NOXIOUS WEED MANAGEMENT PLAN

for

The Markets at Bent Grass
El Paso County, CO

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EXECUTIVE SUMMARY

Bristlecone Ecology, LLC ("B.E.") was retained by Evergreen Devco, Inc. ("Proponent") to prepare a Noxious Weed Management Plan ("Plan") for the proposed The Markets at Bent Grass commercial development ("Project"), located in unincorporated El Paso County (EPC), Colorado.

This Plan is a project-specific document that has been designed to set forth project-level regulations to prevent and control the spread of noxious weeds within the Project area and vicinity. Noxious weeds are defined as those non-native plants that aggressively invade and are detrimental to native vegetation communities and ecosystems. The *Colorado State Noxious Weed Act* (Colorado Revised Statute 35-5.5-103) developed a list of plants considered noxious in the state of Colorado that should be targeted for control by various methods dependent on list category (A, B, or C). This Plan is to align with the requirements set forth by the EPC Noxious Weed Management Plan (2017a), which contains guidelines for the control and treatment of noxious weeds found in the County. EPC requires that residential projects which include ground disturbing activities must submit a Project-specific noxious weed management plan. This Plan provides methods to prevent and control the spread of noxious weeds at construction and post-construction phases of the Project.

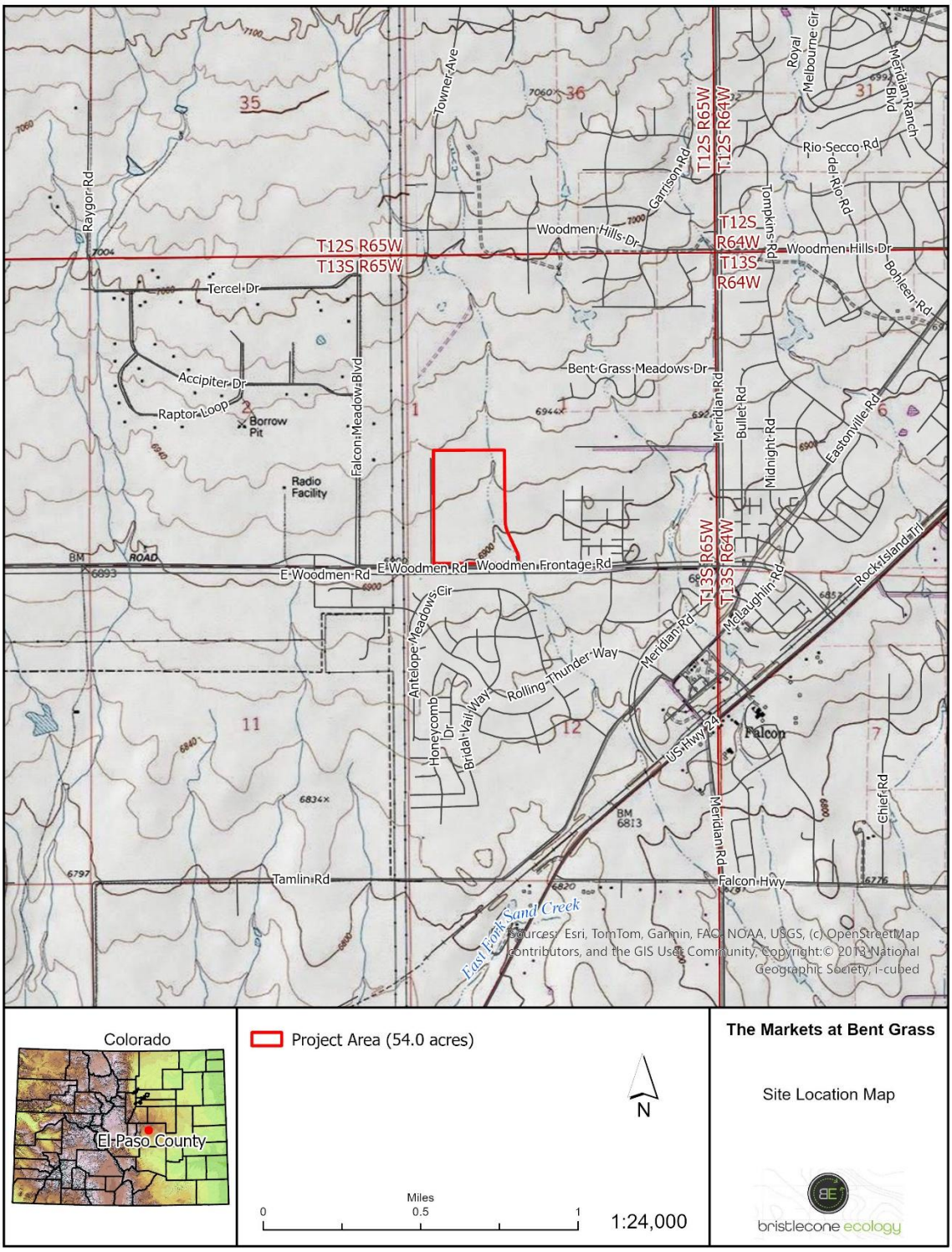
B.E. surveyed the site to look for noxious weeds on February 18th, 2026. Some noxious weeds are present on the site, with mostly widespread but sparse distribution and a few concentrations around disturbed areas. Common mullein (*Verbascum thapsus*), a List C noxious weed, is sparse but widespread throughout the site. Diffuse knapweed (*Centaurea diffusa*), a List B species, is also present mostly concentrated around previously disturbed areas. The site generally contains limited populations of noxious weeds, and treatment of the few weeds that are present should be effective via hand pulling or limited chemical treatment. Recommendations for chemical treatments can be found at the links in the References section. There may be additional noxious weeds present on the site, and a full site inventory during the growing season would be needed to catalog all populations prior to construction.

