

**SAN MIGUEL
COUNTY
NOXIOUS WEED
MANAGEMENT
PLAN**

Adopted
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Prepared by San Miguel County Weed Manager and
and the San Miguel County Weed Advisory Board

**San Miguel County
WEED MANAGEMENT PLAN**

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SECTION I

INTRODUCTION

1.01 **Mission Statement:**

Non-native invasive plants (weeds) pose a serious threat to the environment of San Miguel County. The mission of the San Miguel County Weed Program is to halt the degradation of our environment by implementing an Integrated Weed Management Plan (IPM) with the goal of preventing the introduction of new invaders, early recognition of those that do arrive and stopping the spread of common noxious weeds already present within the county.

We will seek to break down borders between jurisdictions by providing information and services to residents of the county as well as to the many other major landholders including Federal, State and local government entities.

For reasons of preserving functioning native ecosystems, protecting agricultural economies, and fostering recreational and scenic values in Colorado and the San Miguel Basin specifically, the management of weed species is essential.

1.02 **Overview of the Problem:**

All living things modify their surroundings to a certain extent to accommodate their presence. In a natural system these modifications are in a dynamic flux, tending towards interdependent climax vegetation for a particular habitat. Such an ongoing, self-sustaining relationship is referred to as an ecosystem. Although many ecosystems function in a rather delicate balance, most are amazingly resilient in their ability to withstand and accommodate changes imposed on them. In spite of natural disturbances and varying conditions, ecosystems seem to function with a definite direction and an ultimate goal. The direction is referred to as succession, and the goal as climax type. However, both are as variable as the geophysical and meteorological factors influencing them.

With the recent and rapid changes brought about by modern industrial technology, humankind has quickly and drastically modified the environment in such a way that many ecosystems have been unable to recover from the disturbances imposed and have lost their capacity for self-sustaining interdependence. Along with humans' accelerated ability to modify our surroundings, comes the increased need to become responsible for and consideration of the ecosystems being impacted.

The development of world trade in agriculture and easy, inexpensive world travel has contributed to the transfer of many plants and animals from their native habitats into new environments. In the new environment many lack controls present in their native habitats. Without these controls some plants have become extremely invasive threatening native plant and animal populations as well as desirable and beneficial land use and agriculture within the San Miguel Basin.

1.03 Purpose of the Plan:

The purpose of the Plan is to provide guidelines for managing designated noxious weeds that represent a threat to the continued economic, environmental and agricultural value of lands in San Miguel County. This plan provides for the implementation of the Colorado Noxious Weed Act by detailing management options for designated noxious weeds. Options include education, preventive measures, good stewardship, and proven control techniques. The intent is to incorporate those options that are the least environmentally damaging and are practical, timely, and economically feasible. Further, it is the responsibility of all landowners to use integrated methods to manage noxious weeds, and the responsibility of local governing bodies to assure that these plants are in fact managed on public and private lands.

The goal of this plan is to provide a framework of information to landowners and agencies within San Miguel County to assist their efforts in making wise weed control and prevention decisions.

1.04 Enactment Authority:

The Colorado Weed Management Act (C.R.S. 35-5.5-101, et. seq.) was signed into state law in 1990 and amended in 1996. Now known as the Colorado Noxious Weed Act, it states that noxious weeds pose a threat to the natural resources of Colorado. The Act also directs that the Board of County Commissioners of each county shall adopt a Noxious Weed Management Plan for all unincorporated land within the county. Municipalities shall adopt a weed management plan for all lands within their boundaries. The county and municipalities may cooperate, through intergovernmental agreements. The Act directs the Board of County Commissioners to appoint a local Weed Advisory Board, whose power and duties are as follows:

1. To develop a noxious weed list.
2. To develop a Weed Management Plan for managing designated noxious weeds.
3. To recommend to the Board of County Commissioners that identified landowners be required to submit an integrated weed management plan explaining how they will manage designated noxious weeds on their properties.

1.05 The Weed Advisory Board:

The Board of County Commissioners shall appoint a County Weed Advisory Board. The Board shall be made up of landowners and managers who are residents of the unincorporated portions of San Miguel County. At least a majority of the board shall be landowners, or representatives of landowners, of over forty acres. An effort shall be made to include private landowners from various locations throughout the county seeking equal representation from all communities. Agency (federal and state and local) representatives may be either voting members or non-voting members depending on the view of each agency.

The advisory board shall annually elect a chairman and secretary. A majority of the members of the board shall constitute a quorum for the conduct of business.

Board terms shall be 4 years with no member serving more than 3 consecutive terms.

1.06 San Miguel County Noxious Weed List:

The State of Colorado has three noxious weed lists designated by rule of the Colorado Department of Agriculture.

The State has designated 85 plants as State Noxious Weeds. These weeds comprise the “A” List. Ten of the eighty-five plants have been prioritized by the State as being the most widespread and causing the greatest economic or environmental impact. These 85 plants are the “B” list. The third or “C” list contains fifteen plants that are not widespread in Colorado; however local advisory boards are encouraged to contain and eradicate these species before they significantly impact the economic and environmental values of the State. A current version of this list is available through the San Miguel County Weed Program or the State of Colorado. The attached list was current at the time of the creation of this plan . (The current state weed list is attached as appendix A)

An extensive survey of weed managers throughout Colorado determined the comprehensive “A” list. This list, created by administrative rule, allows each local governing board to specify which plants cause serious local impacts. The local governing board may create a designated noxious weed list, containing all or portions of the State’s list depending upon the local situation and priorities. Most jurisdictions would not be able to dedicate the resources to manage all of the plants on the comprehensive list, nor are all jurisdictions threatened by all of the weeds on the list, so many local governing boards adopt a list of plants most threatening to their area.

Based on the State Weed List, and the existence or known potential for various weeds to become established within San Miguel County, the San Miguel County Weed Advisory Board has specified certain plants as noxious weeds in our area. These are alien plants that present a threat to the well being of land within the county. These noxious weeds are aggressive, fast spreading, and capable of displacing native plant and desirable species that provide habitat for wildlife and food for people and livestock. No native plants will be placed on this list.

The San Miguel County Designated Noxious Weed List (ranked as either not known to be present, extremely uncommon, common or very common) includes the following weeds:

| Plant | Frequency of Occurrence in SM County | Control Recommendation |
|---|---|---|
| 1. Leafy Spurge (<i>Euphorbia esula</i>) | Extremely Uncommon | Mandatory |
| 2. Spotted knapweed (<i>Centaurea maculosa</i>) | Uncommon | Mandatory |
| 3. Russian knapweed (<i>Acroptilon repens</i>) | Common | Recommended |
| 4. Diffuse knapweed (<i>Centaurea diffusa</i>) | Extremely Uncommon | Mandatory |
| 5. Hoary cress (<i>Cardaria draba</i>) | Common | Recommended |
| 6. Common Burdock (<i>Actium minus</i>) | Common | Recommended |
| 7. Jointed Goatgrass (<i>Aegilops cylindrica</i>) | Common | Control where Possible or where threatening other land uses |
| 8. Canada Thistle (<i>Circium arvense</i>) | Common | Recommended |

| | | |
|--|----------------------------------|--|
| 9. Musk Thistle (<i>Carduus nutans</i>) | Common | Recommended |
| 10. Bull Thistle (<i>Cirsium vulgare</i>) | Common | Recommended |
| 11. Plumeless Thistle (<i>Carduus acanthoides</i>) | Uncommon | Recommended |
| 12. Scotch Thistle (<i>Onopordum acanthium</i>) | Uncommon | Recommended |
| 13. Field Bindweed (<i>Convolvulus arvensis</i>) | Very Common | Control where Possible or where threatening other land use |
| 14. Houndstongue (<i>Cynoglossum officinale</i>) | Common- Mountainous areas | Highly Recommended |
| 15. Oxeye Daisy (<i>Chrysanthemum leucanthemum</i>) | Common- Telluride | Highly Recommended |
| 16. Yellow Toadflax (<i>Linaria vulgaris</i>) | Common-Telluride area only | Highly Recommended |
| 17. Yellow Starthistle (<i>Centaurea solstitialis</i>) | Not known to be present | Mandatory |
| 18. Tamarisk (<i>Tamarix ramoissima</i>) | Common (lower elevations) | Highly Recommended |
| 19. Russian Olive (<i>Elaeagnus angustifolia</i>) | Common (lower elevations) | Highly Recommended |
| 20. Perennial Pepperweed (<i>Lepidium latifolium</i>) | Uncommon | Recommended |
| 21. Purple Loosestrife (<i>Lythrum salicaria</i>) | Not known within County | Mandatory |
| 22. Dalmation Toadflax (<i>Linaria genistifolia</i>) | Extremely Uncommon | Mandatory |
| 23. Scentless Chamomile (<i>Matricaria perforate</i>) | Not known outside Telluride area | Mandatory |
| 24. Black Henbane (<i>Hyoscyamus niger</i>) | Not known outside Telluride area | Mandatory |

San Miguel County is an extremely varied environment ranging from semi-arid high desert to alpine peaks well above tree line. Precipitation within the area varies from less than 10 inches a year to more than 30 with elevations ranging from under 5,000 feet to nearly 14,000. The weeds listed for control may exist within only a few of the many micro-climatic zones within the County. Plants may be listed that are not known to be present within the county but have been recognized as potential invaders of the area with a goal of removing them immediately if found and making people aware of their potential threat.

Area wide only a few plants are designated for Mandatory Control:

| | | |
|--------------------|--------------------|---------------------|
| Leafy Spurge | Dalmation Toadflax | Scentless Chamomile |
| Diffuse Knapweed | Spotted Knapweed | Black Henbane |
| Purple Loosestrife | Yellow Starthistle | |

These invaders are designated for complete eradication because they are not currently present or common within the county or, as in the case of purple loosestrife and yellow starthistle, present in a very limited known area in an adjacent county. These plants have the potential to be highly detrimental either environmentally or economically. All are known to be aggressive invaders capable of spreading rapidly and have done so in other parts of Colorado or in other states. The cost to control them now would be a small fraction of the cost to control them at a later date. We must learn from the experiences of others.

