

Hoary Cress (*Cardaria draba*)

Hoary cress, also known as “White top,” is a member of the Mustard family. It was probably introduced from Europe as a contaminant in alfalfa seed. It is a creeping perennial, which means it reproduces by seed and creeping roots. The extensive root system spreads horizontally and vertically with frequent shoots arising from the rootstock. The aggressive nature of this plant allows it to out-compete and displace native species. It grows erect from 10 to 18 inches high and has a bluish green colored leaf. The flowers are white and numerous in compact flattop clusters which give the plant its name. Hoary cress is one of the earliest perennial weeds to emerge in the spring, producing flowers in May or June. It grows in waste places, cultivated fields, and pastures, and is capable of vigorous growth. This plant is rapidly spreading throughout Pitkin County, especially around the Shield-O -Mesa and surrounding areas. **Early control is recommended before seeds set in June.**

For additional information, contact Pitkin County Land Management at 920-5214 or the City of Aspen Parks Department at 429-2026.



Scentless Chamomile (*Matricaria perforata*)

Scentless chamomile is a member of the Aster family that was imported from Europe as an ornamental and now grows worldwide. It is an annual that grows ½ foot to 2 feet tall in a bushy shape with showy white flowers. It is nearly identical in appearance to the strong scented species, but can be easily distinguished by its lack of odor. Scentless chamomile has no forage value and can cause blistering of muzzles, irritation of mucous membranes, and skin rashes in livestock and wildlife. The plant has become widely established in the City of Aspen and Town of Snowmass Village. A single plant can produce as many as a million seeds. One flower head can have as many as 300 seeds, and the seed can remain airborne for up to 12 hours.

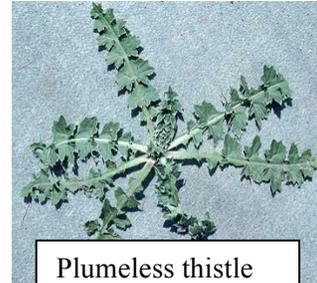


Thistle Rosettes



Scotch thistle

Many thistles in the western United States are native species that generally go unnoticed as weeds. However, thistle species introduced from Europe, Africa, and Asia can be very aggressive opportunists. They often invade overused or otherwise disturbed land.



Plumeless thistle

The plants spread rapidly, out-compete established and introduced plant species for nutrients, and can render pastures, rangeland, and forests nearly unusable. Thistles are especially troublesome following cool wet summers and falls, when seed production and seedling establishment are high. An integrated weed control program that combines chemical, cultural (such as grass competition), mechanical and biological methods is most likely to be successful.

There are two main types of thistles: Biennial (live 2 seasons) and Perennial (live several seasons).

Biennial Noxious Thistles: Biennial thistles such as Scotch, plumeless, and bull thistle are not as difficult to control as the perennial thistles, but spread rapidly by seeds that are produced in great numbers, ranging from 8400 seeds per plant with plumeless thistle to 120,000 seeds per plant from musk thistle. Biennial thistle seed generally germinates in the summer and fall, and the plant over-winters as a rosette. The following spring the plant resumes vegetative growth, bolts, flowers and sets seed. Plants die after setting seed, completing the life cycle. Biennial thistles reproduce only from seed, so the key to a successful management program is to control the plants before they flower or go to seed.

Perennial thistles such as Canada thistle are generally more difficult to control than the biennial thistles because they spread by both root and seed. Topgrowth control is not enough; for effective control of a perennial thistle, one must also deplete the root system of nutrients.



Bull thistle

Keys to controlling all thistles include:

- Establish a three- to five-year management program using several integrated methods.
- Control small patches before they spread.
- Reseed disturbed areas immediately with desired species.



Canada thistle

For additional information, contact Pitkin County Land Management at 920-5214 or the City of Aspen Parks Department at 429-2026.

Houndstongue (Cynoglossum officinale)

Houndstongue is a member of the Borage family. It is a biennial that was introduced from Europe. It reproduces by seed and appears as a leafy rosette in its first year. During the second year of growth the plant grows 1 ½ to 3 feet high with reddish-purple flowers. Houndstongue is commonly known as the "Velcro weed" because of its small nutlets that cling to (and are rapidly spread by) people, domestic animals, wildlife and vehicles. Houndstongue grows on ranges, pastures, trails and roadsides and is toxic to horses and cattle, as it contains alkaloids that may cause liver cells to stop reproducing. Plants often emit a musty odor.

