



## Quick Facts...

Cheatgrass (downy brome) is a noxious weed that can invade grassland communities and displace native plants; it thrives in disturbed areas.

This weed can produce more than 10,000 plants per square yard and is highly flammable.

Cheatgrass can be controlled mechanically, biologically, chemically, or by applying fire under controlled conditions.



# FORESTRY

## Cheatgrass and Wildfire

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### Cheatgrass and Wildfire - A Dangerous Combination

Cheatgrass (*Bromus tectorum*), also known as downy brome, is an annual plant native to Eurasia. This aggressive, invasive weed was originally introduced into North America through soils brought by ocean-going vessels and is now a dominant species in the Intermountain West.

Cheatgrass often occurs as a significant component of foothills rangeland vegetation along the eastern front of the Rocky Mountains. While cheatgrass is usually found along roadsides and disturbed sites in the east, it is highly abundant in the west and has invaded disturbed and undisturbed grassland communities to become the dominant species in many lower-elevation areas.

Its destructive habits have placed it on Colorado's noxious weed C list. As with most non-native species, cheatgrass lacks biological predators in North America, providing it a helpful advantage over native species in competition for nutrients, sunlight, and water.

Cheatgrass is notorious for its ability to thrive in disturbed areas—common disturbances include construction, fire, floods, poor grazing activities, and intense recreation. But, it also will invade undisturbed areas. Cheatgrass is hard to control once it becomes established. As this invasive weed begins to dominate an area, it alters native plant communities and displaces native plants thus impacting wildlife. Additional negative impacts include changes in soil properties, a decline in agricultural production, and altered fire frequencies. Cheatgrass is highly flammable and densely growing populations provide ample, fine-textured fuels that increase fire intensity and often decrease the intervals between fires. If fire should strike cheatgrass-infested land native plant communities can be inextricably altered. This may result in erosion and damage to water resources.

### How to Identify Cheatgrass

Cheatgrass is an annual—it lives for only one year/growing season and then dies. It reproduces by seed and is termed a winter annual because its seed germinates from fall into winter. The plant reaches maturity in the spring and turns brown and dies with the onset of summer.



Figure 1. Illustration of cheatgrass. From USDA-NRCS PLANTS Database/Hitchcock, A.S. (rev. A. Chase). 1950. *Manual of the grasses of the United States*. USDA Misc. Publ. No. 200. Washington DC.

The height of cheatgrass ranges from three to 30 inches. It has a crooked seed head and small soft hairs covering the entire body of the plant. Leaves emerge dark green with a hint of purple. As it matures and begins to cure, cheatgrass turns yellow to reddish-brown in color with seed heads ranging from two to six inches long at maturity. These seeds have wedged awns that may be dispersed by wind and water, but most often they are spread by adhering to clothes or to the coat of a wild or domestic animal.

## Fire Hazards

The early-season growth habits of cheatgrass provide a competitive advantage by allowing it to grow tall and abundant before native species emerge. During years of high precipitation, this grass can produce more than 10,000 plants per square yard. Cheatgrass turns brown and dies by early summer leaving behind thick, continuous dry fuels and creating extreme wildfire hazards.

Though several components can affect flame length and fire spread, a typical cheatgrass fire on flat terrain with wind speeds of 20 miles per hour may generate flame lengths up to eight feet in height; the fire can travel more than four miles per hour. Grass fires are dangerous because they move quickly and grasses act as ladder fuels igniting larger and more volatile vegetation.

Due to these readily combustible characteristics, it is critical for those who live, play, or work in “cheatgrass country” to know not only how to identify and eradicate it, but also take precautions not to ignite it:

- Keep vehicles on well-maintained roads at all times. Fires can ignite as a result of hot car exhaust systems coming in contact with tall, dry fuels.
- Build campfires on bare ground in contained or designated areas. Make sure campfires are out completely before you leave.
- During hunting season or target practice, be aware of fires that may ignite due to stray bullets hitting solid objects and thus creating sparks.
- Supervise hay-baling and wheat harvesting operations closely to prevent ignition of dry fuels.
- Dispose of cigarette butts and matches properly.
- Use and maintain approved spark arresters on all power equipment.
- Keep an eye out for rocks and metal when brush hogging or mowing; sparks generated could start wildfires.
- Monitor sparks when using welding equipment. Have a fire extinguisher available.
- Instruct children to never play with fire or fireworks.