Others are recommended for control throughout the area. These plants will not trigger mandatory control measures. However, good land management and being a good neighbor should encourage their control. Many of these plants are already so widespread that mandatory control would be a hardship to many landowners and their complete eradication from the environment is not a possibility. This is not meant as an excuse to not control them on any property. The County will endeavor to target these plants for control on county property.

| | | |
|------------------------|-------------------|----------------------|
| Russian Knapweed | Musk Thistle | Yellow Toadflax |
| Hoary Cress (whitetop) | Bull Thistle | Oxeye Daisy |
| Common Burdock | Plumeless Thistle | Jointed Goatgrass |
| Canada Thistle | Houndstongue | Field Bindweed |
| Russian Olive | Scotch Thistle | Perennial Pepperweed |
| Tamarisk | | |

SECTION II WEED IDENTIFICATION

The San Miguel Basin's 24 NOXIOUS WEEDS

Noxious weeds threaten many of the reasons we live, work, and recreate in San Miguel County. The San Miguel County Weed Advisory Board encourages you to become more knowledgeable about noxious weeds. Our natural resource and agricultural heritage depend on your involvement.

2.01 Description of Designated Noxious Weeds: (in alphabetical Order by common name)

*****Black Henbane (*Hyoscyamus niger*)** First found near Telluride in 2001
 Black henbane can be either biennial or annual and is a member of the Nightshade family. A handsome plant it was originally cultivated as an ornamental and has long been used as a medicinal herb. It contains hyoscyamine and other alkaloids and is considered to be toxic though animals seldom will eat it- human poisonings have occurred. It was first discovered in San Miguel County in 2001 near Telluride.

Mandatory for Control

Bull Thistle (*Cirsium vulgare*) Present throughout the county
 Bull thistle is a tap-rooted biennial member of the aster family. A rosette is formed in the first year with flowering in the second year. Bull thistle, a native of Eurasia, produces numerous dark purple flowers atop hourglass shaped, spiny bracts which produce numerous highly mobile seeds. Leaves are prickly above and cottony below. Although not as common as musk thistle, bull thistle is widely present in the area. Control measures for all of the biennial thistles (bull, scotch, plumeless) are the same as for musk thistle (see musk thistle) except for the insect controls- these are plant specific.

Canada Thistle (*Cirsium arvense*) Common throughout the San Miguel Basin
 Canada thistle is a member of the Aster family and was introduced from Europe. It is a creeping perennial, which reproduces by seeds and fleshy, horizontal roots. The erect stem is hollow, smooth and

slightly hairy, 1 to 5 feet tall, simple, and branched at the top. The flower color is lavender, white, pink, or purple. It is one of the most widespread and economically damaging noxious weeds in Colorado. Infestations are found in cultivated fields, riparian areas, pastures, rangeland, forests, lawns and gardens, roadsides, and in waste areas. Because of its seeding habits, vigorous growth, and extensive underground root system, control and eradication are difficult.

Common Burdock (*Arctium minus*)

Common from Norwood to Telluride

Common burdock is a member of the Aster family. It is an introduced biennial, which reproduces by seed. In the first year of growth the plant forms a rosette. The second year it grows erect, produces flowers and then numerous seeds. Burdock grows to 6 feet tall, has enormous leaves and a prickly bur. The flowers are purple and white in numerous heads. Burdock grows along roadsides, ditch banks and in neglected areas. This plant is a very serious threat to sheep as the burs can significantly damage the quality of their wool. Burdock will cause eye infections in cattle and is a nuisance in pets' hair and an irritant to wildlife.

***Dalmatian Toadflax (*Linaria genistifolia*)

First found near Telluride in 2000

Dalmatian toadflax is a member of the Figwort family. It was introduced as an ornamental from Europe. It is a creeping perennial with stems from 2 to 4 feet tall. The flowers are snapdragon-shaped, bright yellow, with orange centers; the leaves are waxy and heart-shaped. Dalmatian toadflax is especially well adapted to arid sites and can spread rapidly once established. Because of its deep, extensive root system, waxy leaves and heavy seed production, this plant is difficult to manage. It is a serious problem in many surrounding counties and has been found both at Telluride (in ornamental plantings) and at Egnar (roadside). **Mandatory for Control**

***Diffuse Knapweed (*Centaurea diffusa*)

First found at Egnar in 2001

Diffuse knapweed is a member of the Aster family. Diffuse knapweed was introduced from Europe and is a biennial or short-lived perennial forb, reproducing only by seed. The plant usually produces a single main multi-branched stem that is 1 to 2 feet tall. The flower is generally white with bracts that are sharp tipped. Diffuse knapweed is found in many of our neighboring counties and has been found at three locations at both ends of San Miguel County to date (8-02) **Mandatory For Control**

Field Bindweed (*Convolvulus arvensis*)

Extremely common throughout the Basin

Field Bindweed is a perennial with an extensive root system and seeds that may remain viable for up to 50 years. It was introduced from Europe and has become wide spread in the US. It is particularly problematic in cultivated fields and waste places. It is present throughout the county, however, it is readily eaten by livestock and is digestible and desirable to most grazing animals. Field bindweed is a more serious threat in the wheat and dry bean fields of the Egnar area where it robs young plants of much needed moisture and nutrients.

Hoary Cress (whitetop) (*Cardaria draba*)

Most Common on Wright's Mesa

Hoary cress, also known as whitetop, is a member of the mustard family, and was probably introduced from Europe in alfalfa seed. It is a creeping perennial, which reproduces by seed and creeping roots. The extensive root system spreads horizontally and vertically with frequent shoots arising from the rootstock. It grows erect from 5 to 18 inches high and has a gray-green colored leaf. The flowers are white and numerous in compact flat-topped clusters which give the plant its name. Hoary cress is one of the earliest perennial weeds to emerge in the spring, producing flowers in May and June at lower elevations and mid-

summer in the mountains. It grows in waste places, cultivated fields, roadsides, rangelands and pastures, and is capable of vigorous growth. Whitetop is most common in the Norwood area but present on many of the mesas and in has recently been found in the Telluride area.

Houndstongue (*Cynoglossum officinale*)

Becoming Common at higher locations

Houndstongue is a member of the Borage family. It is a biennial that was introduced from Europe. It reproduces by seed and appears as a leafy rosette in its first year. The plant grows 1 ½ to 3 feet high with reddish-purple flowers. Houndstongue is commonly known as the "Velcro weed" because of its small nutlets that are rapidly spread by people, domestic animals, wildlife and vehicles. ***Houndstongue grows on ranges, pastures, trails and roadsides and is toxic to most grazing animals as it contains alkaloids that may cause liver cells to stop reproducing.*** It is becoming common on the Uncompahgre Plateau and on the Norwood/Dolores Road and has been found at other higher locations within the Basin. This is an extremely undesirable plant.

Jointed Goatgrass (*Aegilops cylindrica*)

Common

Jointed goatgrass is a member of the Grass family, Barley tribe. It is a winter annual grass introduced from Turkey in the late 1800's and reproduces by seed. It grows 15 to 30 inches tall in erect stems that branch at the base to give the plant a tufted appearance. Seeds of jointed goatgrass are attached to their rachis segment and shed in June and July, during and prior to wheat harvest. The seeds are very similar in size and shape to wheat seed and therefore are difficult to screen out causing huge losses to producers of wheat destined to be used as seed. Jointed goatgrass is found at many locations throughout the area but is most problematic around Egnar where it causes problems in the winter wheat crop.

*******Leafy Spurge (*Euphorbia esula*)

Extremely Uncommon

Leafy spurge, a member of the Spurge family, was introduced from Europe. It is a creeping perennial that reproduces by seed and extensive creeping roots. The roots can extend as deep as 30 feet from a plant that grows 1 to 3 feet tall, with pale green shoots and small yellow-green flowers. ***The plant, including the root, has milky latex that is damaging to eyes and sensitive skin.*** Leafy spurge is an extremely difficult plant to control because of its extensive sprouting root. It is adapted to a wide variety of Colorado habitats and is very competitive with other plant species. If it becomes established in rangeland, pasture, and riparian sites, it may exclude all other vegetation due to its competitive nature. At this time only three sites of infestation are known within the San Miguel Basin- on the Plateau, Specie Mesa and at the Ski Ranches. All three sites are under 1 acre and have been treated since discovery.

Mandatory for Control

\$50 Reward

Musk Thistle (*Carduus nutans*)

Common throughout the area

Musk thistle is a member of the Aster family. Introduced from Eurasia, it is a winter annual or biennial that reproduces by seed. The first year's growth is a large, compact rosette from a large, fleshy, corky taproot. The second year stem is erect, spiny, 2 to 7 feet tall and branched at the top. The waxy leaves are dark green with a light green midrib and mostly white margins; flowers are usually deep purple but can be lighter. Musk thistle is also known as "nodding thistle" and is commonly found in pastures, roadsides, and waste places. It prefers moist bottomland soil, but also can be found on drier uplands and at elevations at least to 10,000 in the San Juan's. Insects released in the 70's have significantly reduced seed production on most musk thistle in the state.

Oxeye Daisy (*Chrysanthemum leucanthemum*)

Common in Telluride Area

Oxeye daisy, a member of the Aster family, is a native of Eurasia. It is an erect perennial plant with white ray and yellow disk flowers, bloom period is June through August. Oxeye daisy was, until recently, commonly sold in wildflower seed mixes or transplanted as an ornamental despite its tendency to crowd out more desirable vegetation. It's difficult to tell from more desirable daisies such as Shasta daisy and is common near Telluride and is now rapidly moving down the San Miguel River. The first large infestation in Norwood was discovered and treated in 2001

Plumeless Thistle (*Carduus acanthoides*)

Present at higher elevations

Plumeless thistle is a member of the Aster family. Introduced from Eurasia, it is a winter annual or biennial that reproduces by seed. This plant can be distinguished from musk thistle by its smaller flowers from ½ to 1 inch in diameter. The leaves of plumeless thistle lack the prominent white margin present on musk thistle leaves. It may grow to a height of 5 feet or more. Flowers are reddish-purple and are either solitary or clustered. Taproots are large and fleshy. Plumeless thistle is an extremely prolific seed producer. It is found in pastures, river valleys and along roadsides. It is relatively uncommon but is found at higher elevations.

***Purple Loosestrife (*Lythrum salicaria*)

Not present in the county

Purple loosestrife is a member of the Loosestrife family. It is a perennial introduced from Europe. The erect, square stem can reach 1 ½ to 8 feet tall with magenta-colored flowers. Purple loosestrife is a highly aggressive invader of wetlands. If left unchecked, a wetland will eventually become a monoculture of loosestrife, posing a severe threat to waterfowl habitat and impeding water flow in irrigation ditches. It is uncommon on the Western Slope of Colorado and is currently found only in West Montrose and Mesa Counties. The Nucla infestation has likely been present for at least 20 years and now covers over 40 acres.

