

**CITY OF GREELEY
NOXIOUS WEED MANAGEMENT PLAN
MAY 2004**

I. INTRODUCTION

The Colorado Weed Management Act (CRS §35-5.5-101, et. seq.) states that certain undesirable plants constitute a threat to the continued economic and environmental value of the land in Colorado, and if present in any area of the state must be managed by the landowner. The State list of plant species that are appointed as noxious weeds are designated by rule. In 2003 the State law was amended to classify noxious weeds into categories for immediate eradication, containment, and suppression to further assist the State in coordinating efforts to stop the spread of noxious weeds. The State adopted new rules in 2004 for the administration and enforcement of the State Noxious Weed Law and designated certain weeds as List A, B, or C for the purpose of determining control strategies.

The governing body of a municipality may declare additional noxious weeds and may adopt eradication, containment, or suppression standards that are more stringent than the standards adopted by the State. The Colorado Weed Management Act also states that local governments are directed to take the necessary steps to manage the undesirable plants in their respective jurisdictions. They are further directed to appoint an advisory commission whose responsibilities are to develop recommended management criteria for the designated noxious weeds. This plan is directed at noxious weed management within the municipal limits of Greeley as required by the City of Greeley Municipal Code, Section 9.16.077 (1). All other weeds are addressed by Section 9.16.080 (a-f).

II. CITY OF GREELEY NOXIOUS WEED PROGRAM

In early 1996, the Greeley City Council appointed a five member citizen board called the Air Quality and Natural Resource Commission. The Commission has among its duties the responsibility of addressing the state statutory requirements for identification and management of noxious weed concerns within the City of Greeley. "Noxious Weed" as defined in the Greeley Municipal Code (Section 9.16.080) shall mean those plants designated in the Noxious Weed Management Plan. For the purposes of the Noxious Weed Management Plan, "noxious weed" means an alien plant or parts of an alien plant that has been designated by rule as being noxious or has been declared a noxious weed by the Air Quality and Natural Resource Commission or the State of Colorado, and meets one or more of the following criteria:

1. Aggressively invades or is detrimental to economic crops or native plant communities;
2. Is poisonous to livestock;
3. Is a carrier of detrimental insects, diseases, or parasites;
4. The direct or indirect effect of the presence of this

plant is detrimental to the environmentally sound management of natural or agricultural ecosystems.

DEFINITIONS

COMMISSIONER means the Commissioner of the Colorado Department of Agriculture.

CONTAINMENT means maintaining an intensively managed buffer zone that separates infested regions, where suppression activities prevail, from largely uninfested regions, where suppression activities prevail, from largely uninfested regions, where eradication activities prevail.

ERADICATION means reducing the reproductive success of a noxious weed species or specified noxious weed population in largely uninfested regions to zero and permanently eliminating the species or population within a specified period of time. Once all specified weed populations are eliminated or prevented from reproducing, intensive efforts are to continue until the existing seed bank is exhausted.

INFESTED ACREAGE means an area of land containing a noxious weed species, defined by the actual perimeter of the infestation as delineated by the canopy cover of the plants and excluding areas not infested.

LIST A means rare noxious weed species that are subject to eradication wherever detected statewide in order to protect neighboring lands and the state as a whole.

All populations of List A species in Colorado are designated by the Commissioner of Agriculture for eradication. It is a violation of State rules to allow any plant of any population of any List A species to produce seed or develop other reproductive propagules. Prescribed management techniques (See Appendix A) must be applied to every population of List A noxious weeds present in Colorado to achieve the following objectives:

- A. The plants of every population of List A species must be eradicated prior to seed development.
- B. Once all mature plants are eliminated, appropriate efforts must be made to detect and eliminate new plants arising from seed, reproductive propagule, or root stock for the duration of the seed longevity for the particular species.
- C. In order to ensure that seeds or other reproductive propagules are not produced or spread, any plant with flowers, seeds, or other propagules must be placed in sealed plastic bags and disposed of by:
 1. high intensity burning in a controlled environment that completely destroys seed viability;
 2. removal of plant materials to a solid waste landfill which covers refuse daily with six inches of soil or alternative material; or
 3. any other method approved by the Commissioner.

Within one year of detection, any local governing body with a population of any List A species must provide to the State Weed Coordinator mapping data pertinent to each population including:

- A. Species name
- B. Population location(s) including distribution and abundance
- C. Estimated infested acreage

LIST B means noxious weed species with discrete statewide distributions that are subject to eradication, containment, or suppression in portions of the state designated by the State in order to stop the continued spread of these species.

LIST C means widespread and well-established noxious weed species for which control is recommended but not required by the State, although local governing bodies may require management.

NOXIOUS WEED shall mean those plants as designated in the Noxious Weed Management Plan.

POPULATION means a group of designated noxious weeds of the same species occupying a particular geographic region and capable of interbreeding.

RESTORATION means the removal of noxious weed species and reestablishment of desirable plant communities on lands of significant environmental or agricultural value in order to help restore or maintain said value.

SUPPRESSION means reducing the vigor of noxious weed populations within an infested region, decreasing the propensity of noxious weed species to spread to surrounding lands, and mitigating the negative effects of noxious weed populations on infested lands. Suppression efforts may employ a wide variety of integrated management techniques.

LIST A NOXIOUS WEEDS SPECIES

- African Rue, *Peganum Harmala*
- Camelthorn, *Alhagi pseudalhagi*
- Common Cuprina, *Crupina vulagaris*
- Cypress Spurge, *Euphorbia cyparissias*
- Dyer's Woad, *Isatis tintoria*
- Giant Salvinia, *Salvinia molesta*
- Hydrilla, *Hydrilla verticillata*
- Meadow Knapweed, *Centaurea pratensis*
- Mediterranean Sage, *Salvia Aethiopsis*
- Medusahead, *Taeniatherum caput-medusae*
- Myrtle Spurge, *Euphorbia myrsinites*
- Purple Loosestrife, *Lythrum salicaria*
- Rush Skeletonweed, *Chondrilla juncea*
- Sericea Lespedeza, *Lespedeza cuneata*
- Squarrose Knapweed, *Centaurea virgata*
- Tansy Ragwort, *Senecia Jacobaea*
- Yellow Starthistle, *Centaurea solstitialis*

As required by the City of Greeley Municipal Code, Section 9.16.080(g), Weeds in List A are designated as noxious weeds which must be eradicated by integrated management techniques prescribed by the state (see Appendix A).

