

Weed Identification And Control Guide

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Weed Identification and Control Guide

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Introduction

This weed identification and control guide is part of an overall campaign to manage invasive and noxious weeds in Nevada. It has been designed to provide the most pertinent information needed to allow students and volunteers to accurately identify weed species, learn about the life cycle, and apply the principles of integrated pest management in their control. The individual weed profiles may be copied as needed for educational purposes. Blank lines have been included to allow students to make note of additional information provided during trainings. The following 28 guides are currently available:

Dryland Noxious/Invasive Weeds

Knapweed, Diffuse*
 Knapweed, Russian*
 Knapweed, Spotted*
 Leafy Spurge*
 Medusahead**
 Puncturevine***
 Thistle, Canada***
 Thistle, Musk*
 Thistle, Yellow Star*

Riparian Noxious/Invasive Weeds

Eurasian Watermilfoil**
 Hemlock, Poison***
 Hemlock, Western Water***
 Hoary Cress (Whitetop)*
 Purple Loosestrife**
 Tall Whitetop (Perennial Pepperweed)*
 Tamarisk (Saltcedar)**

Nuisance Weeds

Chicory
 Common Mallow
 Common Mullein
 Curly Dock
 Curlycup Gumweed
 Dodder
 Field Bindweed
 Foxtail Barley
 Kochia
 Plantain
 Redroot Pigweed
 Wild Iris

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- * Weeds designated as noxious by Nevada Administrative Code
 - ** Weeds not designated as noxious, but known to be invasive
 - *** Weeds designated as noxious by Nevada Administrative Code, but not highly invasive

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December, 1998

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Weed Profile: Diffuse Knapweed

COMMON NAME: Diffuse Knapweed

BOTANICAL NAME: *Centaurea diffusa*

FAMILY: Asteraceae (Sunflower family)

DESCRIPTION / IDENTIFICATION : This ball-shaped and tap-rooted plant grows one to two feet tall, and branches towards the top. Rosette and flower shoot leaves are finely divided. Flower color is usually white but occasionally purple, and there are **spines on the bracts**. Plant dries out in the fall, and will roll like tumbleweed.



NATIVE TO: Southern Europe, north to the Ukraine.

CURRENT DISTRIBUTION: Degraded non-cropland of California, Idaho, Oregon, Montana, and Washington (as of 1995). Found in dry, porous soils in areas with 9 to 16" of precipitation per year.____



LIFE CYCLE CLASSIFICATION: Most commonly a short-lived perennial; _____ occasionally _____ a _____ biennial; _____ infrequently _____ an annual.

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: _____

Control Methods

MECHANICAL: Hand-pull. Be sure to wear gloves. _____

CULTURAL: Follow broadleaf weed killers with competitive grass seeding. _____

BIOLOGICAL: A complex of many different insects is available, similar to those used on spotted knapweed.

CHEMICAL: Clopyralid (Stinger®; Transline®; Curtail® (includes 2,4-D)) is the most successful control, and works well during flowering, but is not yet registered for use in Nevada. Picloram (Tordon®, restricted use), chlorsulfuron (Telar®), 2,4-D, and/or dicamba (Banvel®) with cultural practices may be useful. _____

ADDITIONAL COMMENTS: _____

Weed Profile: Russian Knapweed

COMMON NAME: Russian Knapweed

BOTANICAL NAME: *Acroptilon repens*

FAMILY: Asteraceae (Sunflower family)

DESCRIPTION / IDENTIFICATION : Grows 18 to 36" tall. Deeply lobed leaves are 2 to 4" long with gray pubescence. Flowers are pink, lavender, or white, and are produced from June to September. Rosettes have toothed leaves covered with fine hair.



NATIVE TO: Ukraine, S.E. Russia, Iran, and Kazakh to Mongolia.

CURRENT DISTRIBUTION: Found in most western states in cultivated fields, pastures, disturbed sites, roadsides, waste areas, and dry rangelands.



LIFE CYCLE CLASSIFICATION : Perennial; emerges in early spring.

MOST COMMONLY REPRODUCES ITSELF BY: Seed and rhizomes.

NUMBER OF SEEDS/ PLANT: 50 to 500 per shoot.

Control Methods

MECHANICAL: Use mowing in combination with herbicide treatments and then tilling to overcome allelopathic effects. Continuous tillage is somewhat effective, especially when combined with an herbicide program. Hand-pull only while wearing gloves.

CULTURAL: A good management program is essential. Seed competitive perennial grasses after control measures. Avoid overgrazing pastures and range. Use proper irrigation and fertilization.

BIOLOGICAL: Russian knapweed gall nematode.

CHEMICAL: Picloram (Tordon®, restricted use) should be applied after the first killing frost. Till the following spring to remove leaves, then treat again as needed with picloram. Control may be achieved in 2 to 4 years. Clopyralid (Stinger®; Transline®; Curtail® (includes 2,4-D)) works well during flowering, but is not yet registered for use in Nevada. Use chloresulfuron (Telar®), 2,4-D, and/or dicamba (Banvel®) with cultural practices.

ADDITIONAL COMMENTS: Exhibits allelopathy. Toxic to horses, with irreversible damage resulting in the inability of the horse to pick up and chew food. Does not appear to affect cattle and sheep.

Weed Profile: Spotted Knapweed

COMMON NAME: Spotted Knapweed

BOTANICAL NAME: *Centaurea maculosa*

FAMILY: Asteraceae (Sunflower family)

DESCRIPTION / IDENTIFICATION: Grows one to three feet tall, and branches towards the top. Forms a basal rosette with pinnately divided leaves during the first year. Flowers are usually pink, sometimes purplish, sometimes white. This plant has slender, wiry branches.

NATIVE TO: Central Europe and well drained, fertile soils.

CURRENT DISTRIBUTION: Across the Northern U.S. and the Pacific Coast in rangelands.



LIFE CYCLE CLASSIFICATION: Short-lived non-creeping perennial; sometimes a biennial.

MOST COMMONLY REPRODUCES ITSELF BY: Seed.

NUMBER OF SEEDS / PLANT: 25,000.

Control Methods

MECHANICAL: Mow before seed set when first flowers appear. Hand-pulling is effective.

Notice the black tips of the bracts

on the seed heads.

CULTURAL: Combination of other methods coupled with seeding with competitive grass species.

BIOLOGICAL: Numerous insects available, including gall flies, moth, and weevil. Early sheep grazing is also used.

CHEMICAL: Clopyralid (Stinger®; Transline®; Curtail® (includes 2,4-D)) provides the most successful control, and works well during flowering, but is not yet registered for use in Nevada. Picloram (Tordon®, restricted use) provides long-term (3 year) residual control. Treat rosette or other stages prior to flowering. Chlorsulfuron (Telar®), 2,4-D, and/or dicamba (Banvel®) with cultural practices may also be effective.