Mandatory for Control

Perennial Pepperweed (*Lepidium latifolium*)

Uncommon

Perennial pepperweed is a perennial member of the mustard family and is 1 to 3 feet tall with white flowers in dense clusters. A native of southern Europe it is now present at many locations in Colorado. It blooms somewhat later than the shorter, and much more common, hoary cress or whitetop. It is not common in San Miguel County but is present in small numbers in the dryer parts of the county.

Russian Knapweed (*Acroptilon repens*)

Common at lower elevations

Russian knapweed is a member of the Aster family introduced from Europe. It is a creeping perennial that reproduces by seed and roots. The ridged stems are stiff and 1 to 3 feet high, with thistle-like flowers that are lavender to white. It is very difficult to control or eradicate once it becomes established, as it appears to exude an unknown substance that acts as an herbicide to other plants. It grows in cultivated fields, along ditch banks, fencerows, roadsides and in waste places. **Russian knapweed is toxic to horses.** It has long been present at lower elevations but is now spreading rapidly at higher elevations.

Russian Olive (*Elaeagnus angustifolia*)

Common at lower elevations

Russian Olive is a member of the Oleaster family. A hardy, fast-growing tree from Europe, Russian olive has been promoted for windrow and ornamental plantings. This tree may reach heights from 10 to 25 feet. The trunks and branches are armed with 1 to 2 inch woody thorns. The leaves are covered with small scales that give the foliage a distinctive silvery appearance. The fruit is berry-like, and is silvery when first formed but turns brown at maturity. It has become well established in the irrigation system near Nucla and is now invading the Riparian areas of the San Miguel and Dolores Rivers. It is uncommon elsewhere but present due to ornamental plantings. Ornamental plantings are strongly discouraged and removal of such plantings is recommended.

Salt Cedar (*Tamarix ramosissima*, *Tamarix parviflora*) Common in Dry Ck. Basin and Egnar

Salt cedar is a member of the Tamarisk family. It is a deciduous shrub or small tree, 5 to 25 feet tall. Tamarisk may live 50 to 100 years. It has a wide range of tolerance to saline and alkaline soil and water. It copes with high concentrations of dissolved solids by absorbing them through its roots and excreting salts through glands in its stem and leaves. The excreted salts eventually form a saline crust on the soil that discourages most native riparian vegetation from competing with it. A single plant of saltcedar will use about 200 gallons of water per day while it is actively growing. The bark on the saplings and stems is reddish-brown. Leaves are small and scale-like on highly branched slender stems. Ramosissima is 5-petaled and pink to white. Parviflora is 4-petaled. Introduced from Eurasia, tamarisk has invaded most of the western rivers. The San Miguel River above the Norwood Bridge is currently thought to be tamarisk free while the area from that point down there are scattered tamarisk. The Nature Conservancy and the weed program are working together at this time towards total eradication of tamarisk from the Basin.

*****Scentless Chamomile and Mayweed Chamomile(*Metricaria perforata* and *Arthemis cotula*)**

Scentless chamomile has been found in the Telluride area (including Mtn. Village). The Chamomiles are members of the aster family and originated in Europe. Planted as ornamentals by good intentioned but misinformed landowners they have now escaped cultivation. Mayweed has a strong ill-smelling odor while Scentless looks very similar but lacks the odor. Plants are from 6” to 2’ tall and have fernlike leaves similar to carrot. Flowers are about ¾-1” across and usually, but not always, have 12 white ray flowers. Both plants are found in waste places, roadsides, cultivated fields and on overgrazed rangelands. Chamomile is extremely common in California and the Pacific Northwest but is increasing rapidly at higher elevations in Colorado

Mandatory for Control

*****Spotted Knapweed (*Centaurea maculosa*)**

Uncommon but present

Spotted knapweed is a member of the Aster family. Native to Central Europe, it is a simple perennial that reproduces from seed and forms a new shoot each year from a taproot. The plant can have one or more shoots up to 4 feet tall. Flower color is usually lavender to bright purple. Spotted knapweed occupies dry meadows, pastures, stony hills, roadsides, and the sandy or gravel flood plains of streams and rivers, where soils are light textured, well-drained, and receive summer precipitation. Spotted knapweed tolerates dry conditions but will survive in higher moisture areas as well. Infestations are known to exist near Egnar, with small stands known at several locations along highways in the area with a major infestation on the Uncompahgre Plateau near Hwy. 90 (USFS lands in Montrose County).

Mandatory For Control

*****Yellow Starthistle (*Centaurea solstitialis*)**

Not known to be present

Yellow starthistle is a member of the Aster family. It is an annual, 2 to 3 feet tall that was introduced from Europe. Flowers are yellow, located singly on ends of branches, and armed with sharp straw-colored thorns up to ¾ inch long. **Like Russian knapweed yellow starthistle is toxic to horses.** In 1999 the first infestations on the west slope were found in E. Montrose and Mesa Counties. This is considered to be one of the greatest potential threats to agriculture in San Miguel County.

Control

Mandatory for

\$50 Reward

Yellow Toadflax (*Linaria vulgaris*)

Common near Telluride and Mtn. Village

Yellow toadflax is a member of the Figwort family and is sometimes called common toadflax or “butter and eggs.” It was introduced from Europe as an ornamental and has now become a serious problem to rangelands and mountain meadows. It was common in wildflower seed until recently. It is a perennial reproducing from seed, as well as from underground rootstalk. The flowers are bright yellow with deep

orange centers that resemble the snapdragon. Yellow toadflax does well in all types of soils. Its displacement of desirable grasses not only reduces ecological diversity, but also reduces rangeland value and can lead to erosion problems. Because of its early vigorous growth, extensive underground root system, and effective seed dispersal methods, yellow toadflax is difficult to control. Yellow toadflax is a serious problem in the Telluride region and along the upper San Miguel River but not known elsewhere.

2.02 How To Distinguish Varieties Of Thistle, Knapweed, Chamomile or Toadflax:

THISTLES (Canada, Musk, Bull, Plumeless and Scotch)

Four types of thistles are on the San Miguel Basin Noxious Weed List. *Canada thistle* is a perennial with an extensive root system- it reproduces by both seed and root. It is shorter and less robust than the other thistles and is usually in patches. It is the most difficult of the thistles to eliminate. *Plumeless, Scotch, bull and musk* thistles are biennials; they have a taproot and reproduce by seed only. The bracts under the flower of plumeless appear as sharp spines beneath small flowers. The flowers of musk thistle are about three times larger than those of Canada or plumeless. Musk thistle seedlings have a very prominent white midrib. Scotch thistle leaves are larger than those of the other thistles. They grow up to 2 feet in length and 1 foot wide. The leaves are covered with dense hairs, which give them a gray appearance. All of the biennial thistles may grow to heights of greater than six feet. Canada thistle may grow from 1 to 4 feet tall.

Colorado has several species of thistle which are native and do not cause the problems of the noxious species. Native thistle may be purple, white or yellow and may resemble the non-natives until you are familiar enough to see the small variations. It is important to preserve native thistle as they provide food for many bird, butterflies and insects. Some are threatened or rare in the area.

KNAPWEEDS (Russian, Diffuse and Spotted)

Russian knapweed is a perennial with an extensive underground root system. Its primary reproductive method is through this spreading root system. Spotted knapweed is a biennial, or occasionally a short-lived perennial with a short taproot and massive amounts of viable seed. Generally the flowers of Russian knapweed are pinkish-purple, while spotted knapweed flowers are brighter pink and diffuse flowers are white, however there are exceptions. The best way to distinguish between the knapweeds is by the bracts. The bracts of Russian knapweed are white and papery-thin. Diffuse knapweed has sharp-toothed, white bracts. Spotted knapweed bracts are more like a fringe (not as spiny) with a black or darkly colored spot on each bract. The root crown of Russian knapweed is black, quite unlike the other knapweeds. Meadow knapweed, black knapweed and others also represent a threat but are not known to be present in this area.

TOADFLAX (Yellow and Dalmation)

The best way to distinguish the different toadflaxes is to look at the shape of the leaves. Yellow toadflax has narrow very green leaves that are pointed at both ends; the leaves of Dalmatian toadflax are heart-shaped, clasp the stem, and are waxy with a blue green color. Both have yellow flowers. The Dalmatian plant is more ornamental looking than yellow toadflax both tend to be in patches rather than solitary.

CHAMOMILE (Scentless and Mayweed) and DAISIES

There is little difference in appearance between the two varieties of chamomile. Mayweed carries a strong ill-smelling scent while scentless does not. Both are equally undesirable and invasive but only scentless has been found locally. Other non-native chamomiles have escaped cultivation and can be problematic but are not currently known in this area. Leaves are small, fern like and bright green.

Oxeye daisy is a rhizomatous perennial. It is larger than the native daisies but smaller and less robust than the more desirable Shasta daisy and blooms much earlier.

2.03 The Threat Of Escaped Ornamentals:

Most plants used for landscaping purposes cannot proliferate outside the cultivated environment of the home garden. They add beauty and color to our landscapes even though they are not necessarily native to the area. But certain exotic plants and seeds were imported to the United States for their aggressive growth habits, xeriscape potential, or re-seeding capabilities. These plants have proven elsewhere in the country and in the State of Colorado to be capable of escaping cultivation and expanding their populations at alarming rates.

Some of these have been listed within San Miguel County and others are simply recommended against planting at this time- they may be listed at a later time if they begin to cause problems within our area. Although not enforced by law, it is strongly encouraged to contain and eradicate these species before they specifically impact the economic and environmental values of the region. The following plants, listed by common name, should be avoided in any landscape or ornamental plantings in San Miguel County. Most are no longer available to purchase, either as plants or seeds, within the State of Colorado.

| Currently Listed Invasive Ornamentals | We <u>Strongly</u> Recommended against Planting These Ornamentals due to potential invasiveness | |
|--|--|--------------------------------|
| Purple Loosestrife | Mediterranean Sage | Common Tansy |
| Oxeye Daisy | African Rue | Cyprus or Myrtle Spurge |
| Russian Olive | Sulfur cinquefoil | Orange or Yellow Hawkweed |
| Scentless Chamomile | Dames Rocket | Blue Flax (non-native variety) |
| Yellow Toadflax | Bouncing Bet | St. John's Wort |
| Dalmatian Toadflax | Dyer's Woad | Chicory |

The very traits that make these plants desirable for a garden or landscape may also enable them to thrive outside cultivated areas and become fierce competitors with our native and desirable vegetation. Because they exist here without the presence of any natural predators, these plants have the ability to spread extensively and pose a severe threat to the delicate balance of our native ecosystems.