LIST B NOXIOUS WEED SPECIES

- **Abisinth Wormwood, *Artemesia amsinthium*
- Black Henbane, *Hyoscyamus niger*
- Bouncingbet, *Saponaria officinalis*
- Bull Thistle, *Cirsium vulgare*
- *Canada Thistle, *Cirsium arvense*
- **Chinese Clematis, *Clematis orientalis*
- Common Tansy, *Tanacetum vulgare*
- Common Teasel, *Dispacus fullonum*
- Corn Chamomile, *Anthemis arvensis*
- Cutleaf Teasel, *Dipsacus laciniatus*
- *Dalmatian Toadflax, broad-leaved, *Linaria dalmatica*
- Dalmation Toadflax, narrow-leaved, *Linaria genistifolia*
- Dame's Rocket, *Hesperis matronalis*
- *Diffuse Knapweed, *Centaurea diffusa*
- Eurasian Watermilfoil, *Myriophyllum spicatum*
- *Hoary Cress, *Cardaria draba*
- Houndstongue, *Cynoglossum officinale*
- *Leafy Spurge, *Euphorbia esula*
- Mayweed Chamomile, *Anthemis cotula*
- Moth Mullien, *Verbascum blatteria*
- *Musk Thistle, *Carduus nutans*
- **Orange Hawkweed, *Hieracium aurantiacum*
- Oxeye Daisy, *Chrysanthemum leucanthemum*
- Perennial Pepperweed, *Lepidium latifolium*
- **Plumeless Thistle, *Carduus acanthoides*
- Quackgrass, *Elytrigia repens*
- Redstem Filaree, *Erodium cicutarium*
- *Russian Knapweed, *Acroptilon repens*
- *Russian-olive, *Eleagnus angustifolia*
- *Salt Cedar, *Tamarix chinensis*, *T. parviflora*, and *T. Ramosissima*
- Scentless Chamomile, *Matricaria perforata*
- *Scotch Thistle, *Onopordum acanthium*
- Scotch Thistle, *Onopordum tauricum*
- *Spotted Knapweed, *Centaurea maculosa*
- Spurred Anoda, *Anoda cristata*
- Sulfer Cinquefoil, *Potentilla recta*
- Venice Mallow, *Hibiscus trionum*
- Wild Caraway, *Carum carvi*
- Yellow Nutsedge, *Cyperus esculentus*
- *Yellow Toadflax, *Linaria vulgaris*

As required by the City of Greeley Municipal Code, Section 9.16.080(g), Weeds in List B indicated by an “*” are designated as noxious weeds which must be controlled by integrated management techniques (see Appendix B). The City recommends that other List B species be managed pending development of State required management criteria.

Weeds indicated by a “**” are the list B species which will be the first list B species for which the State will develop and implement State Noxious Weed Management Plans designed to stop the continued spread of these species. The State encourages local governments to make special note of the distribution and abundance of these species.

LIST C NOXIOUS WEED SPECIES

Chicory, *Cichorium intybus*
Common Burdock, *Arctium minus*
Common Mullein, *Verbascum thapsus*
Common St. Johnswort, *Hypericum perforatum*
Downy Brome, *Bromus tectorum*
*Field Bindweed, *Convolvulus arvensis*
Halogeton, *Halogeton glomeratus*
Johnsongrass, *Sorghum Halapense*
*Jointed Goatgrass, *Aegilops cylindrica*
Perennial Sowthistle, *Sonchus arvensis*
Poison Hemlock, *Conium maculatum*
*Puncturevine, *Tribulus terrestris*
Velvetleaf, *Abutilon theophrasit*
Wild Proso Millet, *Panicum miliaceum*

As required by the City of Greeley Municipal Code, Section 9.16.080(g), Weeds in List C indicated by an “*” are designated as noxious weeds which must be controlled by integrated management techniques (see Appendix B)

The following additional plants are hereby designated as noxious weeds by the City of Greeley as required by the City of Greeley Municipal Code, Section 9.16.080(g).

Sandbur, *Cenchrus longispinus*

In accordance with the City of Greeley Municipal Code, Section 9.16.080 (g), these plants are declared a threat to the economic and environmental value of the land within the City, and no owner, tenant or agent shall allow any such plant growth to occur on any lot, block, or parcel of ground, including those areas adjoining public rights-of-way and must eradicate, contain or suppress their growth as determined by their classification as these terms are defined in the Greeley Municipal Code and this Plan.

The Code further states that control and management of noxious weeds shall be done in compliance with the Noxious Weed Management Plan (see Appendices A-D).

III. PROGRAM GOALS AND OBJECTIVES

The goals and objectives of the City of Greeley with respect to weed management within the municipality include the following:

- A. Develop and carry out a comprehensive noxious weed control program on all City-owned property.
- B. Carry out sufficient measures, including project oversight and enforcement, as may be necessary to ensure the eradication of List A species and populations of List B species designated for eradication by the State.
- C. Provide the State with assistance in disseminating financial resources to affected landowners and mapping data pursuant to State Rules and determine the cost of eradication to be borne by affected landowners.
- D. Establish an educational program, using mailings and hosting educational seminars that will effectively communicate weed management information to the landowners in the City of Greeley.
- E. Identify non-informed or negligent landowners who are not carrying out weed management programs on their property and provide technical support for establishing weed management plans and for the eradication of List A species and populations of List B species designated for eradication and enforce local regulations requiring compliance to ensure that City designated noxious weed species are managed (see Section IV) as necessary.
- F. Work with state and federal agencies, through intergovernmental agreements, to establish effective weed management programs on their properties which are located within the city.
- G. Identify areas infested with noxious weeds through inspections and observations and track them on the computer through databases and other programs.
- H. Produce regular community publications that will inform Greeley residents of noxious weeds and their appropriate management.
- I. Maintain contact with state officials regarding noxious weed designations and management.

IV. CODE ENFORCEMENT AND NOTICE TO LANDOWNERS

According to Section 9.16.080(h), the City has the authority with regard to private lands within the municipality to inspect and to notify the landowner or occupant of the presence of noxious weeds. The notice will name the noxious weeds present, advise the landowner or occupant to manage the noxious weeds according to their classification, and specify the best available control methods of integrated management. Where possible, the City will consult with the affected landowner or occupant in the development of a plan for the management of the noxious weeds.

The landowner's responsibility in regard to receiving notice of the presence of noxious weeds is to comply with the terms of the notification within 5 days or acknowledge the terms of the notification and submit a written management plan which includes a schedule for the completion of the plan. The City will review the plan within 5 days of receipt. If the plan is rejected by the City, the landowner may request an arbitration panel be convened to determine the final management plan. The 3-member arbitration panel shall be comprised of a Weed Management Specialist or Weed Scientist, a landowner of similar land within the city, and a third member selected by the first two members. The landowner requesting the panel may challenge any one member of the panel and the City will name a new panel member from the same category. The panel will convene at the earliest opportunity and develop a management plan. The decision of the panel is final. The City may assess the landowner for any actual expenses incurred for the conduct of the hearing.