Mechanical Control:

Physically remove the plant at flowering or in early seed formation. You can pull or dig these weeds out. Be sure to bag and destroy the plant (e.g. bury in sterile landfill) so seeds do not mature on it after you pull it.

Chemical Control:

Apply herbicides during the pre-bud stage or in the rosette stage. Pre-bud occurs in the spring or early summer and the rosettes form in late summer and early fall. Surfactants ("SURFace ACTive SubstANCES) are recommended to help the herbicide stick to and get absorbed by the hairy leaf.

For additional information, contact Pitkin County Land Management at 920-5214 or the City of Aspen Parks Department at 429-2026.



Field Bindweed (*Convolvulus arvensis*)

Field bindweed is a member of the Morning-glory family. This creeping perennial was introduced from Europe. It reproduces by seed and horizontal roots. The stems are 1 to 4 feet long and spread thickly over the ground or wind around erect plants or other objects. The flowers are bell- or trumpet-shaped, white or pink. Field bindweed is one of the most competitive perennial weeds and is a problem throughout Colorado. Its roots can extend 10 feet deep and a two- or three-year food supply is stored in the extensive underground root system. This makes it hard to kill by cultivation because roots will continue to live as long as this food reserve lasts. Seeds can also stay viable in the soil for up to 40 years. Field Bindweed is widespread in cultivated areas, pastures, lawns, gardens, roadsides, and waste areas throughout Pitkin County. As soon as bindweed is established in a new area, an infestation can spread locally by roots and rhizomes. After the first growing season, the roots of a single plant may cover an area 9 feet in diameter and produce up to 25 offshoot plants.



Dame's Rocket (*Hesperis matronalis*)

Dame's rocket is a member of the Mustard family and is also known as dame's violet. This native of Europe may be either a biennial or perennial, grows from 1 ½ to 4 feet tall, and has flowers ranging in color from white to pink to purple. Flowers contains 20-35 oval, reddish brown seeds; each plant is able to produce up to 20,000 seeds This persistent plant is often sold (*illegally!*) in local nurseries and found in wildflower seed mixes. It has escaped cultivation and become a problem throughout the Roaring Fork Valley, tending to invade sensitive riparian and wetland habitat.



Plumeless Thistle (Carduus acanthoides)

Plumeless thistle is a member of the Aster family. Introduced from Eurasia, it is a winter annual or biennial. This plant can be distinguished from musk thistle by its smaller flowers ($\frac{1}{2}$ to 1 inch in diameter). The leaves of plumeless thistle lack the prominent white margin present on musk thistle leaves. The plant may grow to a height of 5 feet or more. Flowers are reddish-purple and are either solitary or clustered. Taproots are large and fleshy. Plumeless thistle is an extremely prolific seed producer. A single flower head may produce 1,200 seeds and a single plant up to 120,000 seeds, which may be wind blown for miles. Seed may remain viable in the soil for over ten years, making tenacious persistence the key to controlling it.

In Colorado, Plumeless thistle is mainly found within the tri-county areas of Eagle, Garfield and Pitkin counties. As a result, the Colorado Department of Agriculture has mandated that it be eradicated in these counties. It is found in pastures, river valleys, and along roadsides. It is a major problem in and around the Aspen area.



Canada Thistle (Cirsium arvense)

Canada thistle is a member of the Aster family. The actual name, Canada thistle, is a bit misleading, because it is not native to Canada, or anywhere else in North America for that matter. It came over from Europe and now is one of the worst weeds in the Northern United States. It is a creeping perennial, which reproduces by seeds and roots. The erect stem is hollow, smooth and slightly hairy, 1 to 5 feet tall, simple, and branched at the top. The color is primarily lavender, pink, or purple. Canada thistle emerges in June in most parts of Pitkin County. It is one of the most widespread and economically damaging noxious weeds in Colorado. Infestations are found in cultivated fields, riparian areas, pastures, rangeland, forests, lawns and gardens, roadsides, and in waste areas. Because of its seeding habits, vigorous growth, and extensive underground root system, control or eradication is difficult. Canada thistle can be distinguished from other thistles by its size: it usually only reaches knee high in most parts of Pitkin County. Its flowers are also a paler pink color.