Since various invasive ornamental plants are attractive and establish themselves quickly, they are popular with landscapers and gardeners and may be purchased through certain nurseries and seed catalogs. It is imperative that we educate landowners, landscape architects, gardeners, and nursery growers about the need to eliminate such plants from their landscape plans. Otherwise these plants will inevitably escape from the cultivated garden and jeopardize the natural wildflower and plant communities that we cherish. Native wildflowers such as Colorado Blue Columbine, our state flower, cannot compete with invasive ornamental plants for nutrients, sunlight, and water. As a result, our biologically diverse mountain meadows, grasslands, wetlands, riparian areas and agricultural lands are in danger of being overrun by non-native invasive ornamental plants.

2.04 Integrated Weed Management – Treatment Methods:

Management techniques include cultural, mechanical, biological and chemical strategies. The optimum method or methods for weed management will vary depending on a number of site-specific variables. Factors to be considered should include soil type and stability, grade, associated vegetation, existing and proposed land use, proximity to water, availability of irrigation water, weed type and stage of growth, and severity of infestation. Previous and future land disturbance and land use plans are important to consider. The management method selected should be the least environmentally damaging, yet practical and reasonable in achieving the desired results. When considering weed management on a property begin by working on the areas that may transport weed seeds. These areas include ditches, streams, roadsides, driveways, trails, livestock concentrated areas, and equipment storage sites.

The following recommendations are intended to be a reference for weed management in San Miguel County. *The information is not intended to be a complete guide to weed management.* Before using any

chemical, you should thoroughly read the label. **Any use of a herbicide inconsistent with the label is neither legal nor recommended.**

Changes in herbicide registrations occur constantly. The herbicide label is the legal document on herbicide use. ***Read and follow all directions carefully.*** The use of a pesticide in a manner not consistent with the label can lead to injury of crops, humans, animals, and the environment.

Specific chemical recommendations are available from the CSU Extension Service, the San Miguel County Weed Program and/or licensed applicators and are not listed in the Plan.

CANADA THISTLE

Description: Perennial. Reproduces from vegetative buds in root system and from seed that can travel great distances in the wind.

Comments: Canada thistle is best managed through an integrated management system that emphasizes competitive, desirable plants.

Biological control: Three insects are currently available. It is best to release a *complex* of insects (different insects that will stress different parts of the plant.) *Ceutorhyncus litura* – a weevil that stresses the crown of the plant. *Urophora carduii* – stem and shoot gall fly. *Cassidia rubiginosa* – leaf beetle. Establishment of insects is often a difficult process. Biological Control can be effective- however- it is important to realize that this kind of control, when effective, can take many years to show results and is not a good option for new or small infestations. New insects are being researched and may become available over time. Sources for insects also vary- current info is available through the Weed Manager's office.

Chemical control: Many chemicals are available for the control of Canada thistle. It is important to use the right chemical for a specific weed and location and to take other environmental conditions into consideration. Proximity to water is very important in choosing the right herbicide. Contact the San Miguel County Weed Program or a licensed applicator for specific recommendations. Chemical controls can be highly effective and safe when used properly.

Cultural control: Maintain soil fertility and moisture at optimum levels to favor grass growth. Assure that adequate competition exists or plant competitive grasses.

Mechanical control: Research indicates that mowing of Canada thistle may be effective when done repeatedly at two-3 week intervals over a period which may be more than one year. Pulling and digging up Canada thistle is not extremely effective unless large amounts of root can be removed or the infestation is not yet well established.

COMMON BURDOCK

Description: Biennial. An extremely prolific seed producer.

Comments: Burs become entangled in the hair of livestock, wildlife, or pets allowing seed to be distributed to new areas. Reduces the value of wool considerably.

Biological control: None currently available.

Chemical control: Many effective herbicides are available. Contact the San Miguel County Weed Management Program or a licensed applicator for specific recommendations.

Cultural control: Minimize soil disturbances, encourage desirable plant growth.

Mechanical control: Top growth removal through mowing is effective as is pulling or digging out the plant at flowering or early seed formation. Never leave seeds on plants or on the ground. Hand removal of all seeds is the only viable treatment once seeds are set.

DALMATIAN TOADFLAX

- Description: Aggressive perennial, escaped ornamental.
- Comments: Found in ornamental plantings near Telluride and in Mtn. Village and on State Hwy 141 near Egnar and 62 near Placerville but still relatively uncommon in the county.
- Biological control: The defoliating moth, *Calophasia lunula*, has been released on Dalmatian and yellow toadflax. It may defoliate up to 20% of the leaves of the plant. Biological Control can be effective-,however, it is important to realize that this kind of control, when effective, can take many years to show results and is not a viable option for small infestations.
- Chemical control: Chemical controls are available for Dalmatian toadflax. Contact the San Miguel County Weed Manager or a licensed applicator for specific recommendations. Chemical control is highly effective.
- Cultural control: Re-seed disturbed areas adjacent to toadflax infestations with appropriate perennial grasses.
- Mechanical control: Repeated mowing 2-3 times per year will slow spread and reduce seed production. Best used in combination with Chemical control.
- Education: The key to Dalmatian toadflax management is to create awareness among homeowners, nurseries, landscapers, and landscape architects that Dalmatian toadflax is a noxious weed and therefore should not be specified in plantings, sold in nurseries or planted in home gardens or large-scale landscape projects. It is currently illegal to buy or sell in Colorado.

DIFFUSE KNAPWEED

- Description: Biennial, reproduces by seed.
- Comments: Found near Egnar in 2001 and at Miramonte Reservoir and Hwy 62 in 2002. Common on Front Range but also found in neighboring counties.
- Biological control: Two seed head flies, *Urophora affinis* and *U. quadrifasciata*, are available and may reduce seed production. A root-boring moth, *Agapeta zoegana*, causes considerable damage to roots. Biological Control can be effective- however- it is important to realize that this kind of control, when effective, can take many years to show results and is not a viable option for small infestations.
- Chemical control: Chemical controls are available and effective. Contact the San Miguel County Weed Manager or a licensed applicator for specific recommendations.
- Cultural control: Reseeding of disturbed sites with fast growing grasses helps prevent diffuse knapweed establishment.
- Mechanical control: Handpulling is very effective- pull before seeds drop from plant and monitor area in future.

HOARY CRESS (Whitetop)

- Description: A very competitive, deep-rooted perennial that reproduces by root segments and by seed.
- Comments: Common on Wright's Mesa but increasingly present on mesas and at higher elevations. Often found in the same areas as Russian knapweed.
- Biological control: None currently available.

Chemical control: Effective chemical control is available. Contact the San Miguel County Weed Manager or a licensed applicator for specific recommendations.

Cultural control: Mowing or cultivation effectiveness will be increased if other plants like perennial native grasses or alfalfa are seeded in the hoary cress stand as competitors. Maintain range and pasture in good condition. Promote healthy grass growth through proper irrigation and fertilization. Do not overgraze.

Mechanical control: Repeated removal of top growth is somewhat effective over time. Repeated treatments may reduce seed production and spread.

HOUNDSTONGUE

Description: Biennial. Prolific seed producer. Seed nutlets break apart at maturity and cling to clothing or animals. Toxic to wildlife and domestic animals due to alkaloids.

Comments: Heavy on some parts of The Plateau and found on the Norwood Dolores Rd. Found on Hasting's Mesa and at other locations in smaller infestations.

Biological control: None currently available.

Chemical control: Properly timed chemical controls are available and effective. Contact San Miguel County Weed Program or a licensed applicator for specific recommendations.

Cultural control: Re-seed disturbed sites with fast growing native grasses. Maintain range and pasture in good condition. Promote healthy grass growth through proper irrigation and fertilization. Do not overgraze.

Mechanical control: Houndstongue is a prolific seed producer, and the seeds are readily spread by their ability to stick to wildlife and domestic animals. Physical removal of the plant at flowering or in early seed formation, by pulling or digging, will break the cycle of the plant- mature plants should be bagged and burned to prevent seed dispersal.

LEAFY SPURGE

Description: A perennial up to three feet tall that reproduces by vigorous root stalks and seed.

Comments: **\$50 REWARD for this plant!** Leafy spurge has been identified at the Ski Ranches, at one site on the Uncompahgre Plateau and on Specie Mesa. An extremely difficult-to-control perennial weed that will require numerous re-treatments to achieve adequate control. All three known sites have been treated and are no longer threats for spread.

Biological control: Sheep or goats will graze leafy spurge but not cattle or wildlife. Several insects are available for use on leafy spurge from the Colorado Department of Agriculture Insectary in Palisade. Insects are only effective on large infestations- none of the local infestations qualifies for release due to their small size and early detection and treatment.

Chemical control: Chemical controls are available and effective with repeat applications.. Contact The San Miguel County Weed Manager or a licensed applicator for specific recommendations.

Cultural control: Any activity that encourages vigorous grass growth is very important. Overgrazing stresses native grasses and makes them less competitive to leafy spurge.

Mechanical control: Mowing leafy spurge at 14 to 21 day intervals may cause higher susceptibility to fall applied herbicides. Mowing alone is not a control method. Hand pulling is not an option.

MUSK THISTLE

- Description: Musk thistle is a biennial and the key to its successful management is to prevent seed formation.
- Comments: Scattered throughout the County- heaviest near Placerville and in Dry Creek Basin.
- Biological control: The musk thistle seed head weevil, *Rhinocyllus conicus*, is present in most musk thistle plants in the area. Larvae of this insect destroy developing seeds but are not 100 percent effective by themselves. The weevil normally impacts seed production by about 50 percent. Herbicides can be combined with weevils if the insects are allowed to complete their life cycles. Another weevil, *Trichosirocalus horridus*, attacks the crown area of musk thistle rosettes and weakens the plant before it bolts. This weevil has reduced stand density in areas where it has become well established. A leaf feeding beetle, *Cassida rubiginosa*, causes considerable damage by skeletonizing leaves. It is recommended to release more than one type of insect as each type may work on different parts of the plant.
- Chemical control: Contact the San Miguel County Weed Manager or a licensed applicator for specific recommendations.
- Cultural control: Musk thistle, like other biennial thistles, thrives on disturbance. The best management is to minimize disturbance. If it does occur be certain to revegetate with competitive perennial grasses.
- Mechanical control: The most effective type of mechanical control is to repeatedly cut or mow this plant prior to flowering. This can be unrealistic on large acreage or when the ground is very dry. Another option is to use a shovel to cut the root below the surface of the soil, taking care not to disturb the soil more than necessary. If this is done prior to flowering the plant can be left in place after it is cut. If it has already flowered the plant (or at least the flowers) should be removed and placed in a bag and disposed of. Mowing is not effective on this species unless repeated numerous times throughout the growing season since musk thistle will flower and produce seed even after one or two mowings.

