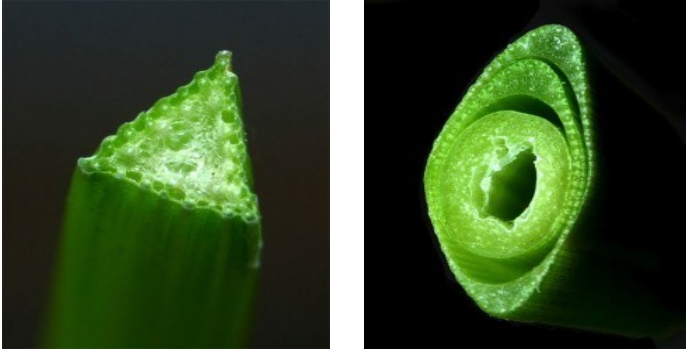
## SEDGES

**Common name(s):** Sedge

**Scientific name:** *Cyperus* spp. *Kyllinga* spp. **Family:** Cyperaceae

**Distribution:** Worldwide.

**Description and ID characters:** Sedges are some of the most common grass-like weeds. Their true stems are fleshy, white rhizomes found underground. The



Cross-sections through stems of a sedge (left) and a grass (right)  
Photo: The Southern Iowa Oak Savanna Alliance (SIOSA), [www.siosa.org](http://www.siosa.org)

flowering stems are produced above ground and are triangular in cross-section (grasses are rounded or folded and hollow). Leaves are dark green, glossy and hairless, with rounded tips, thicker and stiffer than grass leaves. They sprout in sets of three from the base of the plant (grasses, in sets of two).

**Green kyllinga (*Kyllinga brevifolia*)** plants are upright, low growing, reaching 6-12 inches in height and can form dense, spreading clumps. Leaves have rows of tiny barbs along the edges and lower mid-vein, giving them a rough feel. Flowers are formed in small, compact flower heads at the tip of the flowering stem, with three long, leaf-like bracts radiating outwards from their base. Each flower head contains 30-70 individual, green colored flowers. Reproduction is most commonly from rhizome fragments or through shoots arising from the main rhizomes. Green kyllinga does not produce tubers. It is the least common of the three sedges. Goes



Green kyllinga plants  
Photo: Charles T. Bryson



Green kyllinga flower head  
Photo: Joseph M. DiTomaso

dormant in the winter. **Best identifying features:** Glossy green hairless grass-like leaves, and compact flower heads with 3 bracts.

**Purple nutsedge** *Cyperus rotundus* plants are upright, about 1 ½ feet in height (shorter than yellow nutsedge). Flowers are formed on open, loosely arranged flower heads, with 5-7 branches at the tip of the flowering stems, each with 4-5 spikelets. Spikelets are purplish in color and consist of clusters of individual flowers, which later turn into fruits. Reproduction is most commonly through tubers formed in chains, off the underground rhizomes.

**Best identifying features:** Glossy green hairless grass-like leaves, purple spikelets. Tubers when crushed are strongly aromatic.

**Yellow nutsedge** (*Cyperus esculentus*) plants are upright, about 3 feet in height. Flowers are formed on open, loosely arranged flower heads, with 7-9 branches at



Yellow nutsedge flower head  
Photo: Howard F. Schwartz



Purple nutsedge flower head  
Photo: Rick J. Pelleg

the tip of the flowering stems, each with 4-5 spikelets. Spikelets are golden yellow in color and consist of clusters of individual flowers, much more in number per spikelet than in purple nutsedge, which later turn into fruits. Reproduction is most commonly through single terminal tubers produced off the underground rhizomes. Most widespread of the three major sedges, as it is adapted to colder regions whereas purple nutsedge is not.

**Best identifying features:** Glossy green hairless grass-like leaves, golden yellow spikelets.



Yellow nutsedge plants near onion field  
Photo: Howard F. Schwartz



Purple nutsedge plants  
Photo: Trevor James

**Habitat:** Sedges are commonly found as weeds in crop fields, gardens, parks, turf, roadsides and unmanaged areas. They prefer moist, sandy soils, but will grow in other soils with sufficient moisture.

**Life cycle:** Perennial.

**Propagation:** Underground stem tubers and rhizomes. Rarely produce seed.

**Similar plants:** Other sedges, grasses



Yellow nutsedge plant with single terminal tuber (left): Photo: Stanley Kays, and purple nutsedge plant chain of tubers (right): Photo: Mark Schonbeck



## PERENNIAL BROADLEAF WEEDS

**Common name(s):** Dandelion

**Scientific name:** *Taraxacum officinale*, **Family:**

Asteraceae.