Leafy Spurge (Euphorbia esula)

Leafy spurge, a member of the Spurge family, introduced from Europe. It is a creeping perennial that reproduces by seed and extensive creeping roots. The roots can extend as deep as 40 feet on a plant that grows 1 to 3 feet tall, with pale green shoots and small yellow-green flowers. The plant, including the root, has milky latex that is damaging to eyes and sensitive skin. Leafy spurge is an extremely difficult plant to control because of its extensive sprouting root. It is adapted to a wide variety of habitats in the state and is very competitive with other plant species. If it becomes established in rangeland, pasture, and riparian sites, it may exclude all other vegetation due to its competitive nature. Populations exist from Starwood to Lower Rio Grande Tail and Jaffee Park to Pitkin Iron and to Hannon Creek in the Woody Creek Valley.



Oxeye Daisy (*Chrysanthemum leucanthemum*)

Oxeye daisy, a member of the Aster family, is a native of Eurasia. It is an erect perennial plant with characteristic “daisy-like” flowers (white ray and yellow disk flowers) which bloom from June through August. Oxeye daisy is commonly sold (*illegally!*) in wildflower seed mixes or transplanted as an ornamental despite its tendency to aggressively crowd out more desirable vegetation. Plants initially develop as a basal rosette. Lower rosette leaves occur on petioles and are from 1 1/2 to 6 inches long.

Wildlife and livestock do not like to graze or walk through an area infested with Oxeye daisy since the plants irritate their legs and faces. Very few animals will eat oxeye daisy and oxeye daisy infestations supplant plants that wildlife prefer to eat, resulting in reduced wildlife habitat. Because oxeye daisy is such a showy, pretty plant, proper management is often neglected. Oxeye daisy should be mowed as soon as flowers appear to reduce seed production. Root systems are shallow and the plant can be dug up and removed. Hand removal will have to be continued for several years because seeds may remain viable in the soil for a long time before they germinate. Several herbicides are also effective.



Yellow Starthistle (Centaurea solstitialis)

Yellow Starthistle is not yet found in Pitkin County; however a large infestation (hundreds of acres) was discovered in a commercial hay operation in Paonia in 2008. Its ability to produce thousands of seeds per plant, coupled with long seed life and rapid germination rates, makes this plant extremely difficult to control. It is also fatally toxic to horses. More than 10 million acres in California are already heavily infested with Yellow Starthistle. It is important to keep an eye out for this notorious weed. If you suspect you have found Yellow Starthistle, note the exact location and immediately contact the Pitkin County Land Manager.

Yellow Starthistle is native to the Mediterranean region of Europe and is thought to have entered the Western US as a contaminant in alfalfa seed. Flower heads are yellow, located singly at the ends of branches. Flower heads are distinguished by sharp, straw-colored thorns, which are up to 0.75 inches long. Mature plants are 2-3 feet tall and have rigid, branching, winged stems that are covered with cottony hairs.



Knapweeds

Knapweeds belong to the sunflower family. They can be distinguished from one another by the patterns on their bracts (the cone-like structure located below the flower head), by their growth, and to some degree by their flowers.

There are three main knapweeds in Pitkin County:

Spotted Knapweed (*Centaurea maculosa*) has spotted bracts and lavender/purplish flowers. It is a simple perennial that reproduces by seed and forms a new shoot each year from a taproot. Spotted Knapweed is one of the most invasive, aggressive weeds to plague the Western United States. Very rare in Pitkin County, the largest infestation is found at the base of Independence Pass along State Highway 82 above Tagert Lakes. This infestation has been monitored and treated yearly. It is imperative that it not be allowed to spread into the fragile sub-alpine ecosystem.



Diffuse Knapweed (*Centaurea diffusa*)

Has bracts with short, sharp spines and the flower is usually white or pink. It is a biennial or short-lived perennial that reproduces only by seed. Diffuse Knapweed can cross with Spotted Knapweed, creating a hybrid with spiked, spotted bracts. Diffuse Knapweed is increasingly common in Pitkin County. The largest infestations are found at the base of Smuggler Mountain Road, and in Snowmass Village across from the Snowmass Conoco. An early detection and early treatment philosophy could eradicate this weed from Pitkin County.