OXEYE DAISY

- Description: A rhizomatous perennial, escaped ornamental.
- Comments: A rapidly spreading weed in San Miguel County- especially near Telluride but now found all along the San Miguel River.
- Biological control: None currently available.
- Chemical control: Contact the San Miguel County Weed Manager or a licensed applicator for specific recommendations.
- Cultural control: None available.
- Mechanical control: No information available.
- Education: The key to oxeye daisy management is to create an awareness among homeowners, nurseries, landscapers, and landscape architects that oxeye is a noxious weed and therefore should not be specified in plantings, sold in nurseries or planted in home gardens or large-scale landscape projects.

PLUMELESS, SCOTCH and BULL THISTLE

| | |
|---------------------|--|
| Description: | Biennial, prolific seed producers. |
| Comments: | Present throughout San Miguel County. Not currently present in highly concentrated infestations. |
| Biological control: | The same seed head weevil, <i>Rhinocyllus conicus</i> , that attacks musk thistle, also feeds on plumeless thistle seeds. Another musk thistle weevil, <i>Trichosirocalus horridus</i> , appears to be ineffective on the other biennial thistles. |
| Chemical control: | Contact the San Miguel County weed manager or a licensed applicator for specific recommendations. |
| Cultural control: | All of the biennial thistles thrive on disturbance. The best management is to minimize disturbance and revegetate with competitive perennial species as soon as possible. |
| Mechanical control: | Mowing is generally not effective on plumeless due to the plant's capacity for rapid re-growth. Hand cutting is not effective unless there are repeated follow-up treatments. Hand cutting should only be conducted if there is a commitment to follow-up efforts. Plumeless tends to branch out where it is cut and then it re-flowers. Pulling plumeless can be very effective, especially if done after a light rain. Hand pulling, with a good set of gloves, is preferable to shoveling. Shoveling disturbs the ground thus creating a potential seedbed for future infestations. |

PURPLE LOOSESTRIFE

| | |
|---------------------|---|
| Description: | An introduced perennial. This escaped ornamental is also a prolific seed producer, able to produce 1,000,000 seeds per plant. |
| Comments: | The US Fish and Wildlife Service and the Colorado Division of Wildlife are extremely alarmed about the proliferation of purple loosestrife in wetland and riparian habitats. Only two known infestations exist on the West Slope- a large infestation at Nucla and a smaller one in Mesa County. |
| Biological control: | Biological control may eventually bring these populations under control, but will not completely eliminate or prevent the spread of purple loosestrife. Insects have been released on the Nucla infestation beginning in 1995 and are now (as of 2000) beginning to over-winter, show considerable damage to the purple loosestrife and reproduce. Biological Control can be effective- however- it is important to realize that this kind of control, when effective, can take many years to show results and is not a good option for small infestations. |
| Chemical control: | Contact the San Miguel County Weed Manager or a licensed applicator for specific recommendations. |
| Cultural control: | Not available. |
| Mechanical control: | Mechanical methods include hand pulling, mowing, and flooding. Hand pulling is effective, but still difficult, when infestations are detected early. The root system must be completely removed, since the root sections can sprout and form new plants. For this reason hand pulling is only effective on small plants. Hand removal of seed-heads before seed release helps reduce the estimated 2,000,000 seeds per plant released into the environment. |

Education: The key to purple loosestrife management and other escaped ornamentals is to create an awareness among homeowners, nurseries, landscapers, and landscape architects that purple loosestrife is a noxious weed and therefore should not be specified in plantings, sold in nurseries or planted in home gardens or large-scale landscape projects.

RUSSIAN KNAPWEED

Description: A perennial with an extensive underground root system.

Comments: This weed is very common in the San Miguel Basin. Like other creeping perennials, the key to Russian knapweed control is to stress the weed and cause it to expend nutrient stores in its root system. An integrated management plan should be developed that places continual stress on the weed. Currently, the best management plan includes cultural control combined with mechanical and/or chemical control techniques. A single control strategy, such as mowing or a herbicide, usually is not sufficient. *The plant is toxic to horses, however they must consume it over a period of time before poisoning will occur. Once poisoning occurs horses are unable to chew and advance food to the back of their mouths, swallowing is impaired and horses can drink only if they immerse their head in water far enough to get water to the back of their mouths. Poisoning is irreversible and death by starvation or dehydration will occur.*

Biological control: None currently available.

Chemical control: Contact the San Miguel County Weed Manager or a licensed applicator for specific recommendations.

Cultural control: Russian knapweed tends to form monocultures by eliminating other plants. Therefore, sowing desirable plant species is necessary after the weed is controlled. Research indicates that the native grasses, streambank wheatgrass and thickspike wheatgrass will establish in an area after Russian knapweed is suppressed with herbicides. If the Russian knapweed stand is not too old and grasses are still present, stimulating grass growth by irrigation (where possible) should increase grass competition with knapweed and keep it under continual stress.

Mechanical controls: Repeated mowing combined with herbicide applications will gradually stress the plant.

RUSSIAN OLIVE

Description: A tree that may reach heights from 10 to 25 feet.

Comments: Originally planted as windbreaks and ornamentals Russian Olive now has become a serious invader in the Nucla area and into the San Miguel River.

Biological control: None available.

Chemical control: Contact the San Miguel County Weed Program or a licensed applicator for specific recommendations. Cut stump or basal bark treatments with recommended herbicides are highly effective.

Cultural control: Plant native trees or less aggressive introduced trees. In riparian areas establish native riparian vegetation.

Mechanical control: Small trees may be controlled mechanically by using an appropriate tool or shovel.

SALT CEDAR or TAMARISK

Description: Shrub or small tree.

Comments: Common in Dry Creek Basin, Egnar area and lower San Miguel River. It is believed to have been eliminated from the upper San Miguel in 1999 and 2000 control seasons.

Biological control: There are experimental projects being conducted in a few areas in the West involving the release of mealybugs and leafbeetles. These are not cleared for general release. The listing of the Southwestern Willow Flycatcher (a native species that nests in saltcedar) under the Endangered Species Act has challenged efforts to move forward with release of insects for biocontrol.

Chemical control: Contact the San Miguel County Weed Program or a licensed applicator for specific recommendations. Cut stump and basal bark treatments with recommended herbicides are highly effective.

Cultural control: Establish native riparian vegetation.

Mechanical control: Historical saltcedar management projects have included root plowing and raking, dozing, mowing, and prescribed burning. These methods provide only short-term benefits and are labor intensive.

SCOTCH THISTLE

Description: A biennial.

Comments: Not common within San Miguel County but found in the Telluride Area.

Biological control: None currently available.

Chemical control: Contact the San Miguel County Weed Program or a licensed applicator for specific recommendations.

Cultural control: Reseed disturbed sites with appropriate perennial grasses.

Mechanical control: Digging the plant at the rosette stage is effective. Flowers should be destroyed to prevent seed formation, even after the plant has been removed.

SPOTTED KNAPWEED

Description: A short-lived, non-creeping perennial that reproduces from copious seed and forms a new shoot each year from a taproot.

Comments: One of the most invasive, aggressive weeds to plague the western United States. Found on Hwy. 90 on USFS and known to have been present for at least 10 years. Recently beginning to show up at other locations including a patch at Bilk Creek under treatment since 1999.

Biological control: The seedhead flies, *Urophora affinis* and *Urophora quadrifasciata*, have been released. These insects cause plants to produce fewer viable seeds and abort terminal or lateral flowers. Root feeding insects may have more of a detrimental effect on knapweed populations.

than seed feeding insects. Larvae of the yellow winged knapweed moth feed in the roots of both knapweed species. *Metzneria paucipunctella*, *Agapeta zoegana*, *Cyphocleonus aclatos*, *Larinus minutus* Biological Control can be effective- however- it is important to realize that this kind of control, when effective, can take many years to show results and is not a good option for small infestations.

Chemical control: Contact the San Miguel County Weed Program or a licensed applicator for specific recommendations.

Cultural control: If desirable grass competition is evident in spotted knapweed stands, judicious herbicide application that does not injure grasses may release them to compete effectively with the weeds. Irrigation may help stimulate grass competition in these cases. Seeding suitable perennial grasses is necessary to prevent weed re-invasion.

Mechanical control: None available.

YELLOW STARHISTLE

Description: Annual, prolific seed producer.

Comments: **A \$50 reward is offered for reports of this plant!** In California alone, this plant has infested more than **20 million acres!**. In 2000 three sites were found in the Placerville area that were tentatively identified as yellow starthistle. This followed by one year a 100+ acre site found in E. Montrose Co. and several smaller sites found in Mesa County. **This may be our biggest future threat.**

Biological control: A seed-feeding beetle, *Bangasterus orientalis*, has been released in California and Idaho. Seed weevils and seed flies have also been released. The goal in the Basin is to locate any starthistle while infestations are small enough to easily control. Biological Control can be effective- however- it is important to realize that this kind of control, when effective, can take many years to show results and is not a viable option for small infestations.

Chemical control: Contact the San Miguel County Weed Program or a licensed applicator for specific recommendations.

Cultural control: Vigorous competitive grass is essential to maintain a plant community's resistance to starthistle invasion.

Mechanical control: Mowing or cutting starthistle is rarely effective. Hand-pulling individual plants can be effective in small infestations but must occur before seed is present and must continue for many years as seed continues to germinate

YELLOW TOADFLAX

Description: An escaped ornamental perennial reproducing by seed and rootstalk.

Comment: Yellow toadflax has become extremely common in the Telluride to Mtn. Village area and threatens the mountain passes and the San Miguel River and its tributaries.

Biological control: One insect species *Calophasia lunula* a defoliating moth has been released on yellow toadflax. It may defoliate up to 20 percent of the leaves. Biological

Control can be effective- however- it is important to realize that this kind of control, when effective, can take many years to show results and is not a good option for small infestations. Several releases have been made locally beginning in 1999.

