

A thick dark blue vertical bar runs down the left side of the page. A medium blue arrow points to the right, overlapping the bar, with the date '9/30/2021' inside it.

9/30/2021

Noxious Weed Control Plan

Quilici Villages

Several thin, curved lines in dark blue and light grey originate from the bottom left corner and sweep upwards and to the right, creating a sense of movement or growth.

1 Noxious Weed Regulations

The Nevada Department of Agriculture (NDA) has responsibility for jurisdiction, management, and enforcement of the State of Nevada's (State) noxious weed law. The State definition of a noxious weed is "any species of plant which is, or is likely to be, detrimental or destructive and difficult to control or eradicate" (Nevada Revised Statutes [NRS] 555.005). State noxious weed laws pertain to both private and public land.

The NDA maintains and updates the list of Nevada noxious weeds under the Nevada Administrative Code (NAC) 555.010 (Attachment A). The Nevada noxious weeds listed on NAC 555.010 are further divided into the following categories of species: "A," "B," and "C." Category A weeds are not found or are limited in distribution throughout the state. Category A weeds are actively excluded from the State, actively eradicated wherever found, and actively eradicated from nursery stock dealer premises. Control is required by the State in all infestations. Category B weeds are established in scattered populations in some counties of the State. Category B weeds are actively excluded where possible and actively eradicated from nursery stock dealer premises. Control is required by the State in areas where populations are not well established or previously unknown to occur. Category C weeds are currently established and generally widespread in many counties of the State. Category C weeds are actively eradicated from nursery stock dealer premises.

2 Purpose and Goals of the Plan

The purpose of this plan is to establish measures that will prevent the introduction and spread of State-listed noxious weeds in areas of new disturbance as a result of project activities. This Plan is considered preliminary and will be updated for suitability and adequacy as the project progresses.

3 Prevention and Control Measures and BMPs

Prevention and control measures are operating procedures and best management practices (BMPs) that reduce the risk of introducing noxious weeds to the project area and spreading existing noxious weeds into areas of new disturbance. The following measures and BMPs will be implemented for noxious weed prevention and control.

3.1 Minimize Disturbance

Clearing and grading will be minimized to preserve mature native vegetation.

3.2 Topsoil Management

Topsoil will be salvaged where growth media exists and in conformance with the project design. Topsoil from noxious weed established areas will not be transported to another area of the project.

3.3 Concurrent Reclamation

Temporary erosion and sediment control measures and permanent reclamation treatments will be applied in accordance with the Storm Water Pollution Prevention Plan (SWPPP). Using species in a seed mix that have been successful in previous reclamation efforts, and seed suited for site conditions, will reduce the potential for noxious weed establishment by providing a dense perennial plant cover. Plantings may serve as an additional option or in conjunction with reclamation seeding and will be determined by the Project design. Noxious weeds will not be used to support the 70% revegetation requirement of native background cover for the Notice of Termination.

3.4 Certified Weed-Free Materials

Reclamation seed mixes will be certified pure live seed and weed free. Off-site materials used for erosion control, such as mulch, will be certified weed free. Topsoil, if imported from off-site, will be certified weed-free.

3.5 Decontaminate Vehicles

Contractors are required to clean large equipment locally prior to mobilizing and off-loading to the project area. The main areas on vehicles (equipment tracks, tires, undercarriage, axles, wheel wells, running boards, bumpers, and brush guard assemblies) must be free of mud, dirt, and vegetation.

3.6 Early Detection and Treatment

If noxious weeds are introduced to the area or are spread to new disturbance, treatment measures will be implemented immediately to control those infestations before they become established. The treatment methods used and the timing of treatment would be determined on a species-specific basis to be most effective. Fact sheets describing treatment options for each of the noxious weed species observed in the project area by NCE in 2020 (Table 1) are included in Attachment B.

Table 1. Noxious Weeds Recorded in the Project Area (NCE 2020)

Common Name	Scientific Name	Category
Yellow starthistle	<i>Centaurea solstitialis</i>	A
Medusahead	<i>Taeniatherum caput-medusae</i>	B
Musk thistle	<i>Caduus nutans</i>	C
Poison hemlock	<i>Conium maculatum</i>	C
Hoary cress	<i>Cardaria draba</i>	C
Perennial pepperweed	<i>Lepidium latifolium</i>	C
Scotch thistle	<i>Onopordum acanthium</i>	C

Contact information for the NDA staff member who can give recommendations for treatment timing and methods for weeds in the project area is listed below:

Andrea Moe

Agricultural Inspector III

Office Phone: (775) 353-3672

Cell: (775) 750-7309

Email: amoe@agri.nv.gov

ATTACHMENT A

NEVADA DEPARTMENT OF AGRICULTURE
2021 NEVADA NOXIOUS WEED LIST

Nevada Noxious Weed List by Category

Revised 2/2/21



Category A Weeds:

Category A noxious weeds are weeds that are generally not found or that are limited in distribution throughout the State.