If the landowner fails to comply with the terms of the notification or other steps as provided in the Municipal Code, the City may have the weeds controlled or removed and charge the cost to the landowner together with an additional 20% for inspection and other incidentals. Costs assessed shall be paid to the Director of Finance within 30 days after the bill is mailed. Failure to pay such assessment will cause the assessment to become a lien against the property (Sections 9.16.090, 100, 110).

V. DESCRIPTIONS OF DESIGNATED NOXIOUS WEEDS

- A. CANADA THISTLE, *Cirsium arvense*, is a member of the Aster or Sunflower family introduced in North America from Europe. It is an aggressive, creeping perennial that reproduces by seed and fleshy horizontal roots. The erect stem is 1 to 5 feet tall and branched at the top. Sharp spines are numerous on the outer edges of the leaves and on the branches and main stem of the plant. The flowers are small, about 3/4-inch or less in diameter and light pink to rose-purple in color. The seeds are flattened, dark brown, and approximately 1/8-inch long. Canada thistle emerges in April or May in most of Colorado. It is a difficult plant to control because of its extensive root system. Vertical roots may grow six to fifteen feet deep and horizontal roots may extend fifteen feet or more. Canada thistle is the most widespread noxious weed in Weld County. It can be found in lawns and gardens, pastures, riparian areas along rivers, irrigation ditches, along roadsides and in cultivated fields and waste areas.



- B. DALMATIAN TOADFLAX, *Linaria gentisifolia ssp. dalmatica*, is a member of the Figwort family. It was introduced as an ornamental from Europe and is now rapidly invading dry rangeland in Colorado and Weld County. Dalmatian toadflax is a creeping perennial well suited for arid sites. The leaves are waxy and heart-shaped. The stems are two to four feet tall. The flowers are snapdragon-shaped, bright yellow, with orange centers. Dalmatian toadflax can spread rapidly once established. Because of its deep, extensive root system, waxy leaf, and heavy seed production, this plant is difficult to manage.

- C. DIFFUSE KNAPWEED, *Centaurea diffusa*, is a member of the Aster family in the Thistle tribe. It was introduced from Europe and is a biennial or short-lived perennial which reproduces only by seed. The plant produces a single, much-branched stem that is 1 ½ to 2 feet tall. The first year growth is a rosette of leaves with each leaf divided into narrow segments. Flowers are mostly white, sometimes purple, and are located on each branch tip. Diffuse Knapweed can be found in pastures, riparian areas, roadsides, and waste areas. It spreads rapidly when the mature plant breaks off at ground level and is blown with the wind, dispersing seed. It is a pioneer species that will quickly invade disturbed, dry sites.



D. FIELD BINDWEED, *Convolvulus arvensis*, is a member of the Morning glory family introduced from Europe. It is a creeping perennial that reproduces by seeds and horizontal roots. The stems are smooth, slender, 1 to 4 feet long and spread thickly over the ground or wind around erect plants or other objects. The leaves are somewhat arrow-shaped. The flowers are bell or trumpet-shaped, white or pink, and about 3/4 to 1-inch across. Field bindweed is one of the most competitive perennial weeds in Colorado. A 2 or 3 year food supply is stored in the extensive underground root system. This makes it difficult to control by cultivation because roots will live as long as their food reserve lasts. Seeds can stay viable in the soil for up to 40 years. Field Bindweed is widespread in cultivated areas, lawns, gardens, pastures, roadsides and waste areas.



E. HOARY CRESS, *Cardaria draba*, also called Whitetop is a member of the Mustard family. It 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 root stock. It grows erect from 10 to 18 inches high and is gray-white in color. The flowers are white, 1/8-inch across and numerous in compact flattop clusters which give the plant its name. Each heart-shaped seed pod contains two oval red-brown seeds. Hoary Cress is one of the earliest perennial weeds to emerge in the spring. Flowers are produced in late April and May. It grows vigorously in the irrigated, alkaline soils of the West in waste places, cultivated fields, and pastures.

F. JOINTED GOATGRASS, *Aegilops cylindrica*, is a member of the Grass family in the Barley tribe. It is a non-native grass introduced from Turkey in the late 1800's. It is a winter annual, 15 to 30 inches tall, that reproduces by seed. It is very difficult to control because it is genetically related to wheat. Seeds can survive in the soil for up to 5 years. The seeds are very similar in size and shape to wheat seed and are therefore difficult to screen out. Jointed Goatgrass is found in winter wheat fields and on fallow land. It is becoming an increasing problem in the wheat growing areas of eastern Colorado.



G. LEAFY SPURGE, *Euphorbia esula*, is a member of the Spurge family introduced from Europe. It is a creeping perennial which reproduces by seed and extensive creeping roots. The roots can extend as deep as 30 feet and are extremely wide spreading. The shoots grow erect, 1 to 3 feet high, are pale green and unbranched except for the flower clusters. The small yellow-green flowers are enclosed by a pair of yellowish-green, heart-shaped bracts that have the appearance of flowers. The pods are three-seeded. The plant, including the root, has a milky latex that is damaging to eyes and sensitive skin. Leafy Spurge is an extremely difficult plant to control with any one technique because of its extensive sprouting root system. It is probably the most serious noxious weed threat in Colorado. It is adapted to a wide variety of habitats and is very competitive with other plant species. It is found primarily in riparian sites along waterways in Weld County and also along irrigation ditches, range and pastures, roadsides and other non-cropland sites. Although it is unpalatable to cattle, sheep and goats eat spurge, do well on it, and are useful biological control tools.



H. MUSK THISTLE, *Carduus nutans*, is a member of the Aster family in the Thistle tribe. It is an introduced biennial which reproduces only by seed. Large, compact rosettes (clumps of leaves on the ground) are formed during the first year with a large, fleshy taproot. The second year the plant bolts forming an erect spiny stem, 2 to 6 feet tall and branched at the top. The 3 to 6 inch long leaves are deeply lobed with five points per lobe and are very spiny. They are dark green with a light green midrib and mostly white margins. The large, showy flowers are produced on the ends of the branches. They are 1 ½ to 2 ½ inches

across, usually purple, and surrounded by numerous lance-shaped, spine-tipped bracts. The blooms appear in late May and June and set seed in June or July. Musk Thistle is commonly found in pastures, along roadsides, and riparian sites. It prefers moist, bottom land soil, but can be found on drier upland sites as well. It is becoming an increasing problem along the Front Range.