- Chemical control: Contact the San Miguel County Weed Program or a licensed applicator for specific recommendations.
- Cultural control: Attempt to maintain competitive communities of desirable species. Re-seed any open ground with perennial grasses to prevent invasion by other weed species.
- Education: The key to management of yellow toadflax and other escaped ornamentals is to create an awareness among homeowners, nurseries, landscapers, and landscape architects that yellow toadflax is a noxious weed and therefore should not be specified in plantings, sold in nurseries or planted in home gardens or large-scale landscape projects.
- Mechanical control: Digging and pulling where feasible, can provide effective control of toadflax if conducted annually for 10 to 15 years.

SECTION III

JURISDICTIONAL OVERVIEW OF AREAS OF INFESTATION IN THE SAN MIGUEL BASIN

3.01 **Overview:**

The San Miguel County Weed Program works on an “*early detection, early treatment*” philosophy. Early detection is identifying and documenting recently introduced weed species into an area. Early treatment is the follow-up that could possibly eradicate new infestations before they become serious threats to land use. The containment of leafy spurge and spotted knapweed, so far, are great examples of this philosophy being successful.

3.02 **County Land:**

County property includes Roadways, gravel pits, Road and Bridge facilities, parks, fairgrounds and other lands owned and controlled by San Miguel.

Roads:

Roadsides shall be managed regarding the 24 weeds on the San Miguel County noxious weed list. In addition any new infestations identified during the season on roadsides will be addressed in a timely manner and new weeds recommended for addition to the weed list if found to be present and known to be problematic. The roadsides will be selectively spot treated for noxious weeds as needed.

Roadside treatments will occur at the appropriate time to best treat the infestation.

Gravel Pits:

Gravel pits have been identified as major sources of weed infestations throughout the state. County managed gravel pits will be inspected and treated as needed to prevent the spread of any contaminated gravel within the county.

Road and Bridge yards:

It is the goal of The San Miguel County Weed Program to develop and implement a comprehensive noxious weed management program on all County-owned property. With the constant movement of

vehicles through R and B yards it is important that these areas be given a high priority for control to prevent infestations from moving on to new sites.

3.03 State Lands:

Colorado Department of Transportation:

The San Miguel County Weed Program has an Intergovernmental Agreement with CDOT to treat noxious weeds on State Highways 141, 145, 62, 90 and 97. This agreement is on an annual basis and is for the treatment of designated noxious weeds.

Colorado Division of Wildlife:

The Colorado Division of Wildlife has a weed management program in place for the Dry Creek Basin State Wildlife Area and Miramonte Lake Wild Life area. The San Miguel County Weed Program will continue to work with the DOW to facilitate a quality weed control program on DOW lands within the County.

State Land Board Lands:

The Colorado State Land Board recognizes the threat of noxious weeds to their lands within San Miguel County. A cooperative effort is being made and will continue between the San Miguel County Weed Program and the State Land Board to control weeds on those lands.

3.04 Federal Land:

Bureau of Land Management:

San Miguel County has Intergovernmental Agreements with the Uncompahgre Field Office and San Juan Field Office to treat noxious weeds on BLM land. These agreements are reviewed and modified on an annual basis with oversight and cooperation with the designated program manager in each office.

The Grand Mesa, Uncompahgre and Gunnison National Forest (GMUG) :

The GMUG manages its noxious weeds in San Miguel County through their Ranger District in Norwood. (A renewable agreement for cooperative services is in place at this time).

The Department of Energy:

The Department of Energy currently controls a considerable amount of land in the Western part of the county. The Department of Energy and its contractors have made great strides in controlling weeds on these lands through various methods.

3.05 Municipalities:

Mountain Village, Telluride, Sawpit, Ophir, Egnar and Norwood are the municipalities present within San Miguel County. Once San Miguel county adopts this plan it will be presented to the municipalities for their consideration. Municipalities have specific responsibilities as described in the Colorado Noxious Weed Act. (See Section 1.04 of the Plan.)

3.06 Private Lands:

The San Miguel County Weed Program will assist private landowners with weed control plans and recommendations wherever requested to do so. This will be a high priority. The weed program will

perform herbicide control on private lands only under limited circumstances and where the public good is served by such work. Cost share programs will be developed and used to assist private landowners as needed and deemed feasible.

3.07 Homeowners Associations:

The San Miguel County Weed Program recognizes the value of homeowners associations as tools to urge control efforts by private landowners and disseminate information. An effort will be made to work with all homeowners associations towards education of landowners and assuring control work on common ground and private lots.

SECTION IV PLAN OF WORK

4.01 Objectives and Goals:

Goals and Objectives of the San Miguel County Weed Management Plan

- A. Develop and implement a comprehensive noxious weed management program on all County-owned property.
- B. Educate the public concerning weed management issues.
- C. Foster a spirit of cooperation between county and federal, state and local government agencies and private landowners as well as with neighboring counties.
- D. Work with other government agencies and departments to institute “Best Management Practices” and/or policies that stress prevention as a weed management tool.
- E. Promote, and use, integrated management techniques.
- F. Establish and maintain healthy plant communities with native, desirable or beneficial vegetation.
- G. Restore desirable plant communities, healthy ecosystems, and productive agricultural lands within San Miguel County where disturbance has occurred.
- H. Stop the spread of noxious weeds to uninfested lands.
- I. Prevent the introduction of new invaders by increasing public awareness and facilitating public identification of potential invaders.
- J. Contain heavily weed-infested areas.
- K. Implement “Title 35 Article 5.5, The Colorado Noxious Weed Act.”

Management Goals for Weed Species

Management goals will vary from species to species, by location, and over time. For some species, such as yellow starthistle, complete eradication of existing infestations and total suppression of newly identified infestations is feasible and appropriate. More common invaders such as Canada thistle shall be targeted wherever possible and on all roadsides but complete elimination from the environment is not possible and will not

be the goal. New infestations, however, will be attacked if the area is otherwise free of the common invader or a current or desired land use requires it.

When dealing with escaped invasive ornamental it is important that we identify and contain existing plantings and exclude all potential invaders from any new plantings. The elimination of existing plantings of undesirable ornamentals on public lands and roadsides will be a high priority as is encouraging private landowners to do the same. In all cases, revegetation, either from the existing seed bank or through supplemental planting, must be included as a management goal. Without revegetation, disturbed or denuded soils invite adventitious weed infestation.

4.02 Prevention and Detection:

Prevention is the highest priority weed management technique on non-infested lands. Among government officials, land managers, farmers, ranchers, and the general public there is growing recognition that protecting weed-free plant communities is the most economical and efficient land management practice. The benefits are obvious. Weed-free plant communities:

- Provide essential wildlife habitat and forage.
- Save ranchers and farmers many billions of dollars in labor costs and lost production.
- Ensure aesthetic and recreational qualities of an area.
- Prevent soil erosion and improve water quality.

The spread of noxious weeds is most likely to occur where soil has been disturbed either by human activities (road and trail cuts, construction sites, the spread of gravel, road fill and topsoil contaminated with noxious weed seed, or overgrazing) or by natural events (fire, avalanches, mudslides, flooding, prolonged drought). Disturbed land provides opportunity for noxious weeds.

Exotic plants and seeds such as oxeye daisy, purple loosestrife, chicory, toadflax, and Russian olive escape from our yards and gardens. Since they are attractive and establish themselves quickly, they are popular with landscapers and gardeners for ornamental planting and may be purchased through nurseries. They have the same ability to dominate and spread, however, as other better known noxious weeds.

Still other known methods of weed introduction include:

- Contaminated seed, feed grain, hay, straw, and mulch.
- Movement of contaminated equipment, cars, bikes, etc. across uncontaminated lands.
- Animal fur, fleece, human clothing.
- Dried flower arrangements.

Prevention is best accomplished by ensuring that new weed species seed or vegetative reproductive plant parts of weeds are not introduced into new areas, and by early detection of any new weed species before they become widespread.

STRATEGIES to prevent the introduction or establishment of noxious weeds in areas not already infested include:

- Identification and eradication of small, new infestations.
- Protect weed free communities wherever possible from initial infestation.
- Continuous monitoring and evaluation to prevent recurrence.
- Identification of existing conditions, disturbances, and activities that represent a potential threat to native habitat.
- Identification of recently introduced weed species that represent a future threat.

- Timely revegetation and reclamation of disturbed sites using appropriate native and/or desirable plant species.
- The use of weed free seeds and mulch.
- Basin wide promotion of the Colorado Weed Free Hay and Forage program.
- Prioritization of weed management along areas of entry and dispersal.
- Discouraging the sale and planting of those ornamental plants known to be weedy elsewhere and likely to be invasive here.

PREVENTION WILL ALWAYS BE THE MOST EFFECTIVE NOXIOUS WEED CONTROL AVAILABLE.

4.03 San Miguel County Gravel Purchase Guidelines

The County shall require the following before agreeing to purchase any gravel for County projects:

- A. The gravel pit shall be inventoried and mapped by the pit operator for all plant species on the San Miguel county noxious weed list on an annual basis.
- B. There will be a weed management plan in place for any gravel pit from which San Miguel County intends to purchase gravel.
- C. The gravel pit operator must supply the County with a treatment record.
- D. The County will inspect the pit, the inventory, and the application records prior to the purchase of gravel or other aggregates.
- E. The San Miguel County Weed Manager is available to assist with plans and inventory for any gravel producer who may sell to San Miguel County

4.04 Education and Awareness:

Education must play a major role in implementing this weed management plan. Groups targeted for public education include the following: farmers and ranchers, homeowners associations, new landowners, private citizens, developers, gardeners, landscapers, nurseries, public and private land management agencies, recreational users, youth groups, schools, oil and gas companies, pipelines, and other utilities.

A partnership of the public and private sectors, along with awareness of what noxious weeds are and the problems they cause, is essential to maintain or create plant communities that are free of noxious weeds. Knowledge about how to identify weeds, how and where weeds are spread, and what it takes to manage weeds is needed. Continuation and expansion of current educational programs as well as the development of new programs is a priority of the San Miguel County Weed Plan. The San Miguel County Weed Program and/or other governmental agencies will provide this instruction. Workshops will be held throughout the year to enhance public awareness. Opportunities for education include:

- Widespread distribution of informative printed material from a variety of sources
- Offering weed tours and talks to the public.
- Private applicator certification, applicator safety, and laws/regulations.
- Proper calibration of spraying equipment.

- Contacting area nurseries, landscapers, and landscape architects, to emphasize the problems created by escaped ornamentals.
- Cooperation with local media to disseminate weed information.
- Custom weed management recommendations for individual landowners.

WEED MANAGEMENT BEGINS WITH EDUCATION.