ADDITIONAL COMMENTS: Prefers shallow, gravelly soils. This plant can invade healthy rangelands.



Weed Profile: Leafy Spurge

COMMON NAME: Leafy Spurge

BOTANICAL NAME: *Euphorbia esula* (Poinsettia family)

FAMILY: Euphorbiaceae

DESCRIPTION / IDENTIFICATION: One to three feet tall with bluish green leaves and smooth leaf margins. Umbel flower heads, with showy yellow heart-shaped bracts. All plant parts contain white milky latex. Roots extend to 40 feet deep.



NATIVE TO: Europe.

CURRENT DISTRIBUTION: First reported in the U.S. in 1927. Found in northern Nevada rangelands and throughout N. America.



LIFE CYCLE CLASSIFICATION: Deep-rooted perennial.

MOST COMMONLY REPRODUCES ITSELF BY: Seed and vegetative root buds.

NUMBER OF SEEDS / PLANT: 140 seeds / flowering shoot. Seeds may be viable in the soil for at least eight years.



Control Methods

MECHANICAL: Very difficult to control due to its extensive root system. Do not disk or plow since this only spreads the weed. Mechanical controls are not effective once the plant has become established.

CULTURAL: Encourage vigorous competitive grass growth, avoiding overgrazing. Plants needs sun, and will not thrive in shade.

BIOLOGICAL: Many insects are available for release, including several species of flea beetle from Europe. None of these insects will eliminate infestations, but they can help to reduce weed populations. Use sheep and goats to graze the weed early in the season while it is still tender. Hold all livestock in a weed/seed free area for seven days before transporting or moving out of the area.

CHEMICAL: Treat during the spring when the true flowers emerge. It is essential to control this weed in the first growing season for best success. Picloram (Tordon®, restricted use) is the most effective chemical treatment. Other herbicides include dicamba (Banvel®), 2,4-D (reduces seed production), and glyphosate (Roundup®). Apply fall herbicide after a summer of grazing. Glyphosate may eliminate competitive species and allow leafy spurge to dominate.

ADDITIONAL COMMENTS: Fruit has artillery seed dispersal, and shoots ripe seed as far as 15 feet. The plant causes severe irritation of mouth and digestive tract in cattle that may result in death. In areas with more moisture, it will expand rapidly.

Weed Profile: Medusahead

COMMON NAME: Medusahead

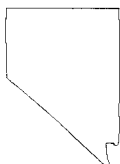
BOTANICAL NAME: *Taeniatherum caput-medusae*

FAMILY: Poaceae (Grass family)

DESCRIPTION / IDENTIFICATION: Erect grass 6 to 24 inches tall. Leaf blades are up to 1/8 inch wide, more or less rolled, and slightly hairy. Stems are jointed and slightly hairy. Flowers, produced in May or June, are on long awned spikes. Flowers persist through winter. _____

NATIVE TO: Eurasia. _____

CURRENT DISTRIBUTION: Found on millions of acres of semi-arid rangeland and in the Pacific N.W. _____



LIFE CYCLE CLASSIFICATION: Winter annual. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: _____



Control Methods

MECHANICAL: Mow, disk or plow before seed set. Slow, hot fires will reduce medusahead up to 90% in the following year. _____

CULTURAL: Graze intensively early in the growing season. Spring grazing by sheep can reduce medusahead cover. Fertilize with nitrogen to increase competition from other grasses and forbs. _____

BIOLOGICAL: None currently available. _____

CHEMICAL: Use glyphosate (Roundup®) on early growth. This is an expensive solution for rangelands where this weed occurs. Apply sulfometuron (Oust) at 1/3 ounce per acre (will also kill other grasses; only for use in non-crop lands or firebreaks.) _____

ADDITIONAL COMMENTS: This grass can be confused with squirreltail or foxtail barley. It concentrates silica from the soil and cows will not graze it once it has flowered, thus reducing the carrying capacity of rangelands. It is a fire hazard and is extremely competitive, particularly with cheatgrass (downy brome). _____

Weed Profile: Puncturevine

COMMON NAME: Puncturevine, Goathead

BOTANICAL NAME: *Tribulus terrestris*

FAMILY: Zygophyllaceae

DESCRIPTION / IDENTIFICATION: Prostrate plant with a simple taproot and pinnately compound leaves. Small yellow flowers produce spiked seeds or burs. _____



NATIVE TO: Europe. _____

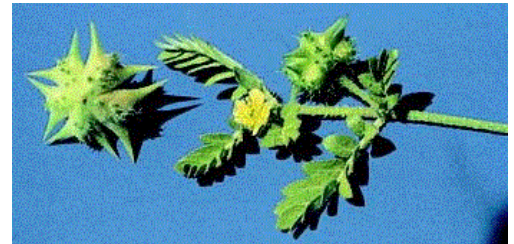
CURRENT DISTRIBUTION: Throughout the U.S. except the northern tier from Montana to Maine. Invades croplands, pastures, roadsides, and urban areas. _____



LIFE CYCLE CLASSIFICATION: Warm season annual. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: _____



Control Methods

MECHANICAL: Use cultivation and hula-hoe when small. If plants have produced seed, harvest seeds into bags or hole-free containers and burn or send to the local landfill. Establish a management plan for _____ the _____ following _____ year.

CULTURAL: Mulch area four inches deep. _____

BIOLOGICAL: Puncturevine seed weevil and puncturevine stem weevil; only successful in areas with mild winters. _____

CHEMICAL: Herbicides are used before seed production and subsequently for 2 to 3 years to eliminate the seed source. Apply 2,4-D amine or LV ester every 3 weeks during germination or when new seedlings appear. Preemergents may be helpful. _____

ADDITIONAL COMMENTS: Probably came over from the Mediterranean on contaminated wool, spreading to the midwest. First reported in California in 1903. Seed will remain dormant in the soil for 4 to 5 years, which makes eradication difficult. Well-known for puncturing bicycle tires. _____

Weed Profile: Canada Thistle

COMMON NAME: Canada Thistle

BOTANICAL NAME: *Cirsium arvense*

FAMILY: Asteraceae (Sunflower family)

DESCRIPTION / IDENTIFICATION: Stems grow to four feet tall. Deeply lobed leaves are spiny, with small bristly clusters of purple to whitish flowers produced mid-June through September. The extensive root system can spread up to 12 feet. _____

NATIVE TO: North America. _____

CURRENT DISTRIBUTION: Deep, loose, cool soils. Found throughout the U.S. except Alaska. Also throughout S. Canada. _



LIFE CYCLE CLASSIFICATION: Creeping perennial, emerging mid- to late- spring. _____

MOST COMMONLY REPRODUCES ITSELF BY: Vegetative buds on the root system; also by seed. _____