- I. PUNCTUREVINE, *Tribulus terrestris*, is an annual that reproduces by seed. This plant lays close to the ground forming a large mat. The leaves are small and feather like. The small yellow flowers are produced throughout the summer. The seed breaks into five sharp tack-like structures that give the plant its other common name of “goatheads”. These seeds are the bane of bicyclists and may injure livestock. Puncturevine



grows in lawns and gardens, pastures, cultivated fields, and waste places. The hard seed can lie dormant in the soil for many years making eradication difficult.

- J. PURPLE LOOSESTRIFE, *Lythrum salicaria*, is a non-native perennial flowering plant introduced from Europe that has escaped from ornamental plantings. It has invaded and devastated wetlands across the country. The erect, square stem is multi-branched and 1 ½ to 8 feet tall. The magenta colored flowers are arranged in long clusters. Purple Loosestrife needs wet soil or shallow standing water where it quickly invades and takes over wetland areas, crowding out native plants that provide food and shelter for wildlife. Its dense roots and leaves clog water channels. Purple Loosestrife spreads through dispersal of its tiny seeds and also by pieces of roots or stems. The seeds remain alive in the soil for many years. Native look-alikes include fireweed (*Chamerion (Epilobium) danielsii*), native loosestrife (*Lythrum alatum*), and gayfeather/blazing star (*Liatris punctata*). These plants are safe to use as ornamentals.



- K. RUSSIAN KNAPWEED, *Acroptilon repens*, is a member of the Aster family, Thistle tribe. It is a creeping perennial introduced from Europe. It reproduces by seeds and creeping, horizontal roots. Roots, which are both vertical and horizontal, may or may not be black with a scaly appearance. The rigid stems are erect, rather stiff, branched and 1 to 3 feet high. Young stems are covered with soft gray hairs. The upper leaves are small and narrow, leaves midway up the stem have slightly toothed margins, and basal leaves are deeply notched. The flowers are thistle-like, and solitary at the ends of the branches. They are 1/3 to ½ inch in diameter and lavender to white in color. The plant flowers in June to August and seed is produced in late summer to early fall. Russian Knapweed has the ability to release chemicals into the soil as foliage decays which inhibit the growth of surrounding vegetation (allelopathic properties). Thus, once established, Russian Knapweed can colonize an area rapidly and become very difficult to control or eradicate. It grows in cultivated fields, along ditch banks, fence rows, roadsides, and in waste places. It is very poisonous to horses.



L. RUSSIAN OLIVE, *Eleagnus angustifolia*, a tall shrub or small tree native to Europe and Asia introduced from Russia during the 1800's for use as an ornamental and a windbreak. It has been widely used in landscaping because of its gray-green color and brown, shreddy bark. The small yellow flowers that bloom in late spring have an unusual, spicy aroma. Russian Olive has escaped cultivation and has become a major invader along streams and rivers. Its aggressive growth displaces native cottonwoods and willows reducing important wildlife habitat. Russian Olive WAS DESIGNATED AS A NOXIOUS WEED BY THE STATE IN 2003. EXISTING TREES IN LANDSCAPES MAY REMAIN, HOWEVER THIS SPECIES MAY NO LONGER BE PLANTED OR NATURALLY OCCURRING SEEDLINGS ALLOWED TO GROW. IN ADDITION, THE CITY MAY REQUIRE REMOVAL OF THIS SPECIES IN NATURAL AREAS AS MAY BE APPROPRIATE FOR THE MANAGEMENT OF THE SITE.

M. SALT CEDAR/SALT TAMARACK, *Tamarix ramosissima*, is a tall shrub or small tree native to Arabian and Middle Eastern deserts that was introduced into the US in 1837. It has been commonly used in ornamental plantings for its soft grey-green foliage and feathery pink flowers. It has escaped cultivation and is becoming established along waterways where it is displacing native plants. It has the ability to entwine trees and shrubs and form impenetrable stands that prevent the establishment of native cottonwoods and willows. Each year, a single Salt Cedar can produce as many as 500,000 tiny seeds, which can be carried for miles by the wind and water.



N. SANDBUR, *Cenchrus longispinus*, is a member of the Grass family in the Panic grass tribe. It is a non-native annual grass introduced from Europe and reproduces by seed. Stems are 8 inches to 3 feet long, ascending or prostrate and often form mats. Sandbur produces clusters of 10 to 30 burs with each about 1/4 inch in diameter and covered with stiff, barbed spines.

Sandbur grows in cultivated fields, pastures, roadsides and waste places and favors sandy soil. The burs cause injury in livestock and become entangled in sheep wool.



- O. SCOTCH THISTLE, *Onopordum ancanthium*, is a member of the Aster family in the Thistle tribe. It is a biennial that was introduced from Europe or eastern Asia and can reach a height of 8 feet. The rosette forms the first year and can have leaves up to 2 feet long and 1 foot wide. The spiny-edged leaves form leaf wings that extend down onto the stem. The branching plant blooms the second year with reddish-purple to violet flowers. It has a large, fleshy taproot. Scotch Thistle is found primarily along roadsides and railroads but can form an impenetrable barrier to livestock on rangeland and pastures.



- P. SPOTTED KNAPWEED, *Centaurea maculosa*, is a member of the Aster family, Thistle tribe. The plant is 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. Flowering heads are solitary and occur on the shoot tips. They are up to one inch in diameter and usually lavender to purple in color. Flowering occurs throughout the summer into fall. Spotted Knapweed grows in dry meadows, pasture land, stony hills, roadsides, and the sandy or gravelly flood plains of streams and rivers. It is a highly competitive plant that will exclude most grasses and forbs with time.

- Q. YELLOW TOADFLAX, *Linaria vulgaris*, sometimes called common toadflax or butter and eggs resembles the snapdragon in appearance. It was introduced from Europe as an ornamental and has escaped cultivation becoming a serious threat to rangeland and mountain meadows. It is a perennial reproducing from seeds as well as from underground root stalk. The stems of Yellow Toadflax are from 8 inches to 2 feet tall and leafy. The flowers are bright yellow with deep orange centers. They are about one inch long and blossom in dense clusters along the stem. Yellow Toadflax emerges in April and May. It is adapted to a wide variety of habitats, from moist to dry and does well in all types of soils. It displaces desirable grasses and reduces ecological diversity. Yellow Toadflax is an aggressive invader in cultivated fields, gardens, and waste places.



VI. NOXIOUS WEED MANAGEMENT METHODS

Integrated weed management methods should be used in managing the weed species listed under Section II of this plan. Integrated management means the planning and implementation of a coordinated program utilizing a variety of methods for managing noxious weeds, the purpose of which is to achieve specified management objectives and promote desirable plant communities within the landscape. Integrated management techniques include education, prevention, and control measures including cultural, mechanical, biological, and chemical control. For the purposes of this plan, the following definitions are used for the control measures. Management of the various noxious weeds will vary depending upon the site where the weed is located.