4.05 Land Stewardship:

The Colorado Noxious Weed Act requires that all property owners use integrated methods to manage noxious weeds. Weed management must be ongoing, requiring an integrated approach in which proper land stewardship practices are utilized. Most weed species, if detected early, can be managed.

STRATEGIES:

- Identify your plants.
- Understand the target weed. Does it reproduce by seed or roots or both?
- Maintain inventory maps.
- Develop a noxious weed database.
- Develop site-specific weed management plans in cooperation with other individual landowners and public agencies.
- Develop a decision-making process that uses site-specific information to make decisions about treatment choices.
- Develop a long-term strategy including regular monitoring of treatment areas.
- Alleviate the situation, or practices, that allowed the weeds to spread.
- Take the necessary action.

MAINTAINING LAND THAT IS FREE OF WEEDS IS GOOD STEWARDSHIP. LANDOWNERS WHO DO NOT MANAGE THEIR WEEDS PLACE THEIR NEIGHBORS' LANDS AT RISK AS WELL AS THEIR OWN.

4.06 Revegetation and Rehabilitation:

A crucial part of any weed management plan is the reintroduction of site appropriate vegetation.

Establishing a desirable plant community after noxious weeds have been removed from a highly infested area requires timely cultivation and reseeded. Since the seeds from noxious weeds may lay dormant for many years, removing all visible signs of the noxious weeds does not ensure against their return. Revegetation can help prevent the germination of weed seeds. It is important to inspect the land regularly to identify and treat small, new infestations. For proper reclamation, managed irrigation of dry areas, fertilization, and reseeded are essential to establish desirable plant communities.

Native plants are most appropriate when the goal is restoration (trying to restore native habitat). Weed-free seeds of native Colorado grasses, wildflowers or plant species appropriate to the site may be purchased, but the best source for seeds is from native species that grow in the immediate vicinity of the infestation. They will be best adapted to local conditions and will help maintain local integrity and genetic viability. Using native plants or seeds to reclaim disturbed land reduces degradation of native ecosystems, reduces the

need for herbicides and conserves water resources. Native plants will provide a broad biological diversity and help keep Colorado looking like Colorado with a unique regional landscape that sets us apart from other areas of the country.

When the goal is reclamation (reseeding for quick ground cover establishment or erosion control), it may be appropriate to use introduced, non-aggressive grasses and forbs.

Contact the Natural Resources Conservation Service or Colorado State University Cooperative Extension for seeding recommendations. The *Native Plant Revegetation Guide for Colorado*, published by the Colorado State Parks Natural Areas Program, is an excellent guide for native plant reseeding. A copy is available through the sources listed above.

STRATEGIES:

- Study all vegetation in the area and surrounding areas.
- Preserve plant species native to Colorado.
- Test the soil for pH balance. Try to retain and utilize as much on-site topsoil as possible.
- Select a predominant species that is appropriate to the site. Then choose a few complimentary species to provide a balanced plant community.
- Choose plants that are healthy, vigorous and pest free.
- Use weed-free seeds. Use non-hybrid seeds. Avoid commercial seedpackets containing exotic plant species.
- Choose plants that are horticulturally appropriate, i.e. plant species that are adaptable to climate, soil and topographical conditions of the designated area.
- Consider the use of water, its availability and the vegetative requirements.
- To landscape for wildlife, choose native plants that provide cover, forage, browse, seeds for birds and rodents, and shade.
- Be site-specific; revegetation strategies may vary for small lots, farms, ranches or construction sites.
- Establish a vegetative cover that is diverse, effective and long lasting, capable of self-regeneration.
- Stabilize the surface.

4.07 Mapping and Inventory:

Mapping is a valuable tool in integrated weed management. As such, the San Miguel Basin Weed manager will establish and maintain visual maps of past and present infestations of noxious weeds on county land. This will provide a graphic representation of weed management progress and needs. The primary goal of mapping will be to record the noxious weed species present, areas infested, density of infestations, and other site factors pertinent to successfully managing the infestation. A high priority will be given to locating and mapping new invaders and initial invasions.

SECTION V

ENFORCEMENT

5.01 Compliance: Private Lands:

A. Inspection.

(1) The San Miguel County Weed Program, through its delegates, agents, and employees, shall have the right to enter upon any premises, lands, or places, whether public or private, during reasonable business hours for the purpose of inspecting for the existence of noxious weed infestations, when at least one of the following has occurred: (a) The landowner has requested an inspection; (b) A neighboring landowner or occupant has reported a suspected noxious weed infestation and requested an inspection; or (c) An authorized agent of the local government has made a visual observation from a public right-of-way or area and has reason to believe that a noxious weed infestation exists.

(2) (a) No entry upon any premises, lands, or places shall be permitted until the landowner or occupant has been notified by certified mail or direct contact that such inspection is pending. Where possible, inspections shall be scheduled and conducted with the concurrence of the landowner or occupant. (b) If, after receiving notice that an inspection is pending the landowner or occupant denies access to the inspector of the local governing body, the inspector may seek an inspection warrant issued by a municipal, county, or district court having jurisdiction over the land. The court shall issue an inspection warrant upon presentation by the local governing body, through its agent or employee, of an affidavit stating: i) the information which gives the inspector reasonable cause to believe that any provision of this article is being or has been violated; ii) that the occupant or landowner has denied access to the inspector; and iii) a general description of the location of the affected land. No landowner or occupant shall deny access to such land when presented with an inspection warrant.

B. Management.

(1) If following inspection pursuant to section 5.01(A), land is found to contain designated undesirable plants, the landowner shall be given written notice, personally or by certified mail. The notice shall name the undesirable plants, identify the location of the plants, advise the landowner to control the undesirable plants, and specify the best available control methods of integrated management. The notice shall include an offer to consult with the landowner in the development of a management plan for the control of undesirable plants on the land. The notice also shall state that the landowner shall, within a reasonable time not to exceed 10 days, either (I) comply with the terms of the notification; (II) acknowledge the terms of the notification and submit an acceptable plan and schedule for the completion of the plan for compliance; or (III) request an arbitration panel to determine the final management plan.

(2) If the landowner chooses action option I, the San Miguel County Weed Manager, or its representative, will re-inspect the land to confirm compliance.

(3) If the landowner chooses action option II, the San Miguel County Weed Manager, or its representative will review the proposed weed management plan and determine its efficacy. If the plan is acceptable, no further action will be taken except to monitor compliance, including re-inspection.

(4) If the landowner chooses action option III, an arbitration panel will be selected by the Board of County Commissioners, in accordance with CRS 35-5.5-109(4)(b). The state statute currently anticipates that the arbitration panel shall be comprised of a weed management specialist or weed scientist, a landowner of similar land in the same county, and a third panel member chosen by agreement of the first two panel members. The landowner or occupant shall be entitled to challenge any one member of the panel, and the local governing body shall name a new panel member from the same category. The decision of the arbitration panel shall be final. A hearing shall be set for a time and date as soon as practical after the panel is complete. The San Miguel County Weed Manager, or its representative, shall give written notice, personally or by mail, of the hearing to any complainant. The landowner is entitled to appear before the panel, individually and/or by representative, as is any complainant. The arbitration panel will be required to determine the final management plan not more than two calendar weeks after the hearing is completed. In the event of non-compliance with any management plan, in addition to remedies set forth in paragraph 5.01C. The arbitration panel shall have the ability to award cost of the arbitration to the prevailing party including arbitration panel fees and expenses. These fees and expenses may include, but are not limited to, salary, wages, travel, and per diem expenses.

C. Failure to Comply.

1. Public Nuisance.

If the landowner fails to comply with the notice to control the designated undesirable plants, fails to submit an acceptable management plan, fails to comply with an accepted management plan, or fails to comply with a management plan as determined by the arbitration panel, the Board of County Commissioners, at a public hearing at least 10 days after notice thereof to the property owner, may declare the infested property a public nuisance for which the remedies for abatement of a public nuisance shall be available as provided in C.R.S. 35-5.5-113. Once declared, such nuisances are subject to all laws and remedies relating to the prevention and abatement of nuisances. (The San Miguel County Weed Manager will determine the acceptability of the management plan.)

2. Other remedies.

In addition to, or as an alternative to the nuisance remedy The San Miguel County Weed Program may compel management of the weeds in the following manner: The BOCC, or its representative, shall give written notice of a hearing before the Board of County Commissioners to the landowner by personal delivery or by certified mail which will include the date and time of the hearing, 10 days prior to the hearing date. The notice will include (i) description of the land, (ii) name of the undesirable plants and their location(s) on the land, (iii) date the San Miguel County Weed Program, or its representative, will perform weed control on the land, (iv) method of control to be applied, (v) a statement that the land will be assessed the entire cost of the weed control plus 20% surcharge for the cost of inspection and other incidental costs, which total will be a lien on the land (or the tract of which it is a part) until paid, and

(vi) a statement should the landowner refuse admission to the land for application of the weed control, the County will seek civil and/or criminal penalties and court-enforced abatement of a public nuisance. Such an assessment under this section shall have priority over all other liens except general taxes and prior special assessments may be certified by The San Miguel County Weed Program to the County Treasurer and collected and paid over in the same manner as provided for collection of taxes. Costs of providing for and compelling weed management shall not be assessed until the level of management called for in the notice or as developed by the arbitration panel has been successfully achieved.

3. Other Occupants.

Whenever the land is known to the San Miguel County Weed Program, or its representative, to be occupied by someone other than the record owner, written notices also shall be given to the occupant, and the occupant shall be informed that C.R.S. 35-5.5-109 and this regulation imposes on occupants the same responsibilities for undesirable plant control as it imposes on landowners.

4. Notice.

Whenever notice is given by mail, it shall be deemed given when deposited in a regular depository of the United States Postal Service, postage prepaid. Notice to landowners shall be mailed to the last known address as shown in the County's Assessment Roll unless the landowner has provided the San Miguel County Weed Program a different address for notice. Notice to occupants shall be mailed to the land's physical address unless the occupant has provided the San Miguel County Weed Program with a different address for notice.

5. Condition Precedent.

No private land management shall be compelled without first applying the same or greater management measures to county land or rights-of-way that are adjacent to the private property.

5.02 State Public Lands:

C.R.S. 35-5.5-110 and the Governor's Executive Order for Noxious Weed Management Programs govern compliance on lands owned by the state of Colorado or its agencies.

5.03 County Rights-of-Way:

It shall be the duty of the San Miguel County Weed Program to confirm that all county roads, highways, rights-of-way, and any easements appurtenant thereto, are in compliance with the Colorado Noxious Weed Act and this management plan, and any violations of this article by the county shall be the financial responsibility of the county.