NUMBER OF SEEDS / PLANT: 680-1500/stem; survive 21 years in soil. _____

Control Methods

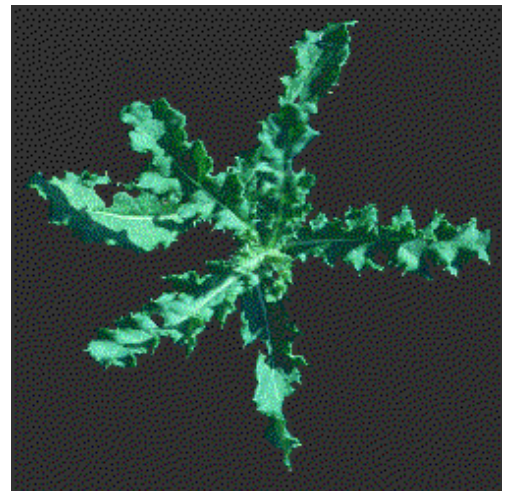
MECHANICAL: Continually stress the plant by mowing several times a year over many seasons. Mow every 3 to 4 weeks from June through September. Disking and plowing spreads this weed. _____

CULTURAL: Rotate crops, for example, to annual cereals planted early, with tillage in the fall. _____

BIOLOGICAL: Stem weevil, Canada thistle bud weevil; stem gall fly. _____

CHEMICAL: Clopyralid (Stinger®; Transline®; Curtail® (includes 2,4-D)) is the most successful control, and works well at any time of the year, but is not yet registered for use in Nevada. Picloram (Tordon®, restricted use), thifensulfuron (Harmony®), chlorsulfuron (Telar®), 2,4-D, and/or dicamba (Banvel®) with cultural practices may be effective. _____

ADDITIONAL COMMENTS: _____



Weed Profile: Musk Thistle

COMMON NAME: Musk Thistle, Nodding Thistle

BOTANICAL NAME: *Carduus nutans*

FAMILY: Asteraceae (Sunflower family)

DESCRIPTION / IDENTIFICATION: Up to seven feet tall with freely branched stems and purplish nodding flowers. Leaves are dark green with spines with a light midrib vein. Similar to scotch thistle, but musk thistle has drooping flower heads. _____

NATIVE TO: Europe. _____

CURRENT DISTRIBUTION: Pasture, rangelands, roadsides, non-crop lands, irrigated areas throughout US and Canada. _____



LIFE CYCLE CLASSIFICATION: Biennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: 20,000. _____

Control Methods

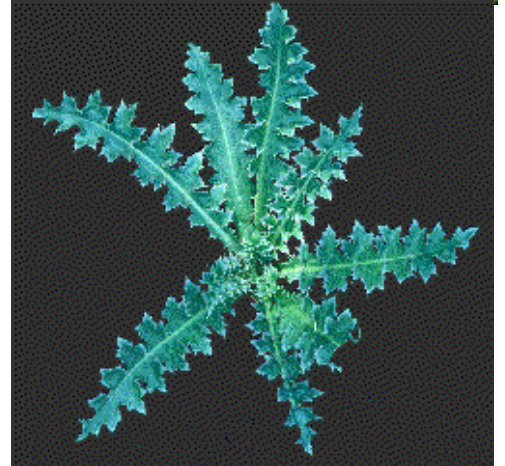
MECHANICAL: Preventing seed set is the most successful method of control. Mow with a rotary mower between the first appearance of pink and the first appearance of brown on the pappus of the earliest heads. Mow cleanly and closely and repeat as needed for control. When hand cutting or digging, cut between the first appearance of pink and the first appearance of brown on the pappus of the earliest head. Dig the root at least two inches below ground level and remove all soil from the roots. _____

CULTURAL: Encourage perennial vegetation, and control while in the rosette stage. _____

BIOLOGICAL: Several agents exist, including a thistle crown fly, thistle head weevil, thistle crown weevil, and a rust, but they have not been effective in Nevada. _____

CHEMICAL: Apply 2,4-D amine or LV ester during the rosette stage of growth. 2,4-D amine can be used in the fall if the soil moisture is sufficient and air temperatures exceed 50° F. Apply chlorsulfuron (Telar®) in the spring from rosette to prebloom stages of growth. Follow label directions and precautions. Clopyralid (Stinger®; Transline®; Curtail® (includes 2,4-D)) is effective but is not yet registered for use in Nevada. _____

ADDITIONAL COMMENTS: _____



Weed Profile: Yellow Starthistle

COMMON NAME: Yellow Starthistle

BOTANICAL NAME: *Centaurea solstitialis*

FAMILY: Asteraceae (Sunflower family)

DESCRIPTION / IDENTIFICATION: Rigidly branched, winged stems covered with white, cottony wool. Basal leaves are deeply lobed, while the upper leaves are entire and sharply pointed. Flower heads are yellow and armed with 3/4" long spines. Ranges from two to 72" tall.



NATIVE TO: Europe and Eurasia. _____

CURRENT DISTRIBUTION: First reported in the U.S. at the turn of the century. Now found in the western counties of Nevada and throughout the west in rangeland, disturbed sites, and abandoned cropland. _____



LIFE CYCLE CLASSIFICATION: Winter annual. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: _____

Control Methods

MECHANICAL: Mow at early flowering. Mowing prior to bolting does not reduce seed production. Mow regrowth at early flowering. Several years of treatment are needed to deplete seed reservoir. _____



CULTURAL: Do not allow this plant to make seed for as many years as it takes to exhaust the seed source. Reseed with competitive vegetation or crops such as perennial native grasses. Does not tolerate dense vegetation/low light situations. _____

BIOLOGICAL: Three seed head weevils, two seed head flies, yellow starthistle bud weevil. Graze after bolting prior to spine formation. Several years needed to deplete seed reservoir. _____

CHEMICAL: Clopyralid (Stinger®; Transline®; Curtail® (includes 2,4-D)) is the most successful control, and works well during rosette stage, but is not yet registered for use in Nevada. Picloram (Tordon®, restricted use) provides effective residual control. Chlorsulfuron (Telar®), 2,4-D, and/or dicamba (Banvel®) with cultural practices can be effective. _____

ADDITIONAL COMMENTS: Poisonous to horses. Early season (spring) herbicide application encourages grass competition. _____

Weed Profile: Eurasian Watermilfoil

COMMON NAME: Eurasian Watermilfoil

BOTANICAL NAME: *Myriophyllum spicatum*

FAMILY: Haloragaceae

DESCRIPTION / IDENTIFICATION: A submersed, rooted aquatic vine two to three meters long. Its fern-like, dark green leaves have 12 to 21 leaflet pairs that are flacid when out of water. Four leaves join in a whorl on the red stem at equal intervals. It can produce adventitious roots at every node. _____



