

THE WOODS @ BUCK MOUNTAIN INVASIVE VEGETATION MANAGEMENT PLAN 2018

PREFACE

*I would like to thank the residents of “The Woods” at Buck Mountain subdivision for allowing the Huerfano\Custer County Noxious Weed Department to aid in their efforts to control noxious and invasive vegetation within the subdivision. Chris Eichman was very helpful in identifying areas and species of concern within the area, and provided valuable information as it relates to historic control efforts within the subdivision. The following management plan identifies three species of upmost concern found within the subdivision, and provides information related to noxious species that have the possibility of becoming established within the area. The six additional species included in this report were encountered during mapping operations that took place elsewhere in Custer County on August 11th, 2018, but not within the Buck Mountain subdivision. These six additional species have become well established in neighboring counties and have inflicted a significant toll on the native plant communities and agricultural lands of which they have invaded. They have been included in this report so that residents can monitor for their presence within the subdivision. The following control options are the recommended best management practices that are utilized by the Huerfano\Custer County Noxious Weed Department. The control options presented are not an exhaustive list of all possible control options; rather they provide guidance that utilizes mechanical, cultural, chemical and biological options that are the most economical and effective, and that have been proven effective in many areas\circumstances within the region. **Prior to any chemical application, READ THE LABEL! The herbicide product label should be read and understood in its entirety before the product is used. The label provided on the herbicide container is a legal document. Failure to follow all directions is a violation of federal and state law. The chemical application rates listed are for reference purposes only. The label affixed to the herbicide product will be the official designated source for application rates and proper usage and should be followed should they differ from the recommendations provided in this management plan.***

Sincerely,

The Huerfano\Custer Noxious Weed Department

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A. TREATMENT AREA CHARACTERISTICS\CONSIDERATIONS

- 1. Current\Future Land Use:** The current land type consists of residential properties, natural areas and premontane rangeland. The future land use is anticipated to be the same. The positive site characteristics identified include quality grazing land, fertile soils, and quality wildlife habitat. The negative site characteristics identified during the site evaluation include areas of disturbed soil along road shoulders that contain a number of invasive annual species.
- 2. Environmentally Sensitive Areas:** Areas considered environmentally sensitive include: active well heads, abandoned well heads, established desirable tree\brush species, garden areas, other areas known has having a high water table with permeable soils, areas of standing water, treatment areas with a steep gradient adjacent to streams or other bodies of water, and any treatment area within 300 feet of an occupied structure without prior notice of application given to the occupant. Notice should be given to beekeepers within the treatment area of scheduled herbicide applications. Plants in bloom should not be treated with herbicides. The herbicides recommended in this management plan are of relatively low toxicity to humans, animals, and insects when used as directed. See manufacturer provided MSDS for specific information.
- 3. Registry of Pesticide Sensitive Persons:** According to the 2018 Registry of Pesticide Sensitive Persons (updated annually) released March 12th, 2018; there are **NO** registrants within the treatment area or region.
- 4. Endangered and Threatened Species:** The treatment area is not considered critical habitat to any Federal endangered or threatened species as indicated by species distribution mapping provided by the United States Fish and Wildlife Service.

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Date of Review: 8-11-2018

Applicant Name: "The Woods" at Buck Mountain

Point of Contact: Chris Eichman

Property Address: See Below

LAT\LONG: N 38.228368, W -105.534917

Site Type(s): Pinion\Juniper, Rangeland, Mixed Coniferous Forest

Reviewed By: Charles Bryant-Huerfano\Custer County Noxious Weed Manager CDA License:
#3322

1. **Cheat Grass (Downy Brome)**

Type: Annual\Winter Annual

Origin: Asia\Europe

Class: C

Seed Life: Up to 5 years

Seeds per Acre: 70.8 Million

Seeds per Plant: Over 5,000

Reproduction: Seed only

Observed Within Subdivision: Yes

(a) Mechanical: Single plants or small patches can be hand pulled. Properly timed mowing can be an effective control option if performed prior to seed set. If mowed early in the season, plants are capable of regeneration and seed set. If mowing is performed after seed set in the shatter stage (seeds freely fall from plant on their own or with gentle agitation) viable seed can be spread. The ideal timing for mowing is when plants have formed seed heads and prior to drying out (shatter stage), usually late May through early June. When mowed at this stage, temperatures are generally increasing with the onset of summer, and plants have difficulty regenerating, and usually desiccate soon after mowing.