INTEGRATED WEED MANAGEMENT TECHNIQUES

1. **Cultural Control** means those methodologies or management practices conducted to favor the growth of desirable plants over undesirable plants. These practices include, but are not limited to, maintaining an 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 an area.
2. **Mechanical Control** means those methodologies or management practices that physically disrupt plant growth. These include, but are not limited to, tilling, mowing, burning, flooding, mulching, hand-pulling and hoeing.
3. **Biological Control** means the use of an organism to disrupt the growth of undesirable plants including, but not limited to, sheep, goats, cattle, insects and plant diseases.
4. **Chemical Control** means the use of herbicides or plant growth regulators to disrupt the growth of undesirable plants.

No recommendations or requirements in this plan concerning the use of herbicides are intended to contradict or supersede any other federal, state or local law regulating herbicide use. All use of herbicides to achieve any management objectives specified in this plan must comply with all applicable federal, state and local legal requirements, including but not limited to compliance with all directions for use, cautionary statements and any other requirements in the labeling of the particular herbicide product.

MANAGEMENT PLANS FOR INFESTED PROPERTIES

For each weed species on a property a specific control strategy should be selected. This is what will be implemented by the property owner as their management plan. If the weed has infested different habitat types such as pasture, riparian, wetland, etc. The appropriate control method for each area should be selected. A sample landowner weed management plan and guidelines for preparing it are shown in Appendix C.

State Prescribed management techniques for List A species are included in Appendix A.

Recommended noxious weed management in range, pasture and non-crop sites for the designated species is listed in appendix B. A quick reference chart is located in Appendix D.

VII. PLANTS OF CONCERN

In addition to the designated noxious weeds listed in Section II, the following plants are discouraged for use in local landscapes because of their potential to become noxious. Some of these plants are regulated under existing Municipal Code as noted in the descriptions.

BOX ELDER, *Acer negundo*, is a member of the Maple family. It is not allowed for planting in public rights-of-way (Section 13.42.240) because of its tendency to decay and create hazards. Although it is not generally considered an invasive plant, the seeds of the female box elder are the primary food source of box elder bugs which become a nuisance when they invade homes and offices every fall. Except in locations where few other tree species may thrive, or for special landscape effects, the Box Elder is not recommended.

SIBERIAN ELM, *Ulmus pumila*, is sometimes called Chinese Elm. Although the Siberian Elm has been used in yards throughout the plains in the past, its use is not encouraged in areas where other trees are readily available and reliable. This tree species has several characteristics which make it less desirable than other species. These include being a primary host for elm leaf beetles which invade buildings in massive numbers in the fall, as well as the tree's brittleness in high winds and heavy snows making it subject to limb breakage. Under City policies, the Siberian Elm is prohibited from being planted in public rights-of-way within the city limits (Section 13.42.240).

COTTONWOOD, *Populus* species. Although the native cottonwood is an important wildlife tree in riparian areas, under Section 13.42.170 of the Greeley Municipal Code, all cotton-bearing cottonwoods are prohibited with the City of Greeley, except for aspen which may be used but not in public rights-of-way. It should be noted that aspen spread by roots and can become invasive in some areas.

OTHER SPECIES: Although not currently regulated by the City of Greeley, there are many ornamental and herbal plants that are listed by the State and other knowledgeable organizations as invasive or noxious in certain areas. Some of these species include Chicory, Chinese Clematis, Common Tansy, Common St. Johnswort, and Oxeye Daisy (see List B and List C in Section II). Efforts should be made to select alternative species that will provide the same desirable traits without being invasive. Once established, noxious weeds are expensive to control.



VIII. EVALUATION OF PROGRAM

The annual goals and the plan of work will be reviewed and evaluated at the end of every year and will include any proposed additions or changes in the plan of work for the following year. Any additions or changes to the ordinance regulating noxious weed management must be recommended by the Air Quality and Natural Resource Commission and approved by the Greeley City Council.

The City of Greeley Noxious Weed Management Plan shall be reviewed by the Air Quality and Natural Resource Commission and amended, as needed, at least every three years.

APPENDIX A

Prescribed State Noxious Weed Management Plans for List A Noxious Weed Species

African rue. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for African rue:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is unknown.

Camelthorn. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for camelthorn:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is at least several years.

Common crupina. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for common crupina:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is three years.

Cypress spurge. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for cypress spurge:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.

- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is estimated to be eight years.

Dyer's woad. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for dyer's woad:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is at least eight years.

Giant salvinia. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for giant salvinia:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner, water drawdown (controlled water drainage), and handremoval, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques other than those prescribed in (a), or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Any efforts to physically remove plants must prevent fragmentation as stem fragments are considered plant propagules.
- D. Spore longevity is negligible.

Hydrilla. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for hydrilla:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner, water drawdown (controlled water drainage), and handremoval, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques other than those prescribed in (a), or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Any efforts to physically remove plants must prevent fragmentation as stem fragments are considered plant propagules.
- D. Seed longevity is unknown.

Meadow knapweed. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also

apply for meadow knapweed:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is estimated to be at least seven years.

Mediterranean sage. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for Mediterranean sage:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is unknown.

Medusahead. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for medusahead:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner, prescribed fire in conjunction with herbicide application, and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques other than those prescribed in (a), or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is at least two years.

Myrtle spurge. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for myrtle spurge:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is estimated to be eight years.

Purple loosestrife. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for purple loosestrife:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Any efforts to physically remove plants must prevent fragmentation as stem fragments are considered plant propagules.
- D. Seed longevity is unknown but at least 10 years.

Rush skeletonweed. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for rush skeletonweed:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is at least three years.

Sericea lespedeza. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for sericea lespedeza:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.
- C. Seed longevity is estimated to be at least twenty years.

Squarrose knapweed. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for squarrose knapweed:

- A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner, prescribed fire in conjunction with herbicide application, and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.
- B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques other than those

prescribed in (a), or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.

C. Seed longevity is at least three years.

Tansy ragwort. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for tansy ragwort:

A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.

B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques, or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.

C. Seed longevity is at least sixteen years.

Yellow starthistle. In addition to the requirements set forth in Section II of this Plan and pursuant to State rules for the management of all List A species, the following conditions also apply for yellow starthistle:

A. The prescribed integrated management techniques are limited to the use of herbicides approved by the Commissioner, prescribed fire in conjunction with herbicide application, and hand-pulling, digging, or other mechanical techniques approved by the Commissioner.