African rue	<i>Peganum harmala</i>
Austrian fieldcress	<i>Rorippa austriaca</i>
Austrian peaweed	<i>Sphaerophysa salsula</i>
Barbed goatgrass	<i>Aegilops triuncialis</i>
Bufflegrass	<i>Pennisetum ciliare</i>
Camelthorn	<i>Alhagi pseudalhagi</i>
Common crupina	<i>Crupina vulgaris</i>
Curly-leaf pondweed	<i>Potamogeton crispus</i>
Desert knapweed	<i>Volutaria tubuliflora</i>
Dyer's woad	<i>Isatis tinctoria</i>
Eurasian water-milfoil	<i>Myriophyllum spicatum</i>
Flowering rush	<i>Butomus umbellatus</i>
Giant salvinia	<i>Salvinia molesta</i>
Goats rue	<i>Galega officinalis</i>
Green fountain grass	<i>Pennisetum setaceum</i>
Houndstongue	<i>Cynoglossum officinale</i>
Hydrilla	<i>Hydrilla verticillata</i>
Iberian starthistle	<i>Centaurea iberica</i>
Jointed goatgrass	<i>Aegilops cylindrical</i>
Klamath weed	<i>Hypericum perforatum</i>
Malta starthistle	<i>Centaurea melitensis</i>
Mediterranean sage	<i>Salvia aethiopis</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Purple starthistle	<i>Centaurea calcitrapa</i>
Rush skeletonweed	<i>Chondrilla juncea</i>
Squarrose knapweed	<i>Centaurea virgata</i>
Sulfur cinquefoil	<i>Potentilla recta</i>
Syrian bean caper	<i>Zygophyllum fabago</i>
Ventenata	<i>Ventenata dubia</i>
Yellow starthistle	<i>Centaurea solstitialis</i>
Yellow toadflax	<i>Linaria vulgaris</i>

Category B Weeds:

Category B listed noxious weeds are weeds that are generally established in scattered populations in some counties of the State.

Black henbane	<i>Hysocyamus niger</i>
Carolina horse nettle	<i>Solanum carolinense</i>
Dalmation toadflax	<i>Linaria dalmatica</i>
Diffuse knapweed	<i>Centaurea diffusa</i>
Giant reed	<i>Arundo donax</i>
Leafy spurge	<i>Euphorbia esula</i>
Medusahead	<i>Taeniatherum caput-medusae</i>
Mayweed chamomile	<i>Anthemis cotula</i>
Perennial sowthistle	<i>Sonchus arvensis</i>
Sahara mustard	<i>Brassica tournefortii</i>
Silverleaf nightshade	<i>Solanum elaeagnifolium</i>
Spotted knapweed	<i>Centaurea maculosa</i>

Category C Weeds:

Category C listed noxious weeds are weeds that are generally established and generally widespread in many counties of the State.

Canada thistle	<i>Cirsium arvense</i>
Hoary cress	<i>Cardaria draba</i>
Johnson grass	<i>Sorghum halepense</i>
Musk thistle	<i>Caduus nutans</i>
Perennial pepperweed	<i>Lepdium latifolium</i>
Poison hemlock	<i>Conium maculatum</i>
Puncture vine	<i>Tribulus terrestris</i>
Russian knapweed	<i>Acroptilon repens</i>
Salt cedar	<i>Tamarix spp.</i>
Scotch thistle	<i>Onopordum acanthium</i>
Water hemlock	<i>Cicuta maculata</i>

ATTACHMENT B

NEVADA DEPARTMENT OF AGRICULTURE
NOXIOUS WEED FACT SHEETS



Nevada Noxious Weed Field Guide



SP-10-01

Nevada Noxious Weed Field Guide

Earl Creech, State Weed Specialist

Brad Schultz, Extension Educator

Lisa Blecker, Research Coordinator

University of Nevada Cooperative Extension

Copyright © 2010, University of Nevada Cooperative Extension. All rights reserved.