NATIVE TO: Eurasia. _____

CURRENT DISTRIBUTION: Throughout the U.S., and now in Lake Tahoe and the Truckee River. Occupies about 160 acres in the Tahoe Keys, most marinas, and other protected areas with heavy boat traffic. _____



LIFE CYCLE CLASSIFICATION: Perennial aquatic weed. _____

MOST COMMONLY REPRODUCES ITSELF BY: Plant fragments and fruits. _____

NUMBER OF SEEDS / PLANT: Very small, endure long periods of dormancy. _____



Control Methods

MECHANICAL: Mechanical harvesting may worsen the problem by spreading the fragments, but can control seed production. Shade it out by covering the bottom with plastic. Do not concentrate efforts on the small seed source. Instead, try localized dredging and hand removal of vegetation. _____

CULTURAL: Maintain healthy populations of native vegetation. _____

BIOLOGICAL: The long term outlook is for biocontrol with insects, possibly by a native milfoil weevil. _____

CHEMICAL: 2,4-D, simazine (with great care), fluridone (Sonar®; need to maintain 10-20 ppb for 6 weeks), triclopyr (Garlon 3A®). Copper compounds and diquat may also be effective. _____

ADDITIONAL COMMENTS: This weed spreads from lake to lake by boats and trailers. It is easily confused with the native Northern watermilfoil, which has 5 to 9 pairs of leaflets. Concentrate control efforts on upstream sources to protect downstream waterbodies. _____



Weed Profile: Poison Hemlock

COMMON NAME: Poison Hemlock

BOTANICAL NAME: *Conium maculatum*

FAMILY: Apiaceae (Parsley family)

DESCRIPTION / IDENTIFICATION: Tap-rooted plant with stout hollow stems marked by **distinctive purplish splotches**. Its dark green leaves are somewhat fern-like. Tiny white flowers form an umbel. _____



NATIVE TO: Europe. _____

CURRENT DISTRIBUTION: Introduced to the U.S. in the early 1800's as a garden plant. Grows along streams and ditches throughout the U.S. _____



LIFE CYCLE CLASSIFICATION: Biennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: _____



Control Methods

MECHANICAL: Mow prior to seed production. Hand-pull **only while wearing gloves** – this plant is highly poisonous. _____

CULTURAL: Prevent establishment by maintaining desirable plant communities. _____

BIOLOGICAL: Hemlock moth, a defoliating moth, gives inconsistent but sometimes good control. _____

CHEMICAL: Use a broadleaf weed killer such as 2,4-D (Weedar 64®) to protect bank-stabilizing grasses. Make sure the chemical is labeled for use around water when poison hemlock is growing in a ditch, waterway, or wetland. _____

ADDITIONAL COMMENTS: Often mistaken for parsley. Seedling has a fern-like appearance. All plant parts are poisonous, including the large white taproot. Do not handle without gloves. _____

Weed Profile:

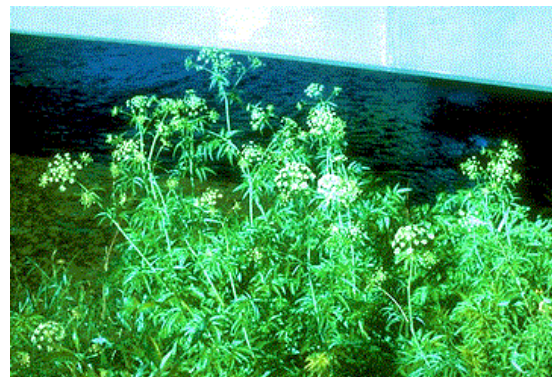
Western Waterhemlock

COMMON NAME: Western Waterhemlock

BOTANICAL NAME: *Cicuta douglasii*

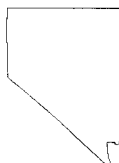
FAMILY: Apiaceae (Parsley family)

DESCRIPTION / IDENTIFICATION: Stems are erect, 3 to 7 feet tall, and swollen at the base. Stems are hollow from a horizontally-divided, enlarged taproot. The single, alternate, pinnately divided leaves have a petiole. Flowers are white in compound umbels with mostly flat tops. _____



NATIVE TO: The intermountain region of the U.S. _____

CURRENT DISTRIBUTION: Occurs along streams, irrigation canals, and in pastures. _____



LIFE CYCLE CLASSIFICATION: Perennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seeds. _____

NUMBER OF SEEDS / PLANT: _____



Control Methods

MECHANICAL: Mow to deplete root food storage. Hand-pull **only while wearing gloves** – this plant is highly poisonous. _____

CULTURAL: Prevent establishment by maintaining desirable plant communities. _____

BIOLOGICAL: _____

CHEMICAL: Use a broadleaf weed killer such as 2,4-D, (Weedar 64®), or water-labeled 2,4-D plus dicamba to protect bank-stabilizing grasses. Make sure the chemical is labeled for use around water if the waterhemlock is growing in a ditch, waterway, or wetland. _____

ADDITIONAL COMMENTS: This is one of the most poisonous plants in the U.S. It is often mistaken for waterparsnip or other edible plant. Do not handle without gloves. Avoid contact with taproot. _____

Weed Profile: Hoary Cress

COMMON NAME: Hoary Cress

BOTANICAL NAME: *Cardaria draba* (complex of 3 species)

FAMILY: Brassicaceae (Mustard family)

DESCRIPTION / IDENTIFICATION: Grows 1 to 2 feet tall. Leaves are 1 to 1½ inches long, blue-green, waxy, and lanceolate. Lower leaves are stalked while the upper leaves are stalkless and have 2 lobes that clasp the stem. Flowers are produced in clusters with 4 white petals that give the plant a white flat-top.

NATIVE TO: Central Europe and the Mediterranean-Caspian Sea area.

CURRENT DISTRIBUTION: Grows on abandoned fields, roadways, ditch banks and disturbed sites with alkaline soils. Prefers 12 to 16 inches annual precipitation.



LIFE CYCLE CLASSIFICATION: Spring-flowering perennial.

MOST COMMONLY REPRODUCES ITSELF BY: Rhizomes and seed.

NUMBER OF SEEDS / PLANT:

Control Methods

MECHANICAL: Prevent seed production. Cultivate every 21 days beginning early in the spring until no additional shoots or seedlings appear. Try repeated disking.

CULTURAL: Plant competitive vegetation.

BIOLOGICAL:

CHEMICAL: There are many effective herbicides, including 2,4-D and glyphosate (Roundup®). Use with caution near water. 2,4-D LV ester or amine applied during the early growth to “broccoli head” stage gives fair control. Apply chlorsulfuron (Telar®) or metsulfuron (Escort®) pre-bloom to bloom stage or onto the rosettes in the fall. Use of a surfactant will increase the effectiveness. Good results have been achieved with application of glyphosate followed by grass seeding into the treated area.