Russian Knapweed

Has papery bracts, stiff, ridged stems, and thistle-like flowers that are lavender to white. The plant flowers June to August and seed is produced in later summer to early fall. It is a perennial that reproduces by seed and creeping, horizontal roots, making Russian Knapweed very difficult to control once established. The key is to stress the weed and cause it to expend nutrient stores in the root system. In integrated management plan should be developed that places continual stress on the weed. Currently, the best management plan includes cultural control combined with mechanical and/or chemical control techniques. A single control strategy, such as mowing or an herbicide, usually is not sufficient.

This weed is beginning to show up on roads throughout Pitkin County with more frequency. Hwy 133 has numerous small patches. Snowmass Creek Road has infestations from Windstar up to the end of the asphalt. Aspen Valley Ranch also has some considerable patches.



Common Tansy (*Tanacetum vulgare*)

Common tansy is a member of the Aster family. Originally imported from Europe as an ornamental, it is a perennial plant that grows from 1-½ feet to 6 feet tall with yellow button-like flowers and fern-like leaves. Reproducing by seed and rootstock, tansy is difficult to control once established. Tansy is particularly aggressive when growing along irrigation ditches where it can restrict water flow. Each plant may produce over 50,000 seeds, in addition to aggressively spreading by the roots.



Poison Hemlock (Conium maculatum)

Poison hemlock is a member of the Parsnip family, introduced from Europe. It is a biennial that reproduces solely from seed. During the first year of growth a large rosette of leaves is produced; during the second year the plants bolt to produce 4 to 12 foot stems with white flowers that grow in small, erect clusters. The stem is mottled with purple spots. All parts of the plant are poisonous to humans as well as to wild and domestic animals. The poisonous principle (the alkaloid coniine) causes paralysis, convulsions, and eventual death. Poison hemlock was used in ancient Greek executions, including that of the philosopher Socrates.



Dalmatian Toadflax (*Linaria dalmatica*)

Dalmatian toadflax is a member of the Figwort family. It was introduced as an ornamental from Europe, and is now rapidly invading dry rangeland from 5,000 to 8,000 feet. Dalmatian toadflax is still quite rare in Pitkin County, but it is very common in Glenwood Springs. It has been found along the Capitol Creek and Snowmass Creek drainages. It is a creeping perennial that closely resembles yellow toadflax. However, unlike yellow toadflax, Dalmatian toadflax has waxy, heart-shaped leaves that clasp the stem. The stems grow to 2-4 feet in height. The flowers are snapdragon-shaped, bright yellow, with orange centers. Dalmatian toadflax is especially well-adapted to arid sites and can spread rapidly once established. Because of its deep extensive root system, waxy leaves, and heavy seed production, this plant is difficult to manage.

To learn more about managing Dalmatian Toadflax, visit the Pitkin County Noxious Weed Management Plan posted online at <http://www.aspenpitkin.com/weeds> or contact Crystal Yates-White, Pitkin County Land Manager at 920-5214.



Yellow Toadflax (*Linaria vulgaris*)

Yellow toadflax is a member of the Figwort family and is sometimes called common toadflax or butter and eggs. It was introduced from Europe as an ornamental and has now become a serious problem to rangeland and mountain meadows. It is a perennial reproducing from seed, as well as from underground rootstalk. The flowers are bright yellow with deep orange centers that resemble the snapdragon. Yellow toadflax does well in all types of soils. Its displacement of desirable grasses not only reduces ecological diversity, but also reduces rangeland value and can lead to erosion problems. Yellow toadflax is said to contain chemicals that stimulate the secretion of bile from the liver when levels are low. It is thus used in combination with other herbs to treat liver problems. Because of its early vigorous growth, extensive underground root system, and effective seed dispersal methods, yellow toadflax is difficult to control.



Absinth Wormwood (*Artemisia absinthium* L.)

Absinth wormwood is a member of the Sunflower family. It is a robust perennial that grows 16-48 inches tall with large light-gray leaves which are oblong in shape. Stems arise from a taproot and branch from the base. Stems are ½ inch or greater in diameter, and reddish in color. Flowering occurs in late summer. It is frequently found near streams, lakes, or irrigation ditches.