No part of this publication may be reproduced, modified, published, transmitted, used, displayed, stored in a retrieval system, or transmitted in any form or by any means electronic, mechanical, photocopy, recording or otherwise without the prior written permission of the publisher and authoring agency.

The University of Nevada Reno is an Equal Employment Opportunity/Affirmative Action employer and does not discriminate on the basis of race, color, religion, sex, age, creed, national origin, veteran status, physical or mental disability, or sexual orientation in any program or activity it operates. The University of Nevada employs only United States citizens and aliens lawfully authorized to work in the United States.

Weed Management Recommendations in this Booklet

Strategies for prevention, detection and restoration are essentially the same for each of Nevada's noxious weeds. Yet, control methods can differ greatly from weed to weed. To minimize the amount of text required in the pages that follow, the specific weed management recommendations for each weed are focused solely on control. Nevertheless, the elements of prevention, detection and restoration are of equal (and often greater) importance as control. Although not specifically mentioned for each weed, all four fundamental elements should be a part of every weed management program.

This booklet also provides herbicide recommendations as a starting point for individuals looking for chemical control options. Due to the large number of trade (brand) named products available and the fact that trade names are constantly changing, common names (active ingredients) of chemicals are presented. To help readers identify the chemical common name, trade names of a few commercial products are provided in the table on pages 112-113.

Cardaria spp.

Hoary cress

Stem	0.5-2 ft. tall; branched near top; covered with short hairs
Leaves	- Alternate, 1-4 in. long, blue-green, oblong to lance-shaped and covered with short hairs; edges (margins) are toothed to smooth - Lower leaves have short leaf stems (petioles); bases of upper leaves have lobes that clasp the stem
Flower	- White with 4 petals; occur in clusters that give plant a flat-topped appearance; occur from spring to early-summer - Seed pods are oval to heart-shaped; each contain 2 seeds
Root	Deep, spreading root system
Other	- Grows best in disturbed, alkaline soils; often found in pastures, fields, roadsides, rangelands, waste areas and along waterways; known to occur in all Nevada counties - Perennial; reproduces through roots and seeds - Also known as whitetop; three species occur in Nevada: hoary cress (<i>C. draba</i>) is most common but lens-podded whitetop (<i>C. chalapensis</i>) and hairy whitetop (<i>C. pubescens</i>) also occur
Control	- Dig or pull individual plants for small infestations; remaining roots can produce new plants - Frequent tillage or mowing for several years can reduce plant density - Apply 2,4-D to actively growing plants prior to bud stage; chlorsulfuron or metsulfuron from bud to early bloom; imazapic from full bloom until necrosis



Hoary cress

[47]

*Taeniatherum caput-medusae***Medusahead**

Stem	0.5-2 ft. tall; slender; round in cross-section
Leaves	4-12 in. long, less than 0.12 in. wide; sometimes covered with short hairs; collar region usually has long hairs, auricles and a membranous ligule
Flower	Seedhead is a spike, 0.5-2 in. long; awns are stiff, straight or twisted, barbed and up to 3 in. long; spikes often remain intact on dry plants through winter
Root	Fibrous
Other	- Grows best on clay soils; primarily infests rangeland; known to occur in Churchill, Douglas, Elko, Humboldt, Pershing, Storey and Washoe counties - Annual; reproduces by seed; matures 2-4 weeks later than other annual grasses - Unpalatable to grazing animals due to high levels of silica in the foliage and long, stiff awns
Control	- Tillage, mowing or grazing prior to seed set can reduce stands - Burning has had mixed results; most effective with a hot, slow fire prior to medusahead seed maturity but after other species have dried-down; burning can also be used to reduce the thatch layer, which can increase the performance of soil-applied herbicides - Apply imazapic or sulfometuron before emergence or to small, actively growing plants; glyphosate to actively growing plants



[67]

Medusahhead

*Carduus nutans***Musk thistle**

Stem	2-6 ft. tall and sometimes wooly and branched; spiny wings caused by leaf bases that extend down the stem
Leaves	Dark green with a light-green midvein, 4-15 in. long, alternate and sometimes hairy; edges (margins) are deeply lobed and spiny
Flower	- Pink to purple (occasionally white), up to 3 in. wide, each located at the tip of a stem; head often nods or droops; stem below head usually spineless - Base of flower is covered with green, purple- or straw-colored, spine-tipped bracts; bracts are 0.1-0.3 in. wide, lance-shaped and sometimes hairy
Root	Deep, fleshy taproot
Other	- Often infests roadsides, pastures and waste areas; known to occur in all Nevada counties EXCEPT Douglas, Esmeralda, Mineral and Pershing - Biennial; reproduces by seed; also known as nodding thistle
Control	- Mowing, tilling or hand removal after bolting but prior to flowering is effective; remove the top 2 in. of crown by digging before seed production - Several biological controls are available - Apply 2,4-D, dicamba, chlorsulfuron, metsulfuron or picloram to actively growing rosettes; aminopyralid or clopyralid between rosette and late-bolt stages