ADDITIONAL COMMENTS: There are three types of *Cardaria* (heart, globe, and lens podded). The seed life in the soil is 3 to 6 years. This plant is often confused with tall whitetop (*Lepidium latifolium*).

Weed Profile: Purple Loosestrife

COMMON NAME: Purple Loosestrife

BOTANICAL NAME: *Lythrum salicaria*

FAMILY: Lythraceae

DESCRIPTION / IDENTIFICATION: Usually 4 to 5 feet tall with **characteristic square stems**. Lanceolate leaves are arranged opposite or in whorls. The flower is a rose-purple spike. _____



NATIVE TO: Europe. _____

CURRENT DISTRIBUTION: Throughout the U.S., but in the west, it is most prevalent in riparian areas in CA, CO, ID, UT, and WA. _____



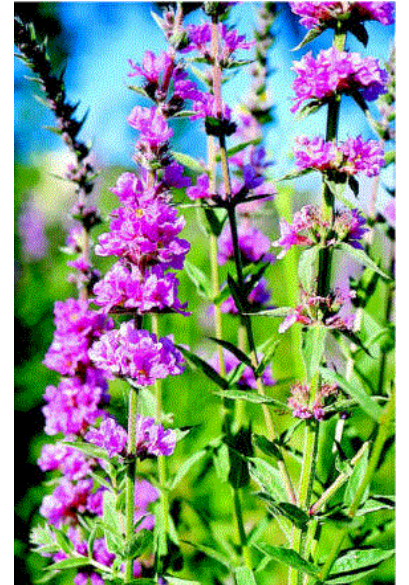
LIFE CYCLE CLASSIFICATION: Perennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed and adventitious root buds. _____

NUMBER OF SEEDS / PLANT: 2.5 million. _____

Control Methods

MECHANICAL: Dig young plants, taking care to remove all root fragments. This can be very effective, but requires constant vigilance in monitoring for regrowth. _____



CULTURAL: **Do not** plant as an ornamental. Encourage competitive vegetation at water margins. If herbicides are used, follow treatment with broadleaf and/or grass seedings. _____

BIOLOGICAL: Flower-feeding beetle, root weevil, seed weevil. None introduced in NV to date. _____

CHEMICAL: Glyphosate (Roundup®) is effective. Use the water-labeled formulation (Rodeo®) in riparian areas. Use with caution near waterbodies to avoid contaminating water supplies. _____

ADDITIONAL COMMENTS: Do not sell or plant as an ornamental. _____

Weed Profile: Tall Whitetop

COMMON NAME: Tall Whitetop, Perennial Pepperweed

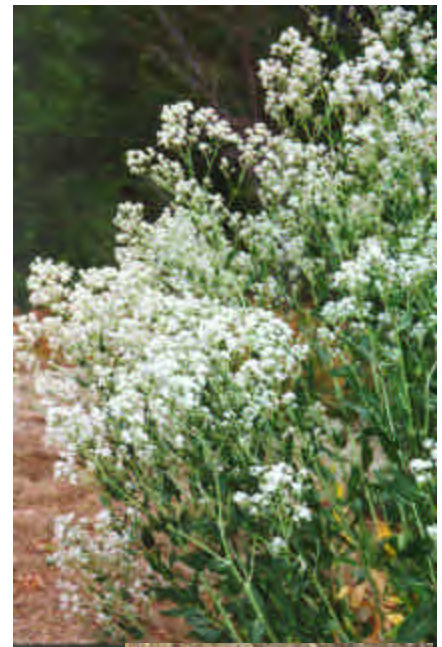
BOTANICAL NAME: *Lepidium latifolium*

FAMILY: Brassicaceae (Mustard family)

DESCRIPTION / IDENTIFICATION: Two to six foot tall weed with lanceolate, bright green to greyish leaves with entire to toothed margins. Basal leaves are larger than the upper leaves, which occur on the flower stalk. Individual white flowers are small and clustered at the ends of the branched flower stalks. _____

NATIVE TO: Southern Europe and Western Asia. _____

CURRENT DISTRIBUTION: Has naturalized to many areas of the U.S. Commonly inhabits waterways, ditch banks and wet meadows. Adapted to saline soils. _____



LIFE CYCLE CLASSIFICATION: Perennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Rhizomes and seeds. _____

NUMBER OF SEEDS / PLANT: 10,000/stem. _____

Control Methods

MECHANICAL: Keep mowed at all times to deplete food production in plant. Tillage encourages resprouting from rhizomes; avoid cultivation and plowing. _____

CULTURAL: Eliminate small satellite populations immediately. Use herbicides followed by seeding with a competitive crop or rhizomatous grass. _____

BIOLOGICAL: None found so far, but many agents are being examined, including a white rust. Because this plant occurs in the Mustard family, biological controls are discouraged as they may have the potential for crop damage. _____

CHEMICAL: Many being tried. 2,4-D amine formulations on wet sites and ester formulations on dry sites (repeat applications essential). Metsulfuron (Escort®) used for control in pasture, rangeland and non-crop areas since it does not injure grasses. Chlorsulfuron (Telar®) is used on non-crop sites only, but is not as safe on grasses as metsulfuron. Imazapyr (Arsenal®) gives bare-ground control. Read labels for grazing restrictions. Use all herbicides with caution around waterways. _____

ADDITIONAL COMMENTS: _____

Weed Profile: Tamarisk

COMMON NAME: Tamarisk, Saltcedar

BOTANICAL NAME: *Tamarix ramosissima*, others

FAMILY: Tamaricaceae

DESCRIPTION / IDENTIFICATION: Five to 20 foot tall tree or shrub with reddish brown bark, turning fissured gray with age. Pale, bluish-green leaves are small and scale-like, with a smooth entire margin. Flowers are small, pink to white, five-petaled, delicate and showy. Has a deep primary root. Deep adventitious roots are produced at nodes and from buried stems.

NATIVE TO: Turkey, S. Iran, S. USSR to China and Mongolia.

CURRENT DISTRIBUTION: Naturalized throughout the southwestern desert of the U.S. to 5400' elevation.



LIFE CYCLE CLASSIFICATION: Woody shrub to small tree; flowers from spring to late summer.

MOST COMMONLY REPRODUCES ITSELF BY: Seed; roots spread if disturbed or fragmented.

NUMBER OF SEEDS / PLANT: 500,000/year/plant.



Control Methods

MECHANICAL: Burning followed by herbicides; bulldozing; pulling of roots. Will resprout after cutting.

CULTURAL: Extended flooding and hand removal of small seedlings.

BIOLOGICAL: Potential importation of biocontrol agents including a leafhopper and scale from Asia promises up to 80% control. There are concerns about the use of biocontrol agents due to potential impacts on the habitat of the endangered Southwestern willow flycatcher.