1.0 INTRODUCTION AND PROJECT LOCATION

Evergreen Devco, Inc. ("Proponent") retained Bristlecone Ecology, LLC ("B.E.") to prepare a Noxious Weed Management Plan ("Plan") for the proposed The Markets at Bent Grass commercial development ("Project"), located in unincorporated El Paso County (EPC), Colorado. The Project is located north of East Woodmen Road, east of Falcon Meadow Boulevard, and south of Woodmen Hills Drive in the southwest quarter of Section 1, Township 13 South, and Range 65 West. The Project can be found on the U.S. Geological Survey's (USGS) Falcon 7.5-minute quadrangle (USGS 2023; **Figure 1**: *Site Location Map*). Elevations within the Project Area range between approximately 6,890 and 6,930 feet above mean sea level (AMSL).

The Project area is located within the Foothill Grasslands Level IV ecoregion in Colorado (Chapman *et al*. 2006). The Foothill Grasslands Ecoregion is composed of a mixture of tall- and mid-grass prairies and isolated pine woodlands (Chapman et al. 2006). Dominant species in the ecoregion include little bluestem (*Schizachyrium scoparium*), big bluestem (*Andropogon gerardii*), blue grama (*Bouteloua gracilis*), switchgrass (*Panicum virgatum*), and yellow Indiangrass (*Sorghastrum nutans*) (Chapman et al. 2006). Vegetation typical of grasslands within the Foothill Grasslands ecoregion predominates within the site. Buffalograss (*Bouteloua dactyloides*), blue grama, switchgrass, purple threeawn (*Aristida purpurea*), and little bluestem are the dominant species in uplands throughout the site. Other upland species present include common mullein (*Verbascum thapsus*), horseweed (*Erigeron canadensis*), Canada wild rye (*Elymus canadensis*), hairy false goldenaster (*Heterothica villosa*), and Canada thistle (*Cirsium arvense*), among others. There are also wetland areas dominated by sandbar willow (*Salix exigua*) and Baltic rush (*Juncus balticus*). The majority of the site is moderately-to-highly disturbed and composed of short- and mid-grass rolling grasslands with limited wetland areas. Diversity is moderate for this ecoregion, and the structure of vegetation in the uplands is graminoid-dominated and structurally only moderately developed.