[69]

Musk thistle

Lepidium latifolium

Perennial pepperweed

Stem	Up to 6 ft. tall, semi-woody, waxy and lacks hair (glabrous); many stems can arise from each crown often branched near top; branches arise from leaf axils
Leaves	Alternate, oval to lance-shaped, mostly 3-12 in. long, 1-3 in. wide, green to gray-green, lack hair and waxy; edges (margins) smooth to toothed and can also be curled; leaf bases DO NOT clasp stem; lower leaves larger than upper leaves
Flower	- Small and white with 4 petals; arranged in dense clusters at the tips of stems - Seed pods are round, flattened, less than 0.1 in. diameter, usually covered with hairs; each has 2 chambers, each with 1 seed
Root	Creeping root system
Other	- Grows best on moist sites; often found in floodplains, pastures, meadows, hay fields and along waterways; known to occur in all Nevada counties - Perennial; reproduces by roots and seed - Also known as tall whitetop
Control	- Mowing, digging, tillage, burning and grazing established stands are NOT effective - Apply metsulfuron or chlorsulfuron to actively growing plants through early-bloom; imazapic from full-bloom until plants become necrotic; 2,4-D and glyphosate at bud to flower can be effective if repeated for several years

[7]

Perennial pepperweed



*Conium maculatum***Poison-hemlock**

Stem	Up to 10 ft. tall, green with purple spots, stout, hollow except at nodes and highly branched with lengthwise ridges
Leaves	Triangular, 4-12 in. long, finely pinnate-divided (fern-like) and lack hair (glabrous); leaflets have toothed edges; foliage has a musty odor
Flower	Small and white; arranged in umbrella-like clusters at end of a stalk
Root	Thick, deep taproot
Other	- Grows best in moist sites; often infests crop fields, waterways, roadsides and waste areas; known to occur in all Nevada counties EXCEPT Clark, Lander, Mineral, Nye and Pershing - Biennial; reproduces by seed - Highly toxic to animals and humans when consumed
Control	- Repeated mowing or tillage prior to seed production is effective; hand-removal by cutting the taproot below the crown can also eliminate plants (avoid contact with skin) - An insect biological control agent is available - Apply 2,4-D, MCPA, glyphosate, chlorsulfuron or metsulfuron to young actively growing plants

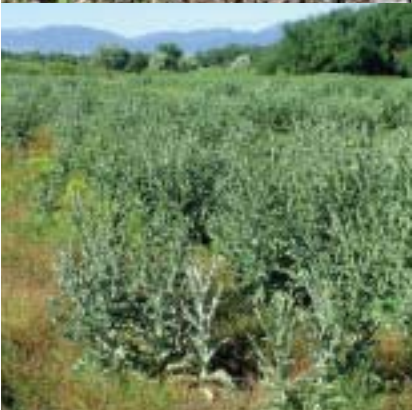
[75]

Poison-hemlock



*Onopordum acanthium***Scotch thistle**

Stem	Up to 12 ft. tall and branched, with spiny wings along smooth stem; covered with wooly, gray hairs
Leaves	Alternate; oblong, 4-20 in. long, covered with wooly, gray hairs giving plant a gray-green appearance; edges (margins) are lobed or toothed with stiff spines
Flower	White to purple flowers, each located at the tip of a branch; base of flower is round (resembles a squashed globe), 1-2 in. wide and covered with green, purple or yellow bracts (less than 0.2 in. long), each tipped with a spine; often covered with wooly, gray hairs
Root	Fleshy taproot
Other	- Often infests pastures, rangeland, roadsides and waste areas; known to occur in all Nevada counties - Biennial; reproduces by seed - Forms dense stands that are difficult for humans and animals to penetrate
Control	- Hand-removal, digging or mowing prior to flowering can be effective - Apply 2,4-D, dicamba, chlorsulfuron, metsulfuron or picloram to actively growing rosettes; 2,4-D + dicamba, aminopyralid, chlorsulfuron or clopyralid between rosette and late-bolt stage



[89]

