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:

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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

*Information herein is offered with no discrimination. Listing a commercial product does not imply an endorsement by the authors, University of Nevada Cooperative Extension, or its personnel. Likewise, criticism of products or equipment not listed is neither implied nor intended. University of Nevada Cooperative Extension and its authorized agents do not assume liability for suggested use(s) of chemicals herein. Pesticides must be applied according to the label directions on the pesticide container to be lawfully and effectively applied.*

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 chlorsulfuron (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. ____

_____________________________________________________

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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.

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**LIFE CYCLE CLASSIFICATION:** Winter annual.

**MOST COMMONLY REPRODUCES ITSELF BY:** Seed.

**NUMBER OF SEEDS / PLANT:**

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**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.

**BIOLICAL:** 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:**

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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:**

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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 ¾” 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:**

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**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. Reseeds 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. ______

**MOS 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), fluridine (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:**

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### 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 water-parsnip 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: ________________________________

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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 ob lanceolate, 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.  

| 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.  

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Weed Profile: Common Mallow

COMMON NAME: Common Mallow, Cheeseweed
BOTANICAL NAME: Malva neglecta
FAMILY: Malvaceae (Hibiscus family)
DESCRIPTION / IDENTIFICATION: Rounded to spreading broadleafed 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.

BIOLICAL:

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: 

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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

**Common Name:** Dodger, 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.

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**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 BY:** 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 successionary 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: 

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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.

Native to Europe.

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: 

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


For more information, contact:

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