(b) Cultural: Avoid the transportation of viable seeds and by cleaning all machinery\equipment that enters the infested area and avoid the relocation of soils or plant materials from the infested area to un-infested areas. High intensity

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grazing can be an effective control option for early season growth, prior to seed head formation and the emergence of desirable grass species. Being that **cheat grass** is generally the first green vegetation to emerge in late winter\early spring; livestock will specifically target this new growth. When practicing high intensity grazing, livestock should be removed in advance of desirable grass establishment to avoid the creation of bare ground areas. Avoid allowing livestock to access infested areas after seed production to avoid the transportation of viable seed off site. Examine all hay for the presence of noxious weeds and be vigilant for the establishment of noxious weed species in areas where hay is stored\fed or otherwise broadcast.

(c) Chemical: Chemical controls should be performed on young, actively growing plants during the fall and spring months prior to seed head development. **Glyphosate** can be used when desirable grass varieties are dormant without causing injury. **Glyphosate** is a non-selective herbicide, meaning it will affect both grass and broadleaved species, and has no residual action. Use care to avoid off-target damage. **Glyphosate** formulations\concentrations vary greatly, so no specific application rates will be provided in this document. Refer to the manufacturer's label or contact the Huerfano\Custer County Noxious Weed Department for specific brand assistance. **Imazapic** (Common brand name Plateau) can be used as a preemergence or early post emergence herbicide. **Imazapic** has a long soil residual, so newly emerging cheat grass after the initial application will continue to be affected. The preferred method for application will be spot spraying and the limited broadcast application of **4-12 oz. of Plateau per acre mixed with a surfactant**. Read product label in its entirety prior to usage and follow all directions provided. A number of other herbicides are effective for cheat grass control, contact the Huerfano\Custer County Noxious Weed Department for more information.

(d) Biological: None approved for release.

2. Common Mullein

Type: Biennial

Origin: Introduced from Europe, native to Asia

Class: C

Seed Life: Over 80 years

Seed per Plant: 100,000

Reproduction: Seed only

Observed Within Subdivision: Yes

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- (a) **Mechanical:** Plants found in loose soils can be hand pulled, or bolting plants and rosettes can be severed 3-4 inches below the soil surface. Mowing can also be effective on larger, mature plants prior to seed set. Smaller plants in the rosette stage can be mowed; however mowing should be performed on a regular basis throughout the season due the potential of regeneration. Avoid soil disturbance, as this stimulates further recruitment. Dead seed bearing stalks should be removed and disposed of to prevent further establishment.
- (b) **Cultural:** Grazing is generally not effective due to the unpalatable nature of Common Mullein to livestock. Over-grazed areas favor the establishment of common Mullein, as well as other areas of disturbed soil. Avoid the transportation of viable seeds by cleaning all machinery\equipment that enters the infested area and avoid the relocation of soils or plant materials from the infested area to un-infested areas. Common Mullein is an ephemeral species; healthy native plant species often out compete Mullein by shading and usurping soil moisture necessary for establishment.
- (c) **Chemical:** The preferred method of chemical application will be spot spraying and limited broadcast application of *Milestone* and *2,4-D 4lb. Amine* herbicides with a surfactant. *Milestone* herbicide will be applied at the dosage of 7oz.\acre. *2,4-D 4lb. Amine* herbicide will be applied at the dosage of 3-4 pints\acre.
- (d) **Biological:** A curculionid weevil (*Gymnaetron tetrum*) specific to Common Mullein was accidentally released prior to 1937. The weevil targets the seed head, eliminating up to 50% of the seeds. Commercial\Governmental availability uncertain.

3. Russian Thistle (Tumble Weed)

Type: Summer annual

Origin: Eurasia

Class: Not a Colorado State list species

Seed Life: 2 years

Seeds per Plant: Over 200,000

Reproduction: Seed Only

Observed Within Subdivision: Yes

- (a) **Mechanical:** In small infestations, Russian thistle can be hand pulled or hoed just below ground level prior to seed set. Mowing can be effective on larger plants prior to flowering, and will limit regenerative capabilities, much like the mechanical approach for cheat grass. Mowing smaller, immature plants will create low growing,