CHEMICAL: Immediate herbicide application to cut stumps is the most common method. Triclopyr (Garlon®) is used for cut stumps and basal growth. Use glyphosate (Roundup®) undiluted as a cut stump treatment, as it is not taken up by the leaves. Apply imazapyr (Arsenal®) late in the season at a 1 to 2% solution. A 1:1 mixture of imazapyr and glyphosate can be used for similar effectiveness at a lower cost.

ADDITIONAL COMMENTS: Originally introduced to the U.S. as a streambank stabilizer. Well adapted to heat, cold, alkaline and salty soils, wind, and flooding. Can grow as much as three to four feet per season. Plants sold by nurseries are said to be sterile; however, they may hybridize with wild plants. Very high water user.

Weed Profile: Chicory

COMMON NAME: Chicory

BOTANICAL NAME: *Cichorium intybus*

FAMILY: Asteraceae (Sunflower family)

DESCRIPTION / IDENTIFICATION: Grows one to six feet tall. Rough basal leaves are oblanceolate, petiolate, toothed, or pinnately parted, and are two to ten inches long in the rosette. Upper leaves on the spreading branches do not have a stalk, and are sometimes entire. Flowers are a delft blue.

NATIVE TO: Mediterranean.

CURRENT DISTRIBUTION: Throughout the Northern Hemisphere. Common along roadsides and wastelaces.



LIFE CYCLE CLASSIFICATION: Mostly annual in NV, but perennial in milder climates.

MOST COMMONLY REPRODUCES ITSELF BY: Seed.

NUMBER OF SEEDS / PLANT:

Control Methods

MECHANICAL: Mow. Graze early in the spring and summer.

CULTURAL: Do not allow seed to develop. Keep existing desirable vegetation healthy and competitive.



BIOLOGICAL:

CHEMICAL: Apply broadleaf herbicides such as 2,4-D, dicamba (Banvel®), triclopyr (Garlon 3A®), metsulfuron (Escort®), clopyralid + 2,4-D (Curtail®), etc.

ADDITIONAL COMMENTS: Used as a coffee substitute, and as a salad green.

Weed Profile: Common Mallow

COMMON NAME: Common Mallow, Cheeseweed

BOTANICAL NAME: *Malva neglecta*

FAMILY: Malvaceae (Hibiscus family)

DESCRIPTION / IDENTIFICATION: Rounded to spreading broadleaved plant with a geranium-shaped leaf. Produces a pale pink, five-petaled flower. A very large, strong taproot makes this weed difficult to pull. Flowers over the entire season. Seed pod forms a sectioned cheesewheel. _____

NATIVE TO: Europe

CURRENT DISTRIBUTION: Common in waste areas, gardens, and cultivated areas throughout North America. _____



LIFE CYCLE CLASSIFICATION: Annual, biennial, perennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: Up to 200,000. _____

Control Methods

MECHANICAL: Hoe or pull young seedlings. Pull deep established taproots from moistened soil. Cultivate frequently and plow. _____

CULTURAL: Mulches prevent seed germination. _____

BIOLOGICAL: _____

CHEMICAL: Apply 2,4-D as spot treatment. Preemergent herbicides and most translocated broadleaf herbicides are effective. _____

ADDITIONAL COMMENTS: _____

Weed Profile: Common Mullein

COMMON NAME: Common Mullein, Boy Scout's Toilet Paper

BOTANICAL NAME: *Verbascum thapsus*

FAMILY: Scrophulariaceae (Figwort family)

DESCRIPTION / IDENTIFICATION: Thick, fuzzy, light green leaves form a rosette in the first year. During the second year, a single, stout, upright stem grows two to six feet tall from the basal rosette. Leaves on the flower spike alternate and overlap. Yellow flowers are produced from June to August.

NATIVE TO: Introduced from Europe, but native of Asia.

CURRENT DISTRIBUTION: Common throughout temperate N. America along river bottoms, in pastures, along fence rows, and in waste areas in gravelly soils.



LIFE CYCLE CLASSIFICATION: Biennial.

MOST COMMONLY REPRODUCES ITSELF BY: Seed.

NUMBER OF SEEDS / PLANT: 200,000; survive 39 years in soil.

Control Methods

MECHANICAL: Pull, dig, or mow prior to flower stalk development. Not a competitive plant, and can be controlled by restricting seed production.

CULTURAL: Control during the first year of growth. Do not allow to set seed.

BIOLOGICAL:

CHEMICAL: Apply glyphosate (Roundup®) directly into center of rosette to ensure close proximity to meristematic tissue. Use broadleaf-specific herbicides with a surfactant to aid spreading on the fuzzy leaves. The leaf hairs inhibit uptake of most herbicides.

ADDITIONAL COMMENTS: Livestock will not eat mullein, probably due to its fuzzy leaves. Mullein can be considered an ornamental in some settings and is sold in garden catalogs. It has medicinal uses.



Weed Profile: Curly Dock

COMMON NAME: Curly Dock, Sour Dock

BOTANICAL NAME: *Rumex crispus*

FAMILY: Polygonaceae (Buckwheat family)

DESCRIPTION / IDENTIFICATION: Leaves are dark green and smooth with an entire, crimped margin. Leaves are alternate and basal until flower stalk development. Small green flowers without petals turn reddish-brown at maturity. Grows 2 to 5 feet tall. _____

NATIVE TO: Eurasia. _____

CURRENT DISTRIBUTION: Throughout the U.S. in riparian areas, wet meadows, and along ditch banks and waste areas. _____



LIFE CYCLE CLASSIFICATION: Tap-rooted perennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: 30,000; survive 39 years in soil.

Control Methods

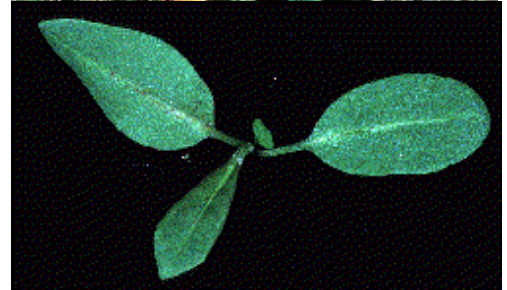
MECHANICAL: Mowing, grazing, digging. _____

CULTURAL: Do not allow seeds to set. Mow pasture or area to prevent flowering, or grow a row crop and cultivate regularly. Fertilize crops as needed. _____

BIOLOGICAL: _____

CHEMICAL: Use broadleaf herbicides such as 2,4-D or dicamba (Banvel®). Apply before flower elongation. Repeated treatments needed. Use glyphosate (Roundup®) at early heading. Apply chlorsulfuron (Telar®) to young actively growing weeds on non-cropland only. Chlorsulfuron will kill willows and cottonwoods; use with caution. _____

ADDITIONAL COMMENTS: _____



Weed Profile: Curlycup Gumweed

COMMON NAME: Curlycup Gumweed

BOTANICAL NAME: *Grindelia squarrosa*

FAMILY: Asteraceae (Sunflower family)

DESCRIPTION / IDENTIFICATION : One to three feet tall, with alternate, one to three inch long leaves that have saw-toothed margins. Flowers are bright yellow. Curved bracts surround the flower, and glands exude a sticky substance. _____

NATIVE TO: North America. _____

CURRENT DISTRIBUTION: Pastures, rangelands, roadsides, and disturbed sites. _____



LIFE CYCLE CLASSIFICATION: Biennial or short-lived perennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: 30,000; may survive 10 years in soil.