T. Common Mullein (*Verbascum thapsus*)

Key Characteristics:

Common mullein is a member of the Snapdragon family. It was introduced from Europe, but is native to Asia. A deep tap-rooted biennial growing up to 7 feet tall, it produces a large **rosette** up to 2 feet in diameter the first year. **Leaves** are large, soft, and very hairy leaves. It produces a large **rosette** up to 2 feet in diameter the first year. **Flowers** are yellow and borne in large terminal spikes. Dipped in tallow, mature stalks made good torches in ancient times; called "witch's-stick".



Locations:

Found throughout Pitkin County along dried-up river bottoms, pastures, meadows, fencerows and disturbed areas. Especially prevalent on gravelly soils.

Biological control:

None present and no current research.

Cultural control:

Good vegetative cover is the best way to avoid proliferation of Common Mullein.

Mechanical control:

Will not stand tillage. Pulling or cutting below the root crown when soil is damp is effective if done prior to seed production.

Chemical control:

Only effective when combined with adequate surfactant to allow penetration of hairy leaves. Contact Pitkin County Land Management Department for more specific information about herbicide products, application rates, and equipment calibration.

E. Downy Brome (“Cheatgrass”) (*Bromus tectorum*)

Key Characteristics:

Downy Brome or “cheatgrass” is a grass introduced from Eurasia. **Reproduction** is by seed. **Plants** are 4-30 inches tall and **blades** densely covered with soft hairs, giving them a downy feel. **Flowers** in mid-spring are followed by **seedheads** 2-6 inches long and usually purplish at maturity. Cheatgrass competes with more desirable perennial grasses for moisture because of its early spring emergence. Once mature, the dry plant is a nuisance and fire hazard.

Downy Brome seeds can germinate in the fall, winter, and spring. Most seeds germinate within one year of maturation. Frequent late summer or late fall rains will cause rapid germination and abundant fall growth. However, if adequate fall moisture is not available, Downy Brome can act like a spring annual.



Locations:

This plant is located throughout Pitkin County, especially along roadsides and in areas where heavy disturbance has occurred.

Biological control:

Scientists are working on specific bacteria for biological control but still in testing stage.

Cultural control:

Seeding with aggressive, native, perennial grasses can help compete against Downy Brome. Maintain range and pasture in good condition. Promote healthy grass growth through proper irrigation and fertilization. Do not overgraze.

Mechanical control:

Early spring tillage of fallow ground, tillage prior to planting spring-season crops, and tillage operations that bury downy brome seeds (mold-board plowing) are effective mechanical methods. Neither mowing nor burning are effective controls to prevent seed spread.

Chemical control:

There are effective herbicide options for Cheatgrass control. Contact the Pitkin County Land Management Department for more specific information about products, rates, and equipment calibration.

Y. Cypress Spurge (*Euphorbia cyparissias*)

Key Characteristics:

Cypress Spurge is a member of the Spurge family. It is a perennial that reproduces by both seed and an extensive creeping root system. Leaves are alternate, numerous, small, and narrow. **Stems** are very branched toward their upper ends and reach 4-32 inches in height. When severed, **stems secrete a milky latex** that is toxic to horses and cattle and caustic to human skin. Heart-shaped, leaf-like **bracts** form below inconspicuous flowers. These **bracts** are yellowish-green early in the season, turning reddish-green toward maturity. **Flowers** are yellowish-green and form at the tips of the main stem and upper branches.



Locations:

Cypress Spurge is known to exist in two small patches on private land in Old Snowmass. It appears to have been planted as an ornamental.

Biological control:

None available at this time. Note that the Colorado Department of Agriculture does not accept Biological Control as an acceptable method for List A noxious weed species.

Cultural control:

Do not plant Cypress Spurge! Maintain healthy native vegetation to prevent infestation. Survey your land regularly to detect new invaders. Quickly eradicate any new populations.

Mechanical control:

Hand-pulling or digging can be effective when managing new, small infestations and care is taken to remove the entire root system. Tillage may encourage spread by further dispersing rhizomes. When handling plants wear rubber gloves and eye protection to protect yourself from the irritating milky sap.

Chemical control:

Contact Pitkin County Land Management Department for more specific information about herbicide products, application rates, and equipment calibration.