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- to nearly ground level growth that can still produce viable seed, though not nearly as seed laden as unmitigated populations.
- (b) Cultural:** Livestock will graze smaller immature plants prior to development of the typical sharp, unpalatable physical nature of mature plants. Russian thistle does not compete well with other forms of vegetation. The establishment of dense desirable vegetation will preclude the growth and further recruitment of Russian thistle. Monitor areas downwind of known populations that have obstructions such as fences, ditches and dense stands of low growing brush. These areas tend to collect seed bearing plant debris that utilizes wind for offsite transportation. Russian thistle tends to be more prolific in dry years, when other forms of vegetation are suppressed.
- (c) Chemical:** *2,4-D 4lb. Amine* herbicide at an application rate of 3-4 pints\acre with a surfactant will provide an economical and effective control against smaller immature plants. **Imazapic**, the active ingredient in *Plateau* herbicide (recommended for cheat grass in section #1) will provide preemergence control. Being that many of the areas containing cheat grass also contain Russian thistle, dual control of both species with *Plateau* herbicide is possible if applications are properly timed. The application rate of **8-12 oz.\acre** of *Plateau* is recommended.
- (d) Biological:** While available, control performance has been poor and is not recommended in this management plan.

4. Canada Thistle

Type: Perennial

Origin: Europe

Class: B

Seed Life: Over 20 years

Seeds per Plant: Up to 5,000

Reproduction: Seed and Spreading Root

Observed Within Subdivision: No, widespread in other areas of Custer County

- (e) Mechanical:** Given the aggressive perennial growth habits\characteristics of Canada thistle, mechanical control is not recommended.
- (f) Cultural:** Avoid the transportation of viable seeds and plant fragments capable of regeneration by cleaning all machinery\equipment that enters the infested area and avoid the relocation of soils or plant materials from the infested area to un-infested areas. Avoid allowing livestock to access the infested areas. Examine all hay for the

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- presence of noxious weeds and be vigilant for the establishment of noxious weed species in areas where hay is stored\fed or otherwise broadcast.
- (g) **Chemical:** The preferred method of chemical application will be spot spraying and limited broadcast application of **Milestone** and **2,4-D 4lb. Amine** herbicides with a surfactant. **Milestone** herbicide will be applied at the dosage of 7oz.\acre. **2,4-D 4lb. Amine** herbicide will be applied at the dosage of 3-4 pints\acre.
- (h) **Biological:** Canada thistle Rust Fungus *Puccinia Punctiformis*. Not employed in this cycle. Consult the Huerfano County Weed Manager for further information.

5. **Musk Thistle**

Type: Biennial

Origin: Europe and Asia

Class: B

Seed Life: Up to 10 years

Seeds per Plant: Up to 120,000

Reproduction: Seed

Observed Within Subdivision: *No *Found at subdivision entrance, south of Blue Grouse Road. Widespread in other areas of Custer County.

- (a) **Mechanical:** Given the biennial growth habits\characteristics of musk thistle, mechanical controls can be effective in the prevention of seed development. Control options include severing the stalk 3-4 inches under the soil, hand pulling, and mowing prior to bloom. Mechanical controls should be performed frequently to have any effect. Overall growth habits are similar to Scotch thistle. Livestock will consume small immature plants.
- (b) **Cultural:** Avoid the transportation of viable seeds by cleaning all machinery\equipment and clothing that enters the infested area and avoid the relocation of soils or plant materials from the infested area to un-infested areas. Avoid allowing livestock to access the infested areas. Examine all hay for the presence of noxious weeds and be vigilant for the establishment of noxious weed species in areas where hay is stored\fed or otherwise broadcast.
- (c) **Chemical:** The preferred method of chemical application will be spot spraying and limited broadcast application of **Milestone** and **2,4-D 4lb. Amine** herbicides with a surfactant. **Milestone** herbicide will be applied at the dosage of 7oz.\acre. **2,4-D 4lb. Amine** herbicide will be applied at the dosage of 3-4 pints\acre. Apply at the rosette to mid-bolt stages when plants are actively growing.

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(d) **Biological:** Thistle head weevil *Rhinocyllus conicus*. Crown weevil *Trichosirocalus horridus*. Thistle crown fly *Cheilisia corydon*. Not employed in this cycle.

6. **Houndstoung**

Type: Biennial

Origin: Europe and Asia

Class: B

Seed Life: 2-3 years

Seed per Plant: 2,000

Reproduction: Seed

Observed Within Subdivision: No, widespread in other areas of Custer County.

(a) **Mechanical:** Given the biennial growth habits\characteristics of Houndstoung, mechanical controls can be effective in the prevention of seed development. Control options include severing the stalk 3-4 inches under the soil, hand pulling, and mowing prior to bloom. Mechanical controls should be performed frequently to have any effect.