Scotch thistle

Centaurea solstitialis

Yellow starthistle

Stem	Stiff, wiry, 1-6 ft. tall and usually branched; wings (less than 0.2 in. wide) extend down stem
Leaves	- Blue- to gray-green, 1.5-6 in. long and densely covered with fine hairs - Rosette leaves are oval to strap-like (linear) with deeply lobed edges (margins); stem leaves are alternate, strap-like to oblong with smooth to wavy edges
Flower	Yellow, located singly at branch tips or axils; base of flower is vase-shaped, 0.5-0.75 in. diameter and covered with cotton-like hairs and stout, straw-colored spines 0.5-1 in. long
Root	Deep taproot
Other	- Often infests rangeland, pastures, cultivated fields, waste areas and roadsides; known to occur in Carson City, Churchill, Douglas, Elko, Humboldt, Lander, Lyon, Mineral, Pershing, Storey and Washoe counties - Annual; reproduces by seed - Causes “chewing disease” in horses by damaging the area of the brain that controls fine motor movements, particularly of the mouth, resulting in starvation or dehydration
Control	- Grazing, mowing, burning, pulling, digging and cultivation can be effective if done prior to seed production - Several biological control agents are available - Apply aminopyralid, 2,4-D, clopyralid, dicamba or picloram to actively growing plants before flowering

[105]

Yellow starthistle



Nevada Noxious Weeds Quick Reference Guide

SPRING WEED CONTROL

Method effectiveness key		
		
Effective	Moderately effective	Ineffective or unsafe

Use a strategy of integrated weed management combining multiple control methods to reach a desired vegetative state.

- + Continuous monitoring and early detection are key.
- + Control methods may require multiple applications in one growing season or over several growing seasons.
- + Plant desired competitive species to reduce recurrence of weeds.
- + Follow label instructions when using pesticides.

	African Mustard	Black Henbane ¹	Canada Thistle	Crimson Fountaingrass	Diffuse Knapweed	Dyer's Woad	Hoary Cress	Houndstounge	Johnsongrass	Leafy Spurge ²	Medusahead	Musk Thistle	Perennial Pepperweed	Poison Hemlock ^{1,2}	Puncturevine	Purple Loosestrife	Purple Starthistle	Rush Skeletonweed	Russian Knapweed ¹	Scotch Thistle	Silverleaf Nightshade ¹	Spotted Knapweed	Yellow Starthistle ¹
																							
MOW 																							
HAND PULL 																							
HERBICIDE 																							
GRAZE 																							
TILL 																							
BURN 																							
BIOCONTROL 																							

Thank you for doing your part to keep Nevada's landscapes healthy.
Learn more about noxious weed control in Nevada: agri.nv.gov/noxiousweed

1. Some plants are toxic to certain animal species or during certain stages of growth.
 2. Use personal protective equipment when hand pulling this noxious weed.
 Photo credit: agri.nv.gov/Plant/Noxious_Weeds/Photo_Credits



Nevada Noxious Weeds Quick Reference Guide

FALL WEED CONTROL

Method effectiveness key		
		
Effective	Moderately effective	Ineffective or unsafe

Use a strategy of integrated weed management combining multiple control methods to reach a desired vegetative state.

- + Continuous monitoring and early detection are key.
- + Control methods may require multiple applications in one growing season or over several growing seasons.
- + Plant desired competitive species to reduce recurrence of weeds.
- + Follow label instructions when using pesticides.

	African Mustard	Black Henbane ¹	Canada Thistle	Crimson Fountaingrass	Diffuse Knapweed	Dyer's Woad	Hoary Cress	Houndstounge	Johnsongrass	Leafy Spurge ²	Medusahead	Musk Thistle	Perennial Pepperweed	Poison Hemlock ^{1,2}	Puncturevine	Purple Loosestrife	Purple Starthistle	Rush Skeletonweed	Russian Knapweed ¹	Scotch Thistle	Silverleaf Nightshade ¹	Spotted Knapweed	Yellow Starthistle ¹
																							
MOW																							
HAND PULL																							
HERBICIDE																							
GRAZE ¹																							
TILL																							
BURN																							
BIOCONTROL																							

Thank you for doing your part to keep Nevada's landscapes healthy.
Learn more about noxious weed control in Nevada: agri.nv.gov/noxiousweed

1. Some plants are toxic to certain animal species or during certain stages of growth.

2. Use personal protective equipment when hand pulling this noxious weed.

Photo credit: agri.nv.gov/Plant/Noxious_Weeds/Photo_Credits