Figure 1: Site Location Map



2.0 NOXIOUS WEED MANAGEMENT BACKGROUND

The spread of invasive species roughly mirrors the rise in human travel and commerce (Mack *et al.* 2000 and Sheley *et al.* 1996). Many noxious weeds have been identified as aggressive, weather resistant escaped ornamentals from residential landscapes (Westbrooks 1998). *The Federal Noxious Weed Act* (7 U.S.C. 2801 et seq.; 88 Stat. 2148) was enacted in 1975 in an effort to halt the spread of noxious weeds across the country. Following guidelines set forth by the *Federal Noxious Weed Act*, Colorado passed the *Colorado Noxious Weed Act* ("Act"; C.R.S. 35-5.5-103) in 1990. The Act identified noxious weeds particular to the landscape of Colorado. As defined in the Act, noxious weeds are any non-native plant that:

- aggressively invades or is detrimental to economic crops or native plant communities;
- is poisonous to livestock;
- is a carrier of detrimental insects, diseases, or parasites;
- or is detrimental, either by direct or indirect effects, to the environmentally sound management of natural or agricultural ecosystems.

The Act was amended in 2002 to require counties to establish individual management plans relevant to local municipalities. EPC developed the *El Paso County Noxious Weed Management Plan* in 2003 (updated in 2017) to identify county-level noxious weed management practices that would preserve the economic and environmental value of EPC lands (EPC 2017a). Disturbed areas are vulnerable to infestation from noxious weeds due to the aggressive nature by which noxious weeds can spread. Construction activities including clearing, grading, and excavation allow for the establishment of noxious weed species before native vegetation can reestablish within the cleared area. As such, the *EPC Noxious Weed Management Plan* requires integrated management plans for any activities requiring dirt moving activities within El Paso County (EPC 2017a). Project-specific integrated management plans should include methods to prevent, control, and monitor the spread of noxious weeds and should take into account the multiple methods by which noxious weeds germinate. Annuals typically reproduce through seed which can easily attach to equipment during construction activities. Perennials often propagate through an extensive root system. Ground disturbing activities have the potential to redistribute root sections that could quickly propagate in other areas. Because of the multiple methods by which noxious weeds spread and propagate, integrated management plans should outline education and native revegetation methods, in addition to chemical control methods (EPC 2017a).

3.0 NOXIOUS WEED MANAGEMENT PLAN

3.1 Purpose and Goals

The construction of the Project is likely to take place over several months. Upon completion, the Project will consist of 14 total commercial lots, and approximately half the site is dedicated as paved areas for parking. It is anticipated that noxious weeds will concentrate along disturbed edges, any temporary construction staging areas, and other highly trafficked areas within the site. As such, this integrated management plan includes construction and maintenance methods to prevent, control, and monitor the spread of identified noxious weed populations within the Project. It will be the responsibility of the property owner to prevent and control the spread of noxious weeds. Typically, a property owner or other responsible party may contract a licensed herbicide applicator to seasonally survey and spray for noxious weeds throughout their property as necessary. Integrated management methods shall include the following:

- surveys to inventory and map established noxious weed populations;
- sharing of data with EPC to aid in EPC level inventory;
- physical, biological, and or chemical treatment of all identified noxious weed populations;
- and periodic post-construction treatment as needed, implemented by the landowner or other responsible entity.

Management methods identified within this Plan will comply with *Chapter 6: General Development Standards of the EPC Land Development Code* (EPC 2017b), the *EPC Noxious Weed Management Plan* (EPC 2017a) and the Act (Colorado Revised Statutes 35-5.5-103). Biological control methods are not included due to the prohibition of their use on plants targeted for eradication by the Colorado Weed Management Association (CWMA) (2015). Noxious weed species targeted would be those identified in the Act, with special consideration for those species listed in the *EPC Noxious Weeds and Control Methods* (EPC 2018).

3.2 Regulated Species

The Act identifies three levels of priority for control of noxious weeds throughout the State of Colorado ("State"). The CWMA maintains an updated list of noxious weeds known to occur in the State. CWMA also maintains a "watch list" of noxious weeds that occur in proximity to State borders and/or those species with a distribution that is not yet understood (**Appendix A**: *Colorado State Noxious Weed List*). List A noxious weeds are those species targeted for eradication. List A noxious weed populations are typically isolated in nature or rare throughout much of the State (*Colorado Revised Statutes 35-5.5-103*). Eradication and reporting of List A populations is required by law (Colorado Department of Agriculture [CDA] 2006). List B species are discretely distributed throughout the State and must be eradicated, contained, or suppressed (*Colorado Revised Statutes 35-5.5-103*). EPC requires control of all List B noxious weed populations located within the Project area (EPC 2017a). List C noxious weed populations are widespread and well established. EPC requires control of List C species through education of the public and/or chemical control (EPC 2017a).