(b) **Cultural:** Avoid the transportation of viable seeds by cleaning all machinery\equipment and clothing that enters the infested area and avoid the relocation of soils or plant materials from the infested area to un-infested areas. Avoid allowing livestock to access the infested areas. Examine all hay for the presence of noxious weeds and be vigilant for the establishment of noxious weed species in areas where hay is stored\fed or otherwise broadcast. Grazing is not recommended given the highly poisonous nature of Houndstoung.

(c) **Chemical:** The preferred method of chemical application will be spot spraying and limited broadcast application of **Milestone** and **2,4-D 4lb. Amine** herbicides with a surfactant. **Milestone** herbicide will be applied at the dosage of 7oz.\acre. **2,4-D 4lb. Amine** herbicide will be applied at the dosage of 3-4 pints\acre. Apply at the rosette to mid-bolt stages when plants are actively growing.

(d) **Biological:** None approved for release.

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7. Russian Knapweed

Type: Perennial

Origin: Europe\Asia

Class: B

Seed Life: 3-5 years

Seeds per Plant: 1,200

Reproduction: seed\extensive creeping root

Observed Within Subdivision: No

(a) Mechanical: Given the aggressive perennial growth habits\characteristics of Russian Knapweed, mechanical control is not recommended.

(b) Cultural: Avoid the transportation of viable seeds and plant fragments capable of regeneration (especially roots) by cleaning all machinery\equipment that enters the infested area and avoid the relocation of soils or plant materials from the infested area to un-infested areas. Avoid allowing livestock to access the infested areas. Russian knapweed is very toxic to horses. Examine all hay for the presence of noxious weeds and be vigilant for the establishment of noxious weed species in areas where hay is stored\fed or otherwise broadcast.

(c) Chemical: The preferred method of chemical application will be spot spraying and limited broadcast application of *Opensight (a.i.: metsulfuron methyl, aminopyralid)* and *2,4-D 4lb. Amine* herbicides with a surfactant. *Opensight* herbicide will be applied at the dosage of 3oz.\acre. *2,4-D 4lb. Amine* herbicide will be applied at the dosage of 3-4 pints\acre. Applications should be made prior to bloom, or in the fall through winter to the root crown.

(d) Biological: Not employed in this cycle.

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8. Diffuse Knapweed

Type: Biennial

Origin: Eurasia

Class: B

Seed Life: 2-7 years

Seeds per Plant: 18,000-25,000

Reproduction: Seed Only

Observed Within Subdivision: No, widespread in other areas of Custer County.

(a) **Mechanical:** Given the biennial growth habits\characteristics of Diffuse Knapweed, mechanical controls can be effective in the prevention of seed development. Control options include severing the stalk 3-4 inches under the soil, hand pulling, and mowing prior to bloom. Mechanical controls should be performed frequently to have any effect.

(b) **Cultural:** Avoid the transportation of viable seeds by cleaning all machinery\equipment and clothing that enters the infested area and avoid the relocation of soils or plant materials from the infested area to un-infested areas. Avoid allowing livestock to access the infested areas. Examine all hay for the presence of noxious weeds and be vigilant for the establishment of noxious weed species in areas where hay is stored\fed or otherwise broadcast. Grazing is not recommended.

(c) **Chemical:** The preferred method of chemical application will be spot spraying and limited broadcast application of *Milestone* and *2,4-D 4lb. Amine* herbicides with a surfactant. *Milestone* herbicide will be applied at the dosage of 7oz.\acre. *2,4-D 4lb. Amine* herbicide will be applied at the dosage of 3-4 pints\acre. Apply at the rosette to mid-bolt stages when plants are actively growing.

(d) **Biological:** None approved for release.

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9. **Spotted Knapweed**

Type: Biennial

Origin: Eurasia

Class: B

Seed Life: 3-5 years

Seed Production: 140,000 per square meter

Reproduction: Seed

Observed Within Subdivision: No, widespread in other areas of Custer County.

- (a) **Mechanical:** Given the biennial growth habits\characteristics of Spotted Knapweed, mechanical controls can be effective in the prevention of seed development. Control options include severing the stalk 3-4 inches under the soil, hand pulling, and mowing prior to bloom. Mechanical controls should be performed frequently to have any effect.
- (b) **Cultural:** Avoid the transportation of viable seeds by cleaning all machinery\equipment and clothing that enters the infested area and avoid the relocation of soils or plant materials from the infested area to un-infested areas. Avoid allowing livestock to access the infested areas. Examine all hay for the presence of noxious weeds and be vigilant for the establishment of noxious weed species in areas where hay is stored\fed or otherwise broadcast. Grazing is not recommended.
- (c) **Chemical:** The preferred method of chemical application will be spot spraying and limited broadcast application of **Milestone** and **2,4-D 4lb. Amine** herbicides with a surfactant. **Milestone** herbicide will be applied at the dosage of 7oz.\acre. **2,4-D 4lb. Amine** herbicide will be applied at the dosage of 3-4 pints\acre. Apply at the rosette to mid-bolt stages when plants are actively growing.
- (d) **Biological:** None approved for release.