W. Russian Olive (*Elaeagnus angustifolia*)

Key Characteristics:

Russian olive is a member of the Oleaster family. A hardy, fast-growing tree introduced from Europe, Russian olive has been promoted for windrow and ornamental plantings. Russian olive can be found in both dry and moist soils, but does particularly well in sandy flood plains. This tree may reach heights of 10 to 25 feet. The **trunk and branches** are armed with 1 to 2 inch woody thorns. **Leaves** are covered with small scales which give the foliage a **distinctive silvery** appearance. **Flowers** are yellowish-green in color and produce a berry-like **fruit** that silvery when first formed but turns brown at maturity. Russian Olive is rapidly replacing native riparian species and eliminating valuable nesting sites for birds. It should be eliminated whenever possible.

Locations:

To date Russian olive has not been a problem in Pitkin County but has the capability to spread if left unchecked. This weed is starting to establish itself along the Crystal River, Roaring Fork, and Snowmass Creek valleys. Mapping and monitoring efforts have begun in 2009 and will help determine whether infestations are spreading.

Biological control:

No known biological controls at this time.

Cultural control:

Do not plant or propagate Russian Olive. Landscape with native trees wherever possible. Plant and support native vegetation in riparian areas.

Mechanical control:

Russian Olive saplings and sprouts can be hand-pulled or removed with a shovel or other appropriate hand-tool. Do this when the soil is moist to insure removal of the root system. For larger trees, cutting alone (i.e. without herbicide treatment) will actually promote denser re-growth. Burning during the dormant season also results in vigorous re-sprouting.

Chemical control:

Contact Pitkin County Land Management Department for more specific information about herbicide products, application rates, and equipment calibration.



K. Sulfur Cinquefoil (*Potentilla recta*)

Key Characteristics:

Sulfur Cinquefoil is a member of the Rose family. It is a long-lived, tap-rooted perennial that grows upright to 1-2 ft tall, with hairy stems. **Flowers** are light-yellow in color with a dark yellow center and 5 petals. **Leaves** are palmate and divided into about five saw-toothed leaflets.

Locations:

Although not a new discovery in Pitkin County (it's been around at least eight years) Sulfur Cinquefoil is new to the Pitkin County Weed List. Small patches have been found at the Pitkin County Airport and east of Aspen around North Star, in Woody Creek near Jaffee Park, on the Child Ranch on Capitol Creek Road, up the Frying Pan, and in the Crystal River Valley at the Penny Hot Springs and Filoha Meadows. It is very important to report any sightings of this weed to the County Land Manager, so that it can be treated immediately and not allowed to spread any further.

Biological control:

Insect species have been used in trials, but since Sulfur cinquefoil is similar to strawberries, the insects used are considered pests. For more information, contact the Colorado Department of Agriculture's Insectary in Palisade, Colorado at 970-464-7916. Note that biological control will not eradicate a weed.

Cultural control:

The only recommendation available for preventing the spread of this species is by eliminating seed production from established stands, and discontinuing its use as an ornamental.

Mechanical control:

Mowing is not effective, as new shoots will replace the cut stems. Hand-digging or pulling when soil is moist is effective on small infestations, if the entire root system is removed. Tillage alone will spread the infestation, since root fragments will produce new plants.

Chemical control:

Contact the Pitkin County Land Management Department for more specific information about herbicide products, application rates, and equipment calibration.



K. Sulfur Cinquefoil (*Potentilla recta*) (continued)

Look-Alikes:

There are over 20 native species of Cinquefoil (*Potentilla*) in Colorado. Many can be easily confused with the noxious weed Sulfur Cinquefoil. They all have yellow, 5-petaled flowers, and most are herbaceous plants with a creeping or upright growth habit. The exception are the Shrubby Cinquefoils, (e.g. *P. fruticosa*) which are small, round bushes with yellow flowers, commonly used in landscaping. There are three major ways to distinguish the native plants from the noxious weed:

- **Flower Color:** Native Cinquefoils typically have bright yellow blooms, while the flowers of Sulfur Cinquefoil are usually a paler yellow.
- **Stem Hairs:** Sulfur cinquefoil has long right-angled hairs that are perpendicular to the leaf-stalks and the stem. (hence the species name *P. recta*) While the natives may have hairy stems, these hairs do not stand straight out.
- **Leaf Color:** The underside of the leaves of native Cinquefoils are typically silvery-grey



Beautiful Cinquefoil
(*Potentilla pulcherrima*)

Note bright yellow flowers and prostrate growth habit (left), as well as silvery leaf underside (right).
(Sulfur Cinquefoil is erect with pale yellow flowers and a leaf that is dark green on both sides)

and often hairy, while Sulfur cinquefoil leaves are dark green on both sides.