Control Methods

MECHANICAL: Mow to interrupt seed production; however, this may encourage prostrate growth. Cultivate early in the year when plants are small. _____

CULTURAL: Encourage competitive vegetation, since gumweed will not outcompete in most situations. _____

BIOLOGICAL: _____

CHEMICAL: Apply broadleaf herbicides such as 2,4-D LV ester during early spring when new growth and seedlings are fully emerged. Apply dicamba up to flower bud stage. _____

ADDITIONAL COMMENTS: Highly drought resistant and unpalatable to livestock. Reputed to have medicinal value. _____



Weed Profile: Dodder

Dodder parasitizing alfalfa **COMMON NAME:** Dodder, Strangleweed
BOTANICAL NAME:

Cuscuta spp.

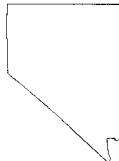
FAMILY: Convolvulaceae (Morningglory family)

DESCRIPTION / IDENTIFICATION: Leafless, parasitic annual with slender, thread-like, yellow to orange twining stems which coil around and attach to host plants with wart-like suckers. Roots for only a short time after germination, and then attaches to the host plant, drawing off nutrients until the host is severely suppressed or killed. Lacks chlorophyll.



NATIVE TO: Most species native to North America.

CURRENT DISTRIBUTION: Throughout the west; reported in Canada. Often found in pastures and fields where alfalfa is grown; also attacks vegetables, ornamentals, and native plants.



LIFE CYCLE CLASSIFICATION: Annual parasitic seed plant.

MOST COMMONLY REPRODUCES ITSELF BY: Seed. Seeds are viable for many years in the soil.

NUMBER OF SEEDS / PLANT: 16,000.

Control Methods

MECHANICAL: Mow, burn, and remove infected material. Infested host plants should be destroyed. Do not pull dodder off the plants, since any stem pieces left behind will continue to grow. Use frequent cultivation if possible. Clean all equipment carefully.

CULTURAL: Destroy the host plant by any means, including burning.

BIOLOGICAL:

CHEMICAL: Use glyphosate (Roundup®) to kill the host plant. This is the most effective treatment. Use soil-applied herbicides or preemergents. Apply preemergents in early spring, about the time of last expected frost, when the majority of dodder seeds sprout. Repeat in 6 to 8 weeks.

ADDITIONAL COMMENTS: There may be grazing restrictions on herbicide-applied feed crops. Do not graze or harvest alfalfa or use as a feed.

Weed Profile: Field Bindweed

COMMON NAME: Field Bindweed

BOTANICAL NAME: *Convolvulus arvensis*

FAMILY: Convolvulaceae (Morningglory family)

DESCRIPTION / IDENTIFICATION: Spreading, flat vine with an extensive, fibrous root system. Vine grows up to ten feet long. The alternate, arrowhead-shaped leaves are up to two inches long. Trumpet-shaped flowers are white to light pinkish. _____

NATIVE TO: Eurasia. _____

CURRENT DISTRIBUTION: Introduced to North America in 1739; now naturalized throughout the U.S. _____



LIFE CYCLE CLASSIFICATION: Perennial vine. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed and root. The seed is long-lived. _____

NUMBER OF SEEDS / PLANT: _____

Control Methods

MECHANICAL: Pull the vine to interrupt seed production. Till every 2 to 3 weeks during the growing season for 2 to 3 years to starve out the root system. Cultivation tends to spread the infestation. _____

CULTURAL: Practice early detection and control of small populations. _____

BIOLOGICAL: Bindweed gall moth, bindweed moth. _____

CHEMICAL: A systemic herbicide must be used for control. Dicamba (Banvel®), glyphosate (Roundup®), or 2,4-D amine applied yearly will reduce and/or prevent establishment of seedlings. Apply at bud growth stage or during summer fallow. Glyphosate works best when applied in late fall prior to the first frost. _____

ADDITIONAL COMMENTS: Creeps rapidly over landscape plants, and has an extensive root system which can amass 8 to 15+ tons per acre. _____



Weed Profile: Foxtail Barley

COMMON NAME: Foxtail Barley

BOTANICAL NAME: *Hordeum jubatum*

FAMILY: Poaceae (Grass family)

DESCRIPTION / IDENTIFICATION: Smooth and erect stems six inches to 2 feet tall in clumps 8 inches across. Pale green leaves are rough, narrow, and flat or U-shaped. Flower heads are 2 to 4 inches long with slender barbed awns. Flower heads nod. _____

NATIVE TO: N. America. _____

CURRENT DISTRIBUTION: Common in wet and alkaline soils and abandoned pastures from 3,500 to 10,000' elevation. _____



LIFE CYCLE CLASSIFICATION: Short-lived perennial. _____

MOST COMMONLY REPRODUCES ITSELF B : Seed. _____

NUMBER OF SEEDS / PLANT: 200. _____

Control Methods

MECHANICAL: Can be grazed early in the year. Burning has limited success. Mow to interrupt seed production, but often grows prostrate and continues to flower after mowing. _____

CULTURAL: Maintain the health of a desirable plant community so that infestations do not develop. Seed with competitive and successional crops after control measures are implemented. Avoid overgrazing and bare ground conditions. _____

BIOLOGICAL: There is limited potential for this form of control because of the association with food crops. _____

CHEMICAL: Apply glyphosate (Roundup®) or preemergent herbicides including sethoxydim (Poast®) or fluazifop (Fusilade®). Preemergents such as trifluralin (Treflan®) are the least expensive solution for rangelands. _____

ADDITIONAL COMMENTS: There are many types of foxtails. Seed germination usually occurs in the fall, and wind scatters the seeds. Animals also assist in seed dispersal. The barbed awns cause damage to cattle, livestock, and pets. _____



Weed Profile: Kochia

COMMON NAME: Kochia

BOTANICAL NAME: *Kochia scoparia*

FAMILY: Chenopodiaceae (Goosefoot family)

DESCRIPTION / IDENTIFICATION: One to six feet tall, with numerous narrow, bright green, hairy leaves attached directly to the stem. Stems are round and erect, slender, pale green and very branched. _____

NATIVE TO: Europe. _____

CURRENT DISTRIBUTION: Waste places and roadsides up to 8500'.