B. Prescribed integrated management techniques do not include the use of biocontrol agents, herbicides other than those prescribed in (a), cultural techniques other than those prescribed in (a), or mechanical techniques other than those prescribed in (a) unless otherwise approved by the Commissioner.

C. Seed longevity is at least ten years.

**APPENDIX B
CONTROL STRATEGIES
FOR SELECTED CITY-LISTED NOXIOUS WEED SPECIES**

CANADA THISTLE

A. MECHANICAL AND CHEMICAL CONTROL - MOWING WILL OCCUR THROUGHOUT THE GROWING SEASON IN ORDER TO KEEP THE PLANTS FROM GOING TO SEED. MOWING WILL BE TERMINATED IN LATE AUGUST FOLLOWED BY A HERBICIDE TREATMENT DURING LATE SEPTEMBER THROUGH OCTOBER BEFORE A HARD FROST.

B. CULTURAL AND CHEMICAL CONTROL - USE OF A SHORT RESIDUAL HERBICIDE FOLLOWED BY A SEEDING WITH A COMPETITIVE GRASS SUCH AS WESTERN WHEATGRASS OR OTHER SOD FORMING SPECIES (INDICATE SPECIES).

C. CHEMICAL CONTROL ONLY - A HERBICIDE APPLICATION WILL BE APPLIED FROM ROSETTE TO BUD STAGE. THIS WILL BE FOLLOWED UP WITH A FALL APPLICATION IF NEEDED. THE HERBICIDES THAT CAN BE USED INDEPENDENTLY OR IN COMBINATION WITH OTHER HERBICIDES ON CANADA THISTLE INCLUDE: CURTAIL, REDEEM R&P, CLARITY, TORDON 22K, 2,4-D, TELAR AND ROUNDUP PRO. ALL LABEL INSTRUCTIONS MUST BE FOLLOWED.

MUSK AND SCOTCH THISTLE

A. MECHANICAL AND CHEMICAL CONTROL - MOWING WILL OCCUR SEVERAL TIMES THROUGHOUT THE SUMMER, BUT NO LATER THAN THE BUD STAGE OF THE THISTLE PLANTS. THIS WILL KEEP THE PLANTS FROM GOING TO SEED. A HERBICIDE WILL BE APPLIED IN THE FALL BEFORE A HARD FROST ON THE NEW ROSETTES AND ANY PLANTS THAT HAVE BOLTED.

B. MECHANICAL CONTROL ONLY - MULTIPLE MOWINGS WILL BE CONDUCTED THROUGHOUT THE SUMMER TO KEEP THE PLANTS FROM GOING TO SEED, POTENTIALLY TWO TO FOUR TIMES DURING THE GROWING SEASON.

C. CHEMICAL CONTROL ONLY - A HERBICIDE WILL BE USED IN THE SPRING AND FALL WHEN THE PLANT IS IN THE ROSETTE STAGE. THE HERBICIDES THAT CAN BE USED INDEPENDENTLY OR IN COMBINATION WITH OTHER HERBICIDES ON MUSK AND SCOTCH THISTLE INCLUDE: CURTAIL, REDEEM R&P, CLARITY, TORDON 22K, TELAR, ESCORT, ROUNDUP PRO AND 2,4-D. ALL LABEL INSTRUCTIONS MUST BE FOLLOWED.

RUSSIAN KNAPWEED

A. CULTURAL AND CHEMICAL CONTROL - AN HERBICIDE APPLICATION USING SHORT RESIDUAL HERBICIDES WILL BE USED FOLLOWED UP BY SEEDING THE AREA WITH A COMPETITIVE GRASS SUCH AS WESTERN WHEATGRASS OR OTHER SOD FORMING SPECIES (INDICATE SPECIES).

B. MECHANICAL AND CHEMICAL CONTROL - MOWING WILL BE CARRIED OUT THROUGHOUT THE SEASON WITH THE FIRST AND SUCCESSIVE MOWING CYCLES CARRIED OUT AT THE BUD STAGE. A HERBICIDE TREATMENT WILL BE MADE IN THE FALL BEFORE A HARD FREEZE.

C. MECHANICAL CONTROL ONLY - MULTIPLE MOWINGS WILL BE CARRIED OUT THROUGHOUT THE SEASON TO PREVENT SEED SET. (THIS IS THE LEAST

EFFECTIVE OPTION.)

D. CHEMICAL CONTROL ONLY - A HERBICIDE WILL BE USED IN THE SPRING FROM BOLTING TO BUD STAGE AND IN THE FALL, IF NECESSARY. THE SAME HERBICIDES LISTED FOR CANADA THISTLE CAN BE USED ON RUSSIAN KNAPWEED.

DIFFUSE AND SPOTTED KNAPWEED

A. CULTURAL AND CHEMICAL CONTROL - APPLY HERBICIDE IN EARLY SUMMER WHEN THE KNAPWEED IS IN THE ROSETTE UP THROUGH BOLT STAGE. RESEED AREA WITH COMPETITIVE PERENNIAL SOD FORMING GRASS (INDICATE SPECIES). ANOTHER HERBICIDE TREATMENT WILL BE APPLIED THE FOLLOWING YEAR AS NEEDED TO PREVENT PLANTS FROM GOING TO SEED.

B. MECHANICAL AND CHEMICAL CONTROL - DURING THE GROWING SEASON, MULTIPLE MOWINGS OF THE KNAPWEED WILL BE MADE NO LATER THAN THE BUD STAGE TO PREVENT SEEDING. AN APPLICATION OF A HERBICIDE TO ANY PLANTS THAT HAVE RE-BOLTED WILL BE MADE IN THE FALL BEFORE A HARD FROST.

C. MECHANICAL CONTROL ONLY - MULTIPLE MOWINGS WILL BE CARRIED OUT THROUGHOUT THE SEASON TO PREVENT SEED SET.

D. CHEMICAL CONTROL ONLY - AN HERBICIDE APPLICATION WILL BE MADE DURING THE ROSETTE STAGE (SPRING AND FALL) AND WHILE BOLTING. THE HERBICIDES THAT CAN BE USED INDEPENDENTLY OR IN COMBINATION WITH OTHER HERBICIDES ON DIFFUSE AND SPOTTED KNAPWEED INCLUDE: CURTAIL, REDEEM R&P, CLARITY, TELAR, ROUNDUP PRO, AND 2,4-D. ALL LABEL DIRECTIONS MUST BE FOLLOWED.

LEAFY SPURGE

A. BIOLOGICAL AND CHEMICAL CONTROL - A COMBINATION OF GRAZING WITH SHEEP OR GOATS; OR THE RELEASE OF ONE OF THE *APTHOHA* FLEA BEETLE SPECIES WILL OCCUR DURING THE SPRING AND SUMMER. THIS WILL BE FOLLOWED UP BY THE APPLICATION OF A HERBICIDE IN THE FALL BEFORE A HARD FREEZE.