3.3 Construction

Noxious weed management protocols during construction include prevention and treatment. Prevention and treatment will be executed during construction of the Project through surveys of construction footprints, followed by primarily mechanical and/or chemical treatments. An initial inventory survey has been conducted but no treatment has occurred.

Noxious weed surveys are to be conducted by a qualified ecologist within all construction easements and footprints prior to any ground disturbing activities, leveraging GPS units to collect data on noxious weed populations. Data collected for List C populations is to include species and general coordinates of population; data collected for List A and List B populations will include species, coordinates for the approximate center of each identified population, and the approximate radius of the infestation. EPC will receive a map of identified noxious weed populations within the Project. Should surveyors locate List A species, the specific data collected will be formally communicated to EPC. Treatment type is to be selected depending on the priority rank of the noxious weed species (List A, B, or C), and the location and density of the infestation. Chemical treatment protocols for herbicide application are described below.

List A species must be eradicated by law (USDA 2006). Should surveyors identify List A species, a plant sample is to be collected for positive identification through EPC's Environmental Division. Upon positive confirmation of a List A species, hand pulling of the population shall be performed to remove the mechanism for creation of a seedbank. Chemical treatment is to be applied to the area and will be selected in compliance with the *EPC Noxious Weeds and Control Methods* (EPC 2018). List B species shall either be mechanically treated (i.e. hand pulled) or chemically treated with an herbicide selected in compliance with the *EPC Noxious Weeds and Control Methods* (EPC 2018). Herbicide selection may vary depending upon the time of year and the life cycle of the plant. All herbicides are to be applied concurrently with initial ground disturbing activities. The herbicide applicator will treat noxious weed populations with EPC recommended chemicals (EPC 2017a). B.E. recommends not treating List C noxious weeds; List C noxious weeds are well established and difficult to treat since many have hardy seed beds that are not affected by herbicide application. Rather than completely eradicating List C populations, herbicide applicators manage populations with continued seasonal treatments. A more efficient protocol would be to avoid List C weeds to the greatest extent possible during construction to minimize potentially spreading their seeds. It is anticipated that the property owner will treat all noxious or weedy species within development areas post-construction, including List C species, and will maintain a weed-free landscape within the boundaries of the Project after construction.

Additional construction-phase noxious weed management protocols will include prevention and maintenance. Contractors are to prevent the spread of noxious weeds through the use of clean equipment and thorough treatment of all List A and List B populations concurrent with initial ground disturbing activities. Heavy equipment used on the site is to be washed and sprayed before mobilization on the Project. Doing so helps ensure that soil and seeds are not transported from other sites. Noxious weed treatment is to occur in areas slated for ground disturbance or immediately after initial ground disturbance activities. Doing so will ensure that active List A and

List B noxious weed populations will become inactive and/or effectively managed throughout the construction phase of the Project.

It is anticipated that portions of the Project will be landscaped. Topsoil sources for landscaped areas shall be provided from native, on-site topsoil. Any salvaged topsoil piles shall be treated for noxious weeds and maintained and protected from erosion and/or noxious weed establishment during construction through Best Management Practices (BMPs) as identified in the Project's Grading, Erosion, and Sediment Control (GESC) Plan.

3.5 Post-Construction

Post-construction noxious weed management protocols will be limited to maintenance treatment, as needed and as determined by the property owner as the responsible entity. It is anticipated that any landscaped areas of the Project will require seasonal noxious weed treatment and maintenance. B.E. notes that any existing List A and List B noxious weed populations should be treated concurrently with construction. Treatment of the site concurrent with initial ground disturbing activities may halt the spread of List A and List B noxious weeds in the immediate vicinity of the Project. However, noxious weed populations may persist on the Project's periphery. It will be the controlling entity's responsibility to identify and treat any persistent noxious weed populations on the Project site if encroachment continues due to the regression of periphery populations.