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Overview of Control Options

MECHANICAL: This control option is most effective on annual and biennial species but should generally be avoided on the perennial targeted species listed above. Soil disturbance\bare ground areas as a result of mechanical controls should be avoided due to the possibility of noxious weed establishment.

CULTURAL: Prevention and good land use practices are key components of this control option. Avoid the use of contaminated feed, overgrazing, soil disturbance and introduction of noxious weed seeds\plant fragments. The establishment of desirable plant competition is also a key component.

CHEMICAL: In this vegetation management situation, the application of herbicides in combination with the other methods listed above will prove to be an effective means of achieving the containment and suppression of the targeted species. The chemical application rates listed above are for reference purposes only. The label affixed to the herbicide product will be the official designated source for application rates and proper usage and should be followed should they differ from the recommendations provided in this management plan. **The label provided on the herbicide container is a legal document. Failure to follow all directions is a violation of federal and state law.**

BIOLOGICAL: Biological controls will not be utilized in this management program. Should there be dense stands of Canada thistle encountered in environmentally sensitive areas, consult the Huerfano County Noxious Weed Manager to assess whether a release of the Canada thistle rust fungus *Puccinia Punctiformis* is possible. Note: Rust fungus release is only effective in the fall season, prior to the first hard frost and subject to inoculant availability.

INTEGRATED VEGETATION MANAGEMENT

Integrated vegetation management (IVM) is the practice of employing multiple control options to achieve control of a target plant species. Seldom does a singular approach totally control noxious weed infestations. Prevention, early detection, and rapid response are the foundation of a successful management program. The individual control recommendations given for the **six** eligible noxious weed species will conform to integrated vegetation management principals when used in combination with each other.

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B. SAFETY RECOMMENDATIONS FOR CHEMICAL APPLICATIONS

The following is a brief list of recommended safety practices for the safe application of herbicides. This is by no means an exhaustive list; the herbicide container labeling should be referred to for specific usage\safety guidelines.

- 1) Read the Label!** The herbicide product label should be read and understood in its entirety before the product is used. ***The label provided on the herbicide container is a legal document. Failure to follow all directions is a violation of federal and state law.***

- 2) Proper PPE (personal protective equipment):** Adhere to the herbicide manufacturers recommendations for proper protective equipment. The recommended PPE for the herbicides prescribed within this management plan require a minimum of: Long sleeved shirt and pants, chemical resistant category A gloves, *shoes plus socks*, and protective eyewear. **Rubber “muck” style boots or the like are suggested given the relative ease of cleaning\removal. Lightweight coveralls are also suggested for these same reasons. Refer to herbicide label(s) for safety guidelines.*

- 3) Equipment calibration:** Ensure proper calibration of equipment to avoid over\unders application of herbicide. ***Contact the Huerfano County Noxious Weed Department if assistance is needed.***

- 4) Environmental Considerations:** Avoid herbicide drift and off target damage by only applying in low wind conditions (10mph or less) and using the coarsest practical spray droplet size at the lowest practical pressure. Apply as near to the target as possible. The use of a surfactant\adjuvant also aids in off target movement of the herbicide. Applications should not be made within 6-8 hours of expected rainfall. When spraying around trees, do not apply herbicide within the “drip line” of the tree canopy. Proper equipment calibration is necessary to avoid the over\unders application of herbicides and the associated negative environmental effects. Periods of abnormally hot and dry weather may affect the performance of herbicides negatively.

- 5) Container Disposal:** Triple wash all empty herbicide containers to aid in the removal of residues and puncture so that they cannot be reused. Combine the rinsate of the empty container to the application equipments’ tank and apply on treatment area(s). Triple washed containers that are punctured can be safely disposed of with household trash. Never reuse empty herbicide containers.

- 6) Herbicide Storage:** Do not contaminate water, food, or feed by storage or disposal. Do not ship or store with food, feeds, drugs, or clothing. Avoid freezing.

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Contact the Huerfano County Noxious Weed Department if you have any questions.

HUERFANO\CUSTER COUNTY NOXIOUS WEED DEPARTMENT CONTACT:
CHARLES BRYANT @ 719-989-1353, cbryant@huerfano.us

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