**SECTION VI
6.01 PLAN EVALUATION**

The goals and plan of work in the San Miguel Basin Weed Management Plan will be reviewed and evaluated annually at the First meeting of the year by the San Miguel County Weed Advisory Board. Any proposed additions or changes shall be recommended by the San Miguel County Weed Advisory Board and approved by ordinance by the Board of County Commissioners before becoming final.

The San Miguel County Weed Management Plan shall be reviewed by the Weed Advisory Board at least every three years, per CRS 35-5.5-107(4)(a); and the management plan and any recommended amendments to the plan shall be transmitted to the Board of County Commissioners for approval, modification, or rejection.

SECTION VII

RESOURCE DIRECTORY AND SOURCES OF INFORMATION

7.01 Government & Other Organizations

Bureau of Land Management
Norwood Field Office
PO Box 388
Norwood, CO 81423
(970) 327-4261

US Forest Service- Norwood Office
Box 388
Norwood, CO 81423
(970) 327-4261

Colorado Department of Agriculture
Eric Lane, State Weed Coordinator
700 Kipling St., Suite 4000
Lakewood, CO 80215-5894
(303) 239-4182

Colorado Department of Ag. Insectary
P.O. Box 400
Palisade, CO 81526
(970) 464-7916

Colorado Division of Wildlife
Regional Office
2300 S. Townsend Ave.
Montrose, CO 81401
970 249-3431

Colorado Natural Heritage Program
CSU, 254 General Services
Fort Collins, CO 80523
970 491-1309

Colorado State University
Extension Weed Science Specialist
116 Weed Research
Ft. Collins CO 80523
(970) 491-7568

Bureau of Land Management
San Juan Resource Area
15 Burnett Court
Durango, CO 81301
970 247-4874

Colorado Weed Management Association
P.O. Box 1910
Granby, CO 80446-1910
(970) 887-1228

Natural Resources Conservation Service
And San Miguel Basin Soil Conservation
District.
P.O. Box 29
Norwood, CO 81423
970 327-4245

Painted Sky R C and D
USFS Office, Delta
48742250 Hwy 50
Delta, CO 81416

San Miguel County Weed Program
Box 130

Norwood, CO 81423
(970) 327-0399

The Nature Conservancy

Box 3140
Telluride, CO 81435
970 728-5291

7.

Internet and Websites

Colorado Weed Management Association
<http://www.CWMA.org>

Native Plant Conservation Initiative
<http://www.nature.nps.gov/npci/>

Bureau of Land Management
<http://www.blm.gov./education.html>

National Wildlife Federation
<http://www.nwf.org>

Pesticide Information
<http://164.159.187.239?NWRSFiles/InternetResources/Pesticide.html>

The Nature Conservancy
<http://www.nature.org>

Noxious Weeds, Exotic and Invasive
Plant Management Resources
<http://164.159.187.239/NWRSFiles/InternetResources/Weeds.html>

Weed Science Society of America
<http://piked2.agn.uic.edu/wssa/>

Colorado Natural Heritage Program
<http://colostate.edu/Orgs/CNHP>

Colorado Natural Areas Program
<http://elbert.state.co.us>

Chemical Label Information
<http://greenbook.net>

Colorado Natural Heritage Program
heritage@lamar.colostate.edu

7.03 BOOKS

Weeds of the West
University of Wyoming Bulletin Room
(307) 766-2115

Colorado Flora, Western Slope
William Weber and Ronald Wittman
Available in most bookstores

Native Plant Revegetation Guide for Colorado
Colorado Natural Areas Program

Biology and Management of Noxious
Rangeland Weeds
University of Arizona Press
1230 N. Park Ave. Suite 102
Tucson, AZ 86719
1-800-426-3797

Trees and Shrubs of Colorado

By: Jack Carter

Available in most bookstores

Troublesome Weeds of the Rocky Mountain West

Colorado Weed Management Assoc.

(Available through San Miguel County Weed Program)

970 327-0399

(970) 887-1228

SECTION VIII

8.01 DEFINITIONS

1. Act – The Colorado Noxious Weed Act, Title 35 C.R.S., Article 5.5 as amended.
2. Adjacent – Having a common boundary that meets or touches at some point.
3. Aggressive – Fast growing, tending to spread quickly.
4. Agriculture – Uses involving the cultivation of land, production of crops, and/or the keeping of livestock and the preparation of these products for man’s use and disposal.
5. Alien Plant – A plant species that is not indigenous to the State of Colorado.
6. Annual – A plant that lasts one growing season, completing its life cycle from seed to seed in one year.
7. Biennial – A plant that lives in two calendar years. The first year is usually a vegetative form, such as a rosette of leaves. The second year the plant grows a flowering shoot, sets seeds and dies.
8. Biological Management – The use of organisms to disrupt the growth of noxious weeds.
9. Bolt – To flower or produce seeds prematurely or develop a flowering stem from a rosette.
10. Bract – A reduced or modified leaf often surrounding the base of a flower.
11. Browse - Tender shoots, twigs, and leaves of trees and shrubs fit for food for wildlife.
12. Chemical Management – The use of agents or plant growth regulators to disrupt or inhibit the growth of noxious weeds.
13. Commissioners – The San Miguel County Board of Commissioners.
14. County – The unincorporated areas of San Miguel County.
15. Cultural Management – Methods or management practices which favor the growth of desirable plants over noxious weeds, including maintaining optimum fertility and plant moisture status in an area, planting at optimum density and spatial arrangement in an area, and planting species most suited to a particular area.
16. Designated Noxious Weed – A non-native, invasive plant or plant parts that is identified as a threat to native plant communities and included on the San Miguel Basin Weed List.
17. Desirable Plants – Plants considered to be advantageous and beneficial to the environmental viability of the county.

18. Escaped Ornamental -A plant originally intended for horticultural or landscape situations that has escaped its intended boundaries.
19. Exotic Plant – A plant that is not a regular member of the native or natural community in which it is found.
20. Forb - A broad-leafed, non-woody plant other than grass that dies back to the ground after each growing season.
21. Forage - Food for animals, especially when taken by browsing or grazing.
22. Herbaceous - Applies to plants of soft texture whose stems die back to the ground after each growing season; green and leaf like, not woody.
23. Infestation – Growth of an undesirable plant which has become harmful or bothersome.
 - ◆ Heavy Infestation – Dense, 25-100 percent canopy cover.
 - ◆ Moderate Infestation – Widely scattered plants, 5-25 percent canopy cover.
 - ◆ Light Infestation – Occasional plant per acre, less than 5 percent canopy cover.
24. Integrated Management – The planning and implementation of a coordinated program utilizing a variety of methods for managing noxious weeds, the purpose of which is to achieve desirable plant communities. Such methods may include but are not limited to education, preventive measures, good stewardship and biological, cultural, herbicide and mechanical management.
25. Invasive – Aggressive, capable of invading a plant community and creating a monoculture.
26. Invasive Ornamental -A plant originally intended for horticultural or landscape situations that has escaped its intended boundaries and is capable of invading a plant community and creating a monoculture.
27. Landowner – Any owner of record of state, municipal or private property including an owner of any easement, right-of-way, or estate within the county.
28. Lobe - A division or segment of a leaf or other plant part, especially a rounded one.
29. Local Noxious Weed – Any plant of local importance which has been declared an invasive or undesirable plant by the Garfield County Weed Advisory Board.
30. Management – Any activity that prevents a plant from establishing, reproducing, or dispersing itself.
31. Management Plan – A plan developed by the local Weed Advisory Board and implemented by the Board of County Commissioners in order to control the spread of noxious weeds.
32. Mechanical Management – Methods or management practices that physically disrupt plant growth including tilling, mowing, burning, flooding, mulching, hand-pulling, shoveling, hoeing and chopping.
33. Monoculture – A single homogeneous crop without diversity.
34. Native Plant – A plant species that is indigenous to a particular locale.
35. Neighboring – Any property located within a one-half mile radius of the boundary of a subject property.
36. Noxious Weed – An alien plant or parts of an alien plant that has been designated as being invasive and undesirable and has been declared a noxious weed by the County Weed Advisory Board and meets one or more of the following criteria:
 - a) aggressively invades or is physically destructive to economic crops or native plant communities;

- b) is detrimental directly or indirectly to the environmentally sound management of natural or agricultural ecosystems;
 - c) is poisonous to livestock;
 - d) is a carrier of detrimental insects, diseases or parasites.
37. Noxious Weed Management – The planning and implementation of an integrated program to manage undesirable or problematic plant species.
 38. Ornamental - A decorative plant- may be native or non-native
 39. Perennial - A plant that grows for three years or more. Usually flowering and producing fruit each year. The above ground part of the plant may die, but new growth comes from the roots or the crown each spring.
 40. Petiole - A slender stem that supports the blade of a foliage leaf.
 41. Rhizome - An elongated subterranean plant stem that produces shoots above and roots below, and is distinguished from a true root by possessing buds, nodes and scalelike leaves.
 42. Rosette - A cluster of closely crowded leaves in a compact circle, usually at ground level.
 43. San Miguel County Weed Advisory Board – A group of individuals appointed by the Board of County Commissioners of San Miguel County to advise on matters of management of noxious weeds
 44. State Noxious Weed – Any weed identified by the commissioner of the State of Colorado Department of Agriculture after surveying the Local Weed Advisory Boards and prioritizing the top ten problematic plants. Said survey is to be conducted every three years.
 45. Subject Lands - All public and private lands within unincorporated San Miguel County with the exception of:
 - a) any municipal property owned or leased to an incorporated municipality;
 - b) any land managed or administered by a federal agency.
 46. Surfactant - A compound that improves the emulsifying, dispersing, spreading, wetting, or other surface modifying properties of liquids.
 47. Weed Manager – The agent or employee appointed to conduct the duties and functions as defined under this plan.
 48. Weed Office – The office of the Weed Manager out of which all noxious weed administration and enforcement activities are conducted- located in Norwood.
 49. Weed Plan- A plan for managing an identified weed infestation or for preventing the introduction of potential invaders. May include plans for a variety of control options including chemical, biological, cultural, mechanical etc.. Must be a realistic approach to the problem and must show intent to actually perform weed control activities.
 50. Wildflower – The flower of a wild or uncultivated plant or the plant bearing it- preferably native to Colorado. Many flowers listed as wildflowers are not native to Colorado or the USA.
 51. Xeriscape – Landscaping with water conservation as a major objective.