4.0 CONCLUSIONS AND RECOMMENDATIONS

Some noxious weeds are present on the Project site, mostly as widespread but sparse populations. Small concentrations of knapweed were present near disturbed areas on both the south and east sides of the site. Noxious weeds that were detected during the site reconnaissance included:

List B

- Diffuse knapweed

List C

- Common mullein

There were no large concentrations of noxious weeds, but a few concentrations and more widely distributed scatterings of noxious weeds were found throughout various portions of the site (**Appendix B:** *Noxious Weed Distribution Map*). Common mullein was the most prominent noxious weed present, with a widespread but sparse distribution throughout the property (**Appendix B**). Diffuse knapweed was observed to be concentrated mainly along the east side of the property and anywhere prior ground disturbance had occurred (**Appendix B**). The El Paso County Community Service Department's Environmental Division recommends herbicide application or mechanical removal for all of these species and provides detailed application rates and timing (EPC 2018). Herbicide recommendations can be found at the links provided in the References section below. Based on the distribution patterns of weeds throughout the site, B.E. recommends treating mullein by mechanical means (hand pulling) in the spring before new seeds drop, and treating knapweed chemically following EPC recommendations (EPC 2018).

It is possible that additional noxious weed populations may be present on the site. As such, EPC may recommend a further site inventory be performed to catalogue and map all populations on the site prior to construction. Controls for any List A or List B species identified within the Project area would be required following the management plan outlined here and EPC's recommended control methods (EPC 2018).

This Noxious Weed Management Plan was written to comply with guidelines in the Colorado Noxious Weed Act (Colorado Revised Statutes 35-5.5-103) and the EPC Noxious Weed Management Plan. B.E. recommends that the Proponent treat any List A and List B noxious weed populations observed within the Project area. Surveys and treatment can be performed prior to construction. Typically, mechanical treatment can occur at any time, while chemical treatment is applied between late spring and early fall depending on the recommended treatment protocols for each species (EPC 2018).

Should you have any questions regarding this or any other matter, please feel free to contact our office at dmaynard@bristleconeecology.com.

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APPENDIX A

COLORADO STATE NOXIOUS WEED LIST

Colorado Noxious Weeds (including Watch List), effective May, 2023

List A Species (26)

Common	***Scientific***
African rue	*(Peganum harmala)*
Bohemian knotweed	*(Fallopia x bohemicum)*
Camelthorn	*(Alhagi maurorum)*
Common crupina	*(Crupina vulgaris)*
Cypress spurge	*(Euphorbia cyparissias)*
Dyer's woad	*(Isatis tinctoria)*
Elongated mustard	*(Brassica elongata)*
Flowering rush	*(Butomus umbellatus)*
Giant knotweed	*(Fallopia sachalinensis)*
Giant reed	*(Arundo donax)*
Giant salvinia	*(Salvinia molesta)*
Hairy willow-herb	*(Epilobium hirsutum)*
Hydrilla	*(Hydrilla verticillata)*
Japanese knotweed	*(Fallopia japonica)*
Meadow knapweed	*(Centaurea x moncktonii)*
Mediterranean sage	*(Salvia aethiopis)*
Medusahead	*(Taeniatherum caput-medusae)*
Myrtle spurge	*(Euphorbia myrsinites)*
Orange hawkweed	*(Hieracium aurantiacum)*
Parrotfeather	*(Myriophyllum aquaticum)*
Purple loosestrife	*(Lythrum salicaria)*
Rush skeletonweed	*(Chondrilla juncea)*
Squarrose knapweed	*(Centaurea virgata)*
Tansy ragwort	*(Senecio jacobaea)*
Yellow starthistle	*(Centaurea solstitialis)*
Yellow flag iris	*(Iris pseudacorus)*

List B Species (38)

Common	***Scientific***
Absinth wormwood	*(Artemisia absinthium)*
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	*(Dipsacus fullonum)*
Cutleaf teasel	*(Dipsacus laciniatus)*
Dalmatian toadflax, broad-leaved	*(Linaria dalmatica)*
Dalmatian toadflax, narrow-leaved	*(Linaria genistifolia)*
Dame's rocket	*(Hesperis matronalis)*
Diffuse knapweed	*(Centaurea diffusa)*
Eurasian watermilfoil	*(Myriophyllum spicatum)*
Hoary cress	*(Lepidium draba)*
Houndstongue	*(Cynoglossum officinale)*
Jointed goatgrass	*(Aegilops cylindrica)*