Shrubby Cinquefoil
(*Potentilla fruticosa*)

Note its woody, shrub-like growth habit, bright yellow flowers, and small, narrow leaves.

(Sulfur Cinquefoil is herbaceous and pale yellow flowers and large, palmately compound leaves.)

J. Chinese Clematis (*Clematis orientalis*)

Key Characteristics:

Chinese clematis is a member of the Buttercup family. It is an **herbaceous to woody perennial vine**, initially introduced as an ornamental. **Stems** reach 10-15 ft, with gray-brown bark, and tend to climb on rocks, fences, bushes, and trees. **Roots** are 5-10 ft long. **Leaves** are opposite and may be in groups of three. Each large solitary yellow **flower** produces numerous feathery, long-tailed seeds which are conspicuous all winter.



Locations:

Chinese clematis stands can be found in the Town of Snowmass Village. It is also present in Garfield County near No Name. There are many native clematis species in Colorado, all having white flowers.

Biological control:

None known at this time.

Cultural control:

The only recommendation available for preventing the spread of this species is by eliminating seed production from established stands, and discontinuing its use as an ornamental.

Mechanical control:

Hand pull woody vine before seed heads mature.

Chemical control:

Contact the Pitkin County Land Management Department for more specific information about herbicide products, application rates, and equipment calibration.

Look-Alikes:

There are many native Clematis species in Colorado. Western Virgin's Bower (*Clematis ligusticifolia*) is a common example because its leaves are very similar to Chinese Clematis, but it can be distinguished by its flowers which are smaller, white and occur in clusters rather than solitary on stems.

Other native Clematis species include Blue Clematis (*Clematis occidentalis*), and Rocky Mountain clematis (*Clematis columbiana*), both of which have light blue-lavender flowers.



Western Virgin's Bower
(*Clematis ligusticifolia*)



Blue Clematis
(*Clematis occidentalis*)

I. Chicory

(*Cichorium intubus* L.)

Key Characteristics:

Chicory is a member of the Sunflower family. It is native to the Mediterranean region, but now broadly distributed throughout the northern hemisphere. Chicory is a **tap-rooted perennial** that grows 1-6 feet tall and . Low-growing **rosette leaves** resemble dandelion leaves but have fine hairs. Blue flowers (occasionally pink or white) usually close by midday. Leaves are often used in salads and dried roots as a coffee substitute.

Locations:

Patches of Chicory exist along Hwy 133 near the Penny Hot Springs, and along Capitol Creek and Sopris Creek roads.

Biological control:

None known at this time.

Cultural control:

This perennial weed is difficult to eliminate. Prevent invasion by minimizing soil disturbance and use of contaminated seed, eliminating seed production by current infestations, and maintaining healthy native plant communities.

Mechanical control:

Chicory may be controlled by mowing, cutting, or pulling plants before seed production. This process may have to be repeated annually to exhaust nutrient reserves in the roots of the plants as well as to eliminate plants that emerge from the soil seed bank.

Chemical control:

There are effective herbicide options for Chicory control. Best control occurs when the plants are actively growing, and in the fall to rosettes. Contact the Pitkin County Land Management Department for more specific information about products, rates, and equipment calibration.



G. Wild Caraway (*Carum carvi*)

Key Characteristics:

Wild caraway is a member of the Parsley family. It is a biennial plant, producing a low-growing rosette of leaves in its first year of growth, and then a flowering stalk (bolt) in the second year. The plant is supported by a **narrow taproot** and grows in a wide range of soil types. Bolting plants can tolerate some spring flooding and seedlings can survive light frost. **Stems** are erect, smooth, branched, usually hollow, and grow 1- 3 feet tall. There can be several stems per plant. **Leaves** are alternate and very finely divided (parsley-like). The leaves of the first-year rosettes can look very similar to yarrow, a native plant. The **flowers** of Wild Caraway are usually white, but occasionally pinkish, and occur in loose umbels. **Fruit** has a distinct caraway odor.



