

NOXIOUS WEEDS

A noxious weed is an alien plant that has been designated by rule of law as being noxious. Noxious weeds are designated as such because they are invasive and cause environmental and/or economic damage to such a degree that control measures are need.

According to the Colorado Weed Management Society, noxious weeds invade native vegetation and ecosystems because they have no natural controls such as insects. Alien plants did not evolve in Colorado so they may be inedible or even poisonous to native herbivorous insects and wildlife as well as livestock. Noxious weeds can be managed by using a combination of methods such as mechanical, cultural, biological, preventive and chemical controls.

Cultural control involves overseeding with native plants and reducing grazing intervals to encourage native plant regeneration. Biological control involves the release of beneficial insects which feed only on specific noxious weeds. Biological control also includes managed grazing practices that target specific plants. Prevention includes planting weed-free seed, using weed-free mulches, cleaning machinery before mowing and controlling weeds prior to their setting seed. Judicious use of herbicides can complement all control methods as part of an effective noxious weed management program.

In Colorado, noxious weeds are regulated by the Colorado Noxious Weed Act. The Colorado Noxious Weed Act states that all local governing bodies (counties and cities) must adopt a noxious weed management plan for all lands under their jurisdiction.

This act was revised in 2003 to include three lists: A, B and C. Weed species on List A must be eradicated wherever detected. Not all species on List A are known to exist in Colorado at this time but spread from neighboring states is considered to be imminent. The List A weeds that occur in the state are

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uncommon and eradication is feasible. The law mandates compliance from local governing bodies as well as public and private landowners.

List B species are subject to State noxious weed management plans designed to stop the continued spread of these species. Eradication or containment is specified on a county-by-county basis by the Colorado Department of Agriculture in cooperation with local weed managers. Local governments may designate species on List B for which management is required.

Weeds on List C consist of species that are subject to local government efforts to facilitate more effective management on public and private lands. The goal of these programs is not to stop the spread of these species but instead to provide additional educational, research and biological control resources to jurisdictions that choose to require management of List C species.

Species on the State Noxious Weed Lists A, B and C are shown below. For more information on the State Noxious Weed Management Program, visit their website at:
colorado.gov/cs/Satellite/ag_Conservation/CBON/1251618874438

Colorado Noxious Weed List

List A species in Colorado that are designated by the State Agriculture Commissioner for eradication:

- African rue (*Peganum harmala*)
- Bohemian knotweed (*Polygonum x bohemicum*)
- Camelthorn (*Alhagi pseudalhagi*)
- Common crupina (*Crupina vulgaris*)
- Cypress spurge (*Euphorbia cyparissias*)
- Dyer's woad (*Isatis tinctoria*)
- Elongated mustard (*Brassica elongate*)
- Flowering rush (*Butomus umbellatus*)
- Giant knotweed (*Polygonum sachalinense*)
- Giant reed (*Arundo donax*)

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- Giant reed (*Arundo donax*)

Giant salvinia (*Salvinia molesta*)
Hairy willow-herb (*Epilobium hirsutum*)
Hydrilla (*Hydrilla verticillata*)
Japanese knotweed (*Polygonum cuspidatum*)
Meadow knapweed (*Centaurea pratensis*)
Mediterranean sage (*Salvia aethiopsis*)
Medusahead (*Taeniatherum caput-medusae*)
Myrtle spurge (*Euphorbia myrsinites*)
Orange hawkweed (*Hieracium aurantiacum*)
Parrot feather (*Myriophyllum aquaticum*)
Purple loosestrife (*Lythrum salicaria*)
Rush skeletonweed (*Chondrilla juncea*)
Squarrose knapweed (*Centaurea virgata*)
Tansy ragwort (*Senecio jacobaea*)
Yellow starthistle (*Centaurea solstitialis*)

List B weed species are species for which the Commissioner develops and implements state noxious weed management plans designed to stop the continued spread of these species:

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*)
Corn chamomile (*Anthemis arvensis*)
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*)

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Hoary cress (*Cardaria draba*)
Houndstongue (*Cynoglossum officinale*)
Jointed goatgrass (*Aegilops cylindrica*)
Leafy spurge (*Euphorbia esula*)
Mayweed chamomile (*Anthemis cotula*)
Moth mullein (*Verbascum blattaria*)
Musk thistle (*Carduus nutans*)
Oxeye daisy (*Chrysanthemum leucanthemum*)
Perennial pepperweed (*Lepidium latifolium*)
Plumeless thistle (*Carduus acanthoides*)
Russian knapweed (*Acroptilon repens*)
Russian-olive (*Elaeagnus angustifolia*)
Salt cedar (*Tamarix chinensis*, *T. parviflora*, and
T. ramosissima)
Scentless chamomile (*Matricaria perforata*)
Scotch thistle (*Onopordum acanthium*)
Spotted knapweed (*Centaurea maculosa*)
Spotted x diffuse knapweed hybrid (*Centaurea x*
psammogena = *C. stoebe* x *C. diffusa*)
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 weed species are species for which the Commissioner will develop and implement state noxious weed management plans designed to support the efforts of local governing bodies to facilitate more effective integrated weed management on private and public lands:

Bulbous bluegrass (*Poa bulbosa*)
Chicory (*Cichorium intybus*)
Common burdock (*Arctium minus*)

Hoary cress (*Cardaria draba*)
Houndstongue (*Cynoglossum officinale*)
Jointed goatgrass (*Aegilops cylindrica*)
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Common mullein (*Verbascum thapsus*)
Common St. Johnswort (*Hypericum perforatum*)
Downy brome (*Bromus tectorum*)
Field bindweed (*Convolvulus arvensis*)
Halogeton (*Halogeton glomeratus*)
Johnsongrass (*Sorghum halepense*)
Perennial sowthistle (*Sonchus arvensis*)
Poison hemlock (*Conium maculatum*)
Puncturevine (*Tribulus terrestris*)
Quackgrass (*Elytrigia repens*)
Redstem filaree (*Erodium cicutarium*)
Velvetleaf (*Abutilon theophrasti*)
Wild proso millet (*Panicum miliaceum*)

Watch List weed species have been determined to pose a potential threat to the agricultural productivity and environmental values of the lands of the state. The Watch List is intended to serve advisory and educational purposes only. Its purpose is to encourage the identification and reporting of these species to the Colorado Commissioner of Agriculture in order to facilitate the collection of information to assist the Commissioner in determining which species should be designated as noxious weeds:

Asian mustard (*Brassica tournefortii*)
Baby's breath (*Gypsophila paniculata*)
Bathurst burr/Spiney cocklebur (*Xanthium spinosum*)
Brazilian elodea (*Egeria densa*)
Common bugloss (*Anchusa officinalis*)
Common reed (*Phragmites australis*)
Garden loosestrife (*Lysimachia vulgaris*)
Garlic mustard (*Alliaria petiolata*)
Himalayan blackberry (*Rubus armeniacus*)
Japanese blood grass/cogongrass (*Imperata cylindrical*)
Meadow hawkweed (*Hieracium caespitosum*)

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Onionweed (*Asphodelus fistulosus*)
Purple Pampasgrass (*Cortideria jubata*)
Scotch broom (*Cytisus scoparius*)
Sericea lespedeza (*Lespedeza cuneata*)
Swainsonpea (*Sphaerophysa salsula*)
Syrian beancaper (*Zygophyllum fabago*)
Water hyacinth (*Eichhornia crassipes*)
Water lettuce (*Pistia stratiotes*)
White bryony (*Bryonia alba*)
Woolly distaff thistle (*Carthamus lanatus*)
Yellow flag iris (*Iris pseudacorus*)
Yellow floatingheart (*Nymphoides peltata*)
Yellowtuft (*Alyssum murale* and *Alyssum corsicum*)

INTEGRATED PEST MANAGEMENT

Annuals:

Because annuals only spread from seed, the key to controlling annual weeds is to keep them from going to seed. Hoe or hand pull seedlings, mow or weed whack before flowering, or use an herbicide that is specific for that weed. Herbicides are most effective on annual weeds when they are young, not long after germinating. Seeds remaining in the soil in the seed bank will continue to germinate for several years, so long-term persistence is necessary.

After the seed bank is exhausted, revegetate the area with desirable vegetation to prevent new infestations. An ongoing need for herbicides year after year may indicate a problem with the landscape that should be addressed before continuing to rely on chemical controls.

Biennials:

Because biennials only spread from seed, the key to controlling biennial weeds is to keep them from going to seed. Hoe or hand pull seedlings, mow or weed whack before flowering, or use an herbicide that is specific for that weed. Seeds remaining in the soil in the seed bank will continue to germinate for several

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Perennials:

Simple perennials spread by seed and have no natural way to spread vegetatively. However, vegetative structures can produce new plants when cut or injured. Therefore, the plants themselves need to be killed; and they should be treated before they go to seed. While hand pulling and mowing are often not effective by themselves because the root system may allow the plant to regrow, these methods can sometimes work on small infestations, if done with frequency and persistence, and if as much root as possible is pulled.

Systemic herbicides, which translocate to the roots, can be very effective at controlling perennials. Revegetate the area with desirable vegetation to prevent new infestations, and to provide competition with the weeds.

Creeping perennials:

The key to control any creeping perennial is to exhaust the root nutrient stores, causing it to collapse. Plants often store at least a 3-4 year supply of food in their root systems. The use of a systemic herbicide, properly timed, is often a necessary strategy. Herbicides are most effective on perennial weeds in the early fall, when weeds are transporting energy to the roots before winter dormancy. Treatment just before and during flower bud initiation also is effective, as the herbicide will be carried with photosynthetic products to the roots.

To ensure the presence of sufficient mature foliage, apply postemergent herbicides from 1 to 2 weeks before cultivation or mowing, or after weed regrowth is at least 8 inches tall. Herbicide control is least effective during times of rapid foliar growth, such as in the early spring, when energy that was stored

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