LIFE CYCLE CLASSIFICATION: Annual. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

NUMBER OF SEEDS / PLANT: 14,600 _____

Control Methods

MECHANICAL: Cut before seed set. _____

CULTURAL: Avoid disturbing soil. _____

BIOLOGICAL: _____

CHEMICAL: Most broadleaf herbicides, such as 2,4-D, in pre- and post-emergent formulations are effective. Dicamba (Banvel®), triclopyr (Garlon 3A®), metsulfuron (Escort®), clopyralid + 2,4-D (Curtail®), etc. may be used, or try preemergents. _____

ADDITIONAL COMMENTS: _____



Weed Profile: Plantain

COMMON NAME: Broadleaf Plantain, Buckhorn Plantain

BOTANICAL NAME: *Plantago major*, *Plantago lanceolata*

FAMILY: Plantaginaceae (Plantain family)

DESCRIPTION / IDENTIFICATION: Fibrous roots and elliptic to ovate based leaves with entire or irregularly toothed margins. Most are three to seven inches long (broadleaf) or four to 12 inches long (buckhorn). Flowers form on 5 to 18 inch long spikes. _____



NATIVE TO: Europe. _____

CURRENT DISTRIBUTION: Throughout the U.S. in pastures, lawns, disturbed sites, and moist areas. _____

↓ **Broadleaf Plantain** ↑



LIFE CYCLE CLASSIFICATION: Perennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____

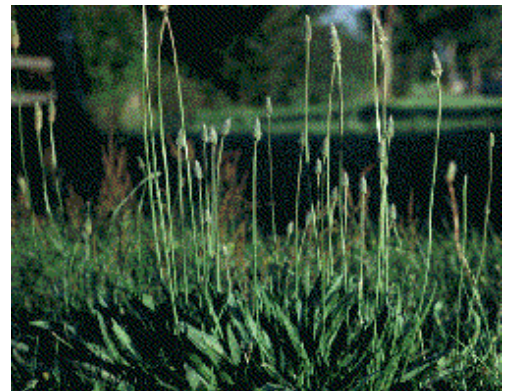
NUMBER OF SEEDS / PLANT: 36,000. _____

Control Methods

MECHANICAL: Dig, cultivate, and plow. Does not tolerate cultivation when young. _____

CULTURAL: Prevent invasion by practicing integrated weed management. _____

BIOLOGICAL: _____



Buckhorn Plantain

CHEMICAL: Most broadleaf herbicides, such as 2,4-D, in pre- and post-emergent formulations are effective. Dicamba (Banvel®), triclopyr (Garlon 3A®), metsulfuron (Escort®), clopyralid + 2,4-D (Curtail®), etc. may be used. _____

ADDITIONAL COMMENTS: Narrow-leaf or buckhorn plantain (*Plantago lanceolata*) is equally as common as broadleaf plantain (*Plantago major*). Buckhorn plantain has longer, more narrow leaves with prominent veins. _____

Weed Profile: Redroot Pigweed

COMMON NAME: Redroot Pigweed
BOTANICAL NAME: *Amaranthus retroflexus*
FAMILY: Amaranthaceae (Pigweed or Amaranth family)
DESCRIPTION / IDENTIFICATION: Several feet tall, with a distinctive red root and lance-shaped, light green leaves. Flowers are bristly, with irregular clusters at the top of the plant. _____



NATIVE TO: Europe or tropical America. _____
CURRENT DISTRIBUTION: Throughout the U.S. _____



LIFE CYCLE CLASSIFICATION: Spring and summer annual. ____
MOST COMMONLY REPRODUCES ITSELF BY: Seed. _____
NUMBER OF SEEDS / PLANT: 100,000; seeds can survive 10 years in soil. _____

Control Methods

MECHANICAL: Mow or hoe at early stages of growth, and pull seedlings. Cultivate regularly in row crops. _____

CULTURAL: Do not allow to flower. Fertilized crops as needed.

BIOLOGICAL: _____



CHEMICAL: Glyphosate (Roundup®) is effective as a spot spray. Use broadleaf herbicides if the crop is corn or another row crop. Preemergents such as trifluralin (Treflan ®) may also be effective. Trifluralin must be incorporated into the soil by watering or disking to be effective. _____

ADDITIONAL COMMENTS: The leaves, stems, and roots are toxic to cattle and swine. _____

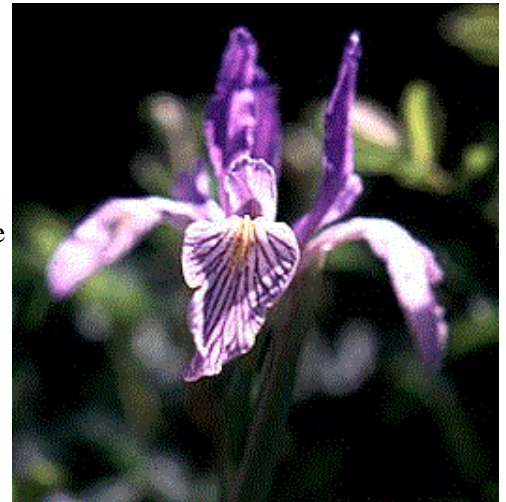
Weed Profile: Wild Iris

COMMON NAME: Wild Iris, Rocky Mountain Iris

BOTANICAL NAME: *Iris missouriensis*

FAMILY: Iridaceae (Iris family)

DESCRIPTION / IDENTIFICATION: Stems one to two feet tall with basal leaves ¼ to ½ inch wide, and branching rhizomes. Flowers are blue to violet, with up to four, 2 to 3 inch long flowers produced per stem. _____



NATIVE TO: North America. _____

CURRENT DISTRIBUTION: Widespread in meadows and pastures east of the Cascades. Common along streams and seepages on rangeland. _____



LIFE CYCLE CLASSIFICATION: Perennial. _____

MOST COMMONLY REPRODUCES ITSELF BY: Rhizomes and seed. _____

NUMBER OF SEEDS / PLANT: _____

Control Methods

MECHANICAL: Dig and remove rhizomes. _____

CULTURAL: Avoid overwatering pastures. Overwatering creates ideal site conditions for wild iris. _____

BIOLOGICAL: _____

CHEMICAL: Apply 2,4-D at the early bloom stage. Thorough wetting of the foliage is necessary. _____

ADDITIONAL COMMENTS: Highly competitive with range and forage grasses. Causes problems when cutting hay, and is toxic to cattle and horses. _____

Further Reading

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5. Whitson, T.D. (ed.) 1992. Weeds of the West. The Western Society of Weed Science, Pioneer of Jackson Hole, Jackson, WY, 630 pp.
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8. Wilson, R.E. and J.A. Young. 1996. Managing Invasive Noxious Range Weeds in the Great Basin. University of Nevada Cooperative Extension, FS-96-12.

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