B. MECHANICAL AND CHEMICAL CONTROL - MULTIPLE MOWINGS WILL BE CARRIED OUT THROUGHOUT THE GROWING SEASON WITH THE FIRST MOWING CYCLE AT THE BUD STAGE. MOWING WILL STOP DURING LATE AUGUST FOLLOWED BY A HERBICIDE TREATMENT DURING LATE SEPTEMBER OR EARLY OCTOBER BEFORE A HARD FREEZE.

C. CHEMICAL CONTROL ONLY - A HERBICIDE WILL BE USED IN THE SPRING, EARLY SUMMER DURING THE TRUE FLOWER STAGE **AND** IN THE FALL JUST BEFORE A HARD FREEZE, IF NECESSARY. THE HERBICIDES THAT CAN BE USED INDEPENDENTLY OR IN COMBINATION WITH OTHER HERBICIDES ON LEAFY SPURGE INCLUDE: CLARITY, TORDON 22K, PLATEAU, ROUNDUP PRO, AND 2,4-D. ALL LABEL DIRECTIONS MUST BE FOLLOWED.

FIELD BINDWEED

A. CULTURAL AND CHEMICAL CONTROL - A HERBICIDE APPLICATION

USING SHORT RESIDUAL HERBICIDES WILL BE MADE. THIS WILL BE FOLLOWED BY A FALL RESEEDING PROGRAM WITH A COMPETITIVE SOD FORMING GRASS MIX. ADDITIONALLY, FERTILIZATION OR IRRIGATION WILL BE INSTITUTED TO STIMULATE GRASS GROWTH AND HEALTH.

B. CHEMICAL CONTROL ONLY - A HERBICIDE WILL BE USED DURING THE FLOWERING STAGE, TYPICALLY IN JUNE AND JULY, AND IN THE FALL JUST BEFORE A HARD FREEZE IF NECESSARY. THE HERBICIDES THAT CAN BE USED INDEPENDENTLY OR IN COMBINATION WITH OTHER HERBICIDES ON FIELD BINDWEED INCLUDE: CLARITY, TORDON 22K, ROUNDUP PRO, PARAMOUNT, AND 2,4-D. ALL LABEL DIRECTIONS MUST BE FOLLOWED.

DALMATIAN TOADFLAX

A. CULTURAL AND CHEMICAL CONTROL - A HERBICIDE APPLICATION USING A SHORT RESIDUAL HERBICIDE WILL BE MADE UP TO EARLY FLOWERING STAGE. THIS WILL BE FOLLOWED BY RESEEDING IN THE FALL WITH A COMPETITIVE SOD FORMING MIX OF GRASSES. ADDITIONALLY, FERTILIZATION OR IRRIGATION WILL BE INSTITUTED TO STIMULATE GRASS GROWTH AND HEALTH.

B. MECHANICAL AND CHEMICAL CONTROL - MULTIPLE MOWINGS WILL BE CARRIED OUT THROUGHOUT THE SUMMER WHEN DALMATIAN TOADFLAX IS IN THE BUD STAGE. A FALL HERBICIDE APPLICATION WILL BE MADE IN OCTOBER TO ANY BOLTED PLANTS, BEFORE A HARD FROST.

C. CHEMICAL CONTROL ONLY - A HERBICIDE TREATMENT WILL BE APPLIED UP TO THE EARLY FLOWERING STAGE. THIS WILL BE FOLLOWED UP WITH A FALL APPLICATION, IF NECESSARY. THE HERBICIDES THAT CAN BE USED INDEPENDENTLY OR IN COMBINATION WITH OTHER HERBICIDES ON DALMATIAN TOADFLAX INCLUDE: CLARITY, TORDON 22K, ROUNDUP PRO, OR 2,4-D. ALL LABEL DIRECTIONS MUST BE FOLLOWED.

PUNCTURE VINE

A. CULTURAL AND CHEMICAL CONTROL

B. MECHANICAL AND CHEMICAL CONTROL

C. CHEMICAL CONTROL ONLY - A HERBICIDE TREATMENT WILL BE APPLIED FROM SEEDLING STAGE THROUGH EARLY FLOWER. THIS WILL NEED TO BE REPEATED ANNUALLY FOR SEVERAL YEARS UNTIL THE SEED STOCK IS EXHAUSTED. THE HERBICIDES THAT CAN BE USED INDEPENDENTLY OR IN COMBINATION WITH OTHER HERBICIDES INCLUDE: CLARITY AND 2,4-D, WEEDMASTER, TORDON 22K, TELAR DF.

**APPENDIX C
LANDOWNER WEED MANAGEMENT PLAN
AND GUIDELINES FOR PREPARING PLAN**

GUIDELINES FOR NOXIOUS WEED MANAGEMENT PLANS

The following are general guidelines for landowners to follow in preparing a landowner weed management plan. Refer to Appendix A for general integrated weed management options for most of the weed species mandated for control in the municipal boundaries of Greeley. It is the landowner's responsibility to control the noxious weeds on the property as long as these weeds are present. This may mean multiple years of management efforts.

Location

1. Include name and address of owner/developer.
2. Provide street address and/or legal description of property and parcel number.

Description of land and current uses

Give a brief description of the land type such as pasture, crop land, residential/commercial landscaped area, wetland, wooded riparian area. Also provide current uses such as farming, grazing, landscape/open space, wildlife cover, idle ground, irrigation ditch, etc.

Future plans for the land

If you plan to continue with the same use or change in the near future, provide the use.

Description of weed infestation

The targeted weed species are listed on the Notice of Violation issued to you. Estimate the square footage or acreage or percent of property infested with the identified noxious weeds.

Management plan

Provide the techniques you plan to use for each weed species listed on the notice. Some integrated management options are provided in Appendix A of the City of Greeley Noxious Weed Management Plan. Be as specific as possible in describing your plan. Pick one type of control method for each weed species. This is what you will be implementing on a regular basis. Be sure it can be carried out. However, if the weed infested sites include different habitat types pick one type of control for each area. Indicate where the methods will be used. If possible, include the chemicals that will be applied and the grass species that will be used for reseeding when those methods are indicated.

SAMPLE
Landowner Noxious Weed Management Plan

1. Name Joe Landowner

Mailing Address 123 My Street

City, State, ZIP Anytown, CO 55555

Phone: (970) 555-1234 E-Mail: jlandowner@server.com

2. Address of site: 9876 Greeley Street

Legal Description: T1N R98W Sec 15 SE quarter

Parcel Number: 1098000099

3. Brief description of land and current use(s):

Pasture ground along the south side of the Greeley Loveland Canal.