Locations:

Wild caraway is grown in Canada as a spice crop; however it has escaped cultivation and has been invading pastures, rangeland and natural areas for several years now. This plant is prolific in Pitkin County. Small infestations have been noticed in Maroon Bells Park.

Biological control:

None known at this time.

Cultural control:

Healthy, competitive vegetation helps protect areas from invasion.

Mechanical control:

Hand-pulling of bolting stalks is effective at preventing seed production, but at maturity the seed heads are extremely fragile and shatter easily.

At this stage a plastic bag can be carefully placed over the mature plant, and closed tightly around the stem while hand-pulling. Carefully done, this method can remove seed without accidentally spreading it. Collected seed should be disposed of in landfill-bound garbage or thoroughly burned. Mowing is not effective because the plants will stay short and bloom.

Chemical control:

There are effective herbicide options for Wild Caraway control. Contact the Pitkin County Land Management Department for more specific information about products, rates, and equipment calibration.



G. Wild Caraway (*Carum carvi*) (continued)

Native Look-Alikes: Examples of similar-looking natives are pictured below. Contact the Land Management office with further questions.



Cow Parsnip
(*Heracleum sphondylium*)

Stem thicker, leaves much larger and less subdivided than Wild Caraway; seeds lack caraway odor.



Yarrow
(*Achillea lanulosa*)

Smaller and shorter, leaves more finely divided than Wild Caraway; stem and leaves wooly; seeds lack caraway odor

Porter's Loveage/Osha
(*Ligusticum porteri*)

Leaves not as finely divided as Wild Caraway; seeds lack caraway odor.



F. Common Burdock (*Arctium minus*)

Key Characteristics:

Common burdock is a member of the Sunflower family. It is an introduced biennial which reproduces by seed in its second year. In the first year of growth the plant forms a rosette; the second year the plant bolts and flowers. Burdock can grow up to 6 feet tall, has enormous leaves and prickly burs. The flowers are purple and white on numerous heads. Burdock grows along roadsides, ditch banks, and in neglected areas.

Locations:

This plant is a very serious threat to sheep as the burs can significantly damage the quality of their wool. Common burdock is found throughout Pitkin County.

Biological control:

None known at this time.

Cultural control:

Prevent the establishment of new infestations by minimizing disturbances and seed dispersal, eliminating seed production and maintaining healthy native plant communities.

Mechanical control:

Burdock will not stand repeated cultivation, cutting, digging or pulling. Mechanical control is laborious but effective; properly bag and dispose of mature burs.

Chemical control:

There are effective herbicide options for Common Burdock control. Contact the Pitkin County Land Management Department for more specific information about products, rates, and equipment calibration.



D. Black Henbane (*Hyoscyamus niger*)

Key Characteristics:

Black henbane, a member of the nightshade family, was introduced from Europe as an ornamental and medicinal herb. Blooming June through September this weed may be an annual or biennial and grows from 1 to 3 feet tall.

Leaves are shallowly-lobed to coarsely-toothed and have sticky hairs. **Flowers** are brownish-yellow with a purple center and purple veins and have a foul odor. **Fruits** are about 1 inch long with 5 lobes. Black Henbane is **poisonous** to both livestock and humans.

Locations:

This plant is relatively rare in Pitkin County, with most outbreaks happening in areas where heavy earth-moving has occurred. Black henbane plants have been identified on Brush Creek Road, near the Aspen Recreation Center, along Hwy 82 near the Maroon Creek Bridge, and at the Pitkin County Airport.

Biological control:

No known biological controls at this time.

Cultural control:

Good vegetative cover substantially reduces chance of infestation. Beware of potentially contaminated fill, dirt, or hay. Avoid overgrazing, as this weed is a common invader of overused pasture.

Mechanical control:

Hand pull or dig from moist soil, to remove the entire taproot system. Be sure to bag plants that have been removed during or after flowering to prevent potential seed spread.

Chemical control:

There are effective herbicide options for Black Henbane control. Contact the Pitkin County Land Management Department for more specific information about products, rates, and equipment calibration.