## A Concern for Homeowners

Cheatgrass is highly flammable and therefore a concern for homeowners. Clear this grass from within the area 30 feet immediately surrounding your home. Cheatgrass can act as a ladder fuel to ignite larger fuels; these can, in turn, throw burning embers and pose an even larger threat. Grass should be mowed to a minimum of six inches or less. Keep yards clean and green. Perform routine vegetation maintenance around your home and high-value property areas to mitigate potential problems.

## Control Methods

Cheatgrass can be controlled mechanically, biologically, chemically, or by applying fire under controlled conditions. The best results usually come from a combination of some or all of these techniques. The key to eradicating cheatgrass is diligence—once you begin the process you must be persistent and continue follow up treatments for up to four or five years (or however long it might take) because cheatgrass seed may survive in soils this long.

## How can homeowners eradicate cheatgrass?

Cheatgrass can be removed by hand pulling or mechanical techniques (i.e., a lawn mower, weed whacker, disking); remove the grass before it has time to mature, produce seed, and cure (turn brown and die). Once cheatgrass has been removed, rototill the soil to a three inch depth. Plant the area with desirable species, water properly, and maintain.

### Mechanical Treatments

**Hand pulling** – during spring and fall; repeat when new plants appear; effective in small areas only.

**Disking/tilling (live plants)** – spring and fall before the seed heads turn purple; repeat when new plants appear; use disk, rototiller, spike-tooth harrow, etc.

**Disking/tilling (seeds)** – once in late spring before seeding with desirable species in the fall; bury seeds at least three inches deep to prevent germination.

**Mowing** – not recommended as a long-term control technique as seed may be produced by mown plants.

### Biological Treatments

**Livestock grazing** – graze, very heavily, twice in early in spring (approximately three weeks apart) when the grass is green but prior to seed formation; repeat for at least two years.

### Chemical Treatments

A few chemical formulations exist, such as Plateau or Roundup, that may control or even eradicate cheatgrass. However, before using any chemical make sure that the herbicide label lists cheatgrass; if it is not listed, do not use. No one herbicide will control all weed species. Combinations of herbicides may be required for control. **As always, follow all instructions on the label.** For more assistance with chemical cheatgrass control, contact your county weed office or your local Colorado State University Extension office.

**Controlled Burning Treatment** – late spring and summer; controlled burning has associated risks which should be addressed in a prescribed burn plan. If not done correctly, prescribed burns may escape control and become wildfires, produce smoke that impairs visibility on highways or impacts individuals with respiratory problems, and may cause damage to desirable vegetation. Consultation with a prescribed fire/controlled burn specialist is recommended when developing a prescribed burn plan. Prescribed burn plans may require local and/or state burning permits. Contact your county sheriff or local fire official prior to burning.

#### **For More Information**

*To learn more about cheatgrass and proper control methods contact your county weed district or Colorado State University Extension office.*

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*Colorado State University Extension, 115 General Services Building, Fort Collins, CO 80523-4061; (970) 491-6198; E-mail: [resourcecenter@ucm.colostate.edu](mailto:resourcecenter@ucm.colostate.edu):*

- 6.303, Fire-Resistant Landscaping
- 6.304, Forest Home Fire Safety
- 6.305, FireWise Plant Materials
- 6.306, Grass Seed Mixes to Reduce Wildfire Hazard

<sup>1</sup>J. Davison, central/northeast area plant and soils specialist, University of Nevada; E. Smith, western area natural resource specialist, University of Nevada Cooperative Extension. Colorado adaptation by G. Beck, Colorado State University Extension weed specialist and professor, department of bioagricultural sciences and pest management.