**Distribution:** Worldwide in temperate regions.

**Description and ID characters:** Young plants are flat rosettes, and as they mature, larger leaves are produced but the main stem is very short and is attached to a strong, deep taproot. The parts visible above ground are the leaves and the flowering stems. Mature leaves are partially upright, or prostrate, and range from 2-15 inches in length and 1-4 inches in width. The leaf blades are dark green, and deeply lobed with toothed margins; and may or may not be hairy. Flowering stems are up to 1 foot tall, hollow, dark green or purplish in color, and can be partially or fully upright and hairy or hairless;

and they end in a single flower head. Flower heads are distinctive, bright yellow in color, and about  $\frac{3}{4}$  to slightly over 1 inch in diameter. Each flower head consists of numerous bright yellow florets in multiple layers. Fruits are tiny, brown, elongated and flattened structures formed at the base of each floret on the flower head. Each fruit is attached to a long slender stalk that ends in a tuft of long, fine white hairs. The entire dried-up flower head resembles a white furry ball, from which individual fruits are dispersed when their tufts of hair are caught in the wind. Each fruit contains a single seed.

**Best identifying feature(s):** Bright yellow, fully open flower head, white furry spherical heads when mature.

**Habitat:** Crop fields, orchards, gardens and landscaped areas, parks, turf, roadsides and unmanaged areas. Can harbor plant disease-causing viruses such as aster yellow virus, which affects many other crops. Hairs on mature flower heads can be irritating to some persons, and can interfere with cultural practices by accumulating on and within field equipment. The plants also have several culinary and medicinal uses.



Dandelion plant with flower head  
Photo: Forest and Kim Starr



Dandelion flower head  
Photo: Lukáš Malý



Dandelion seed head  
Photo: Emőke Dénes

**Life cycle:** Perennial.

**Propagation:** Seeds.

**Similar plants:** Sow thistle and other aster-like plants.

**Common name(s):** Clover- white clover

**Scientific name:** *Trifolium repens*, **Family:** Fabaceae

**Distribution:** Worldwide.

**Description and ID characters:** Low growing, partially or fully upright plant with numerous branching stems, up to 1 foot in height. Stems are light green and prostrate ones can root at the nodes, producing large clumps. Leaves are arranged alternately along the stems and have 3 leaflets arranged closely at the tip of a short stalk. Individual leaflets are broadly oval or egg shaped, about ½ inch in length, with numerous parallel veins and finely toothed margins. They are covered with sparse hairs, and some may have a pale white or gray, crescent or broad ‘V’ shaped marking in the center. Leaves with 4 or 5 leaflets are also found occasionally.



White clover leaflets  
Photo: Bruce Ackley



Variant with 4 leaflets  
Photo: Joe Papp

Flowers are formed in small tight, egg-shaped clusters of tiny white or pale pink flowers. Fruits are small, narrow, brown elongated pods attached to the central stalk of the flower head. Each fruit contains several light brown, flattened heart or kidney-shaped seeds with a notch at one side. Flowers are attractive to bees.

**Best identifying feature(s):** Leaflets in groups of three, with the white or gray crescent-shaped markings, small white or pale pink flowers clusters.



White clover fruits  
Photo: Forest and Kim Starr



White clover seeds  
Photo: Bruce Ackley

**Habitat:** Crop fields, orchards, gardens and landscaped areas, parks, turf, roadsides and unmanaged areas.

**Life cycle:** Perennial.

**Propagation:** Seeds, roots from stem nodes.

**Similar plants:** Strawberry clover (leaflets lack the crescent-shaped marks).



White clover stand  
Photo: Chris Evans

**Common name(s):** Silverleaf nightshade

**Scientific name:** *Solanum elaeagnifolium*, **Family:** Solanaceae

**Distribution:** Worldwide.

**Description and ID characters:** Upright, open branching shrub, 1-3 feet in height with some creeping stems. Stems also have light brown or reddish prickles. Leaves are oval or lance-shaped, with wavy or lobed margins and are arranged alternately on the stem. All stems and leaves are gray-green in color and covered with dense wooly or downy hairs, giving the plant a silvery appearance. Flowers are distinctive, light purple, blue or white in color with 5 fused petals forming a star shape, around a yellow center, from which five yellow stamens and a pistil can be seen projecting out. Fruits are round, glossy yellow, orange or red berries that turn brown or gray when they mature and dry up. Each fruit contains numerous seeds.

**Best identifying feature(s):** Silvery-gray appearance due to downy hairs covering the plant, light purple, blue or white star-shaped flowers, bright orange tomato-like fruit.

**Habitat:** Crop fields, gardens, parks, turf, roadsides and unmanaged areas.

**Life cycle:** Perennial.

**Propagation:** Seeds, creeping shoots and roots.

**Similar plants:** Black nightshade, hairy nightshade, horsenettle



Silverleaf nightshade plant-leaves, flower and fruits  
Photo: Dick Culbert

**Sources, further information:**

An illustrated guide to Arizona weeds

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<http://ag.arizona.edu/crop/images/database/weeds/weedphotos.html>

Wyoming weed identification

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