List B Species Continued (38)

Common	***Scientific***
Leafy spurge	*(Euphorbia esula)*
Mayweed chamomile	*(Anthemis cotula)*
Moth mullein	*(Verbascum blattaria)*
Musk thistle	*(Carduus nutans)*
Oxeye daisy	*(Leucanthemum vulgare)*
Perennial pepperweed	*(Lepidium latifolium)*
Plumeless thistle	*(Carduus acanthoides)*
Russian knapweed	*(Rhaponticum repens)*
Russian-olive	*(Elaeagnus angustifolia)*
Salt cedar	*(Tamarix. ramosissima)*
Salt cedar	*(T. chinensis)*
Scentless chamomile	*(Tripleurospermum inodorum)*
Scotch thistle	*(Onopordum acanthium)*
Scotch thistle	*(O. tauricum)*
Spotted knapweed	*(Centaurea stoebe ssp. micranthos)*
Spotted x diffuse knapweed hybrid	*(Centaurea x psammogena)*
Sulfur cinquefoil	*(Potentilla recta)*
Wild caraway	*(Carum carvi)*
Yellow nutsedge	*(Cyperus esculentus)*
Yellow toadflax	*(Linaria vulgaris)*
Yellow x Dalmatian toadflax hybrid	*(Linaria vulgaris x L. dalmatica)*

List C Species (18)

Common	***Scientific***
Bulbous bluegrass	*(Poa bulbosa)*
Chicory	*(Cichorium intybus)*
Common burdock	*(Arctium minus)*
Common mullein	*(Verbascum thapsus)*
Common St. Johnswort	*(Hypericum perforatum)*
Downy brome, cheatgrass	*(Bromus tectorum)*
Field bindweed	*(Convolvulus arvensis)*
Halogeton	*(Halogeton glomeratus)*
Johnsongrass	*(Sorghum halepense)*
Perennial sowthistle	*(Sonchus arvensis)*
Poison hemlock	*(Conium maculatum)*
Puncturevine	*(Tribulus terrestris)*
Quackgrass	*(Elymus repens)*
Redstem filaree	*(Erodium cicutarium)*
Siberian elm	*(Ulmus pumila)*
Tree of Heaven	*(Ailanthus altissima)*
Velvetleaf	*(Abutilon theophrasti)*
Wild proso millet	*(Panicum miliaceum)*

Colorado Noxious Weeds (including Watch List), effective May, 2023

Watch List Species (19)

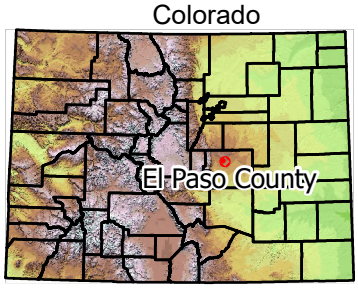
These species are not regulated by the Noxious Weed Act/Rule.

Common	***Scientific***
Baby's breath	*(Gypsophila paniculata)*
Caucasian bluestem	*(Bothriochloa bladhii)*
Common bugloss	*(Anchusa officinalis)*
Common reed	*(Phragmites australis)*
Garden loosestrife	*(Lysimachia vulgaris)*
Garlic mustard	*(Alliaria petiolata)*
Himalayan blackberry	*(Rubus armeniacus)*
Hoary alyssum	*(Berteroa incana L.)*
Meadow hawkweed	*(Hieracium caespitosum)*
Onionweed	*(Asphodelus fistulosus)*
Perennial Sweet Pea	*(Lathyrus latifolius)*
Scotch broom	*(Cytisus scoparius)*
Swainsonpea	*(Sphaerophysa salsula)*
Syrian beancaper	*(Zygophyllum fabago)*
Tall Oatgrass	*(Arrhenatherum elatius)*
Ventenata grass	*(Ventenata dubia)*
White bryony	*(Bryonia alba)*
Yellow bluestem	*(Bothriochloa ischaemum)*
Yellow mignonette	*(Reseda lutea)*

APPENDIX B

NOXIOUS WEED DISTRIBUTION MAP





Project Area (54.0 acres)

Mullein (widely dispersed)

Knapweed

N

Feet
0
250
500

1:3,003

The Markets at Bent Grass

Noxious Weed Location Map

bristlecone ecology