The land is leased for livestock grazing from spring through fall.

4. Future plans for the land.

This property is being considered for residential development in the next one to two years.

5. Description of weed infestation. (Answer either B. or C.)

A. Weed Species	B. Sq. Ft/Acres Infested	C. Percent Infested
<u>Canada Thistle</u>	<u>35 acres</u>	
<u>Field Bindweed</u>	<u></u>	<u>20</u>

D. Specific location of infestation on property.

The Canada thistle is scattered in patches throughout the pasture and along the irrigation canal.

The field bindweed is all along the boundary fence on all four sides and in several patches in the pasture.

6. Management Plan

A. Techniques to be used to keep the noxious weeds from going to seed and reduce the infestation. Describe for each identified species. Attach additional pages if needed.

Canada thistle: mow at least once prior to flowering (late May - early June) and again as needed throughout the summer and then spray in the fall with a herbicide labeled for use in pastures, either Brand X at X quarts/acre or a tank mix of Brand Y and Z at X quarts each/acre. The thistle along the irrigation ditch will be sprayed in the fall after the water is no longer running in the ditch.

Field bindweed: The bindweed along the fence rows will be sprayed with Brand Q herbicide during the flowering stage in June/July and in the fall just before a hard freeze if needed. The bindweed in the pasture will be sprayed with Brand W herbicide at the recommended label rate and the pasture grass irrigated and fertilized to stimulate growth.

B. Implementation schedule of identified methods of control.

Canada thistle: mowing will occur no later than mid-June of each year, depending on the growth stage of the plants and throughout the summer as needed to keep the plants from going to flower. Spraying will occur in the fall of each year in late September or early October as weather dictates.

Field bindweed: Spraying will occur in June or July each year when the plants are flowering. The pasture will be irrigated during the summer months and fertilized in early fall to stimulate grass growth. If needed, bare spots will be reseeded with grass species appropriate for irrigated sites.

C. Anticipated duration of management plan (i.e. 1 year, 3 years, 5 years).

It is expected that this plan will need to be implemented for 3 to 5 years to eradicate or reduce the infestation.

I agree to follow this Noxious Weed Management Plan and acknowledge that failure to manage the noxious weeds on my property may result in fines and/or corrective action by the City of Greeley.

Landowner Signature:

Date:

Note: A copy of this plan should be provided to anyone who purchases or leases this property.

For Office Use Only:

Plan approved by:

Date:

LANDOWNER MANAGEMENT PLAN

1. Name:

Mailing Address:

City, State, ZIP:

Phone: _____ E-Mail:

2. Site Address:

Legal Description:

Parcel Number:

3. Brief Description of land and current use(s):

4. Future plans for the land:

5. Description of noxious weed infestation. (Answer either B or C)

A. Weed species

B. Acres/Sq. Ft. Infested

C. Percent Infested

_____	_____	_____
_____	_____	_____
_____	_____	_____

D. Specific location of infestation(s) on site (wetland, ditch, fence line, landscaped area, etc.)

6. Management Plan for site.

A. Methods to be used to keep the noxious weeds from going to seed that will also reduce amount of infestation. Describe for each identified species.

B. Implementation schedule of identified methods of control.

C. Anticipated duration of management plan (1 year, 3 years, 5 years).

I agree to follow this Noxious Weed Management Plan and acknowledge that failure to manage the noxious weeds on my property may result in fines and/or corrective actions by the City of Greeley.

Landowner Signature:

Date:

Note: A copy of this plan should be provided to anyone who purchases or leases this property.

For Office Use Only:

Plan Approved By:

Date:

Copy to: Property File: _____ Inspector: _____ Landowner: _____

**APPENDIX D
QUICK REFERENCE CHART**

The attached chart provides a guideline for the integrated management methods that may be the most appropriate for each designated noxious weed species. Specific information may be obtained from knowledgeable sources such as CSU Cooperative Extension agents and publications.

KEY TO QUICK REFERENCE CHART SYMBOLS

A=All Habitat Types

C=Cropland

D=Irrigation Ditch

I=Riparian

L=Lawn/Landscaped Areas

N=Non-cropland

O=Roadside

P=Pasture

R=Rangeland

U=Unimproved Sites/Wastelands

W=Wetland

X=No Habitat Listed

QUICK REFERENCE CHART

Species (read enclosed detailed information specific to each species.)	Location	Control Methods A combination(#) of methods generally provides the best control. Control may take several years of on-going efforts.			
Common/Scientific	Type of Area	Cultural	Mechanical	Chemical*	Biological
1. Canada Thistle/ <i>Cirsium arvense</i>	P,R,I,O,C,N,D	✓#	✓#	✓#	✓
2. Dalmatian Toadflax/ <i>Linaria genistifolia ssp. Dalmatica</i>	R			✓	
3. Diffuse Knapweed/ <i>Centaurea diffusa</i>	P,R,I,O,N,U	✓#	✓#	✓#	✓
4. Field Bindweed/ <i>Convolvulus arvensis</i>	P,R,O,C,N,L,U	✓	✓	✓	
5. Hoary Cress/ <i>Cardaria draba</i>	P,C,U			✓	
6. Jointed Goatgrass/ <i>Aegilops cylindrica</i>	C,O			✓	
7. Leafy Spurge/ <i>Euphorbia esula</i>	P,I,O,N,D	✓		✓	✓
8. Musk Thistle/ <i>Carduus nutans</i>	P,R,O,N,D	✓#	✓#	✓#	✓#
9. Puncture Vine/ <i>Tribulus terrestris</i>	P,C,O,L,U	✓	✓	✓	
10. Purple Loosestrife/ <i>Lythrum salicaria</i>	W,D			✓	
11. Russian Knapweed/ <i>Centaurea repens</i>	P,R,O,N	✓#	✓#	✓#	
12. RUSSIAN OLIVE/ <i>ELEAGNUS ANGUSTIFOLIA</i>	P,R,L,W		✓	✓	
13. Salt Cedar/Tamarack/ <i>Tamarix ramosissima</i>	I		✓#	✓#	
14. Sandbur/ <i>Cenchrus longispinus</i>	P,C,L,U	✓	✓	✓	
15. Scotch Thistle/ <i>Onopordum acanthium</i>	O,P,R,U	✓#	✓#	✓#	
16. Spotted Knapweed/ <i>Centaurea maculosa</i>	P,R,I,O	✓#	✓#	✓#	✓
17. Yellow Toadflax/ <i>Linaria vulgaris</i>	R,C,L,U	✓	✓	✓	

*Always use chemicals according to label directions including listed plants, types of areas, dilution and application rates, mixing, storing, and disposal. Follow all safety precautions.