



As cheatgrass matures, it turns a reddish-purple color. This makes the level of infestation VERY visible.

CHEATGRASS

The ecology, biology, and control of a biological time bomb

By Brian Connely

Cheatgrass, downy brome, bronco-grass – all common names for *Bromus tectorum*, a weed that has the potential to destroy whole ecosystems from Montana to New Mexico. This grass weed has already turned large areas of Nevada into “cheatgrass deserts.”

What is cheatgrass? How does it permanently alter plant communities and ecosystems, and, most importantly, what can we do about it?

Cheatgrass is an annual or more often a winter annual. This plant germinates with fall precipitation and over-winters as an adult plant. This adult plant starts growing very early in the spring, giving it an advantage over our later-greening native grasses; hence, the name cheatgrass. It uses fall as a time to get started growing and then springs ahead in growth – cheating native grasses of water and other nutrients.

Cheatgrass is from the Mediterranean area and apparently first came to this continent as a contaminant in packing material. According to the book *Weeds of the West*, cheatgrass first showed up near Denver, Colorado.

The weed can out-compete native perennials in a variety of ways – prolific seed production (up to 18,000

per square yard), ability to form dense stands (12,000 to 15,000 plants per square yard), ability to germinate in fall or spring, tolerance of grazing, and ability to increase, tolerate, and encourage frequent fire events.

Cheatgrass can drastically change native ecosystems – it provides only limited forage for wildlife and livestock throughout the year (a couple of weeks in the spring), increases fire frequency, alters the water and nutrient cycling of an ecosystem, provides no hiding or thermal cover for wildlife, and readily adapts to its environment to out-compete other grasses. Cheatgrass can negatively affect virtually every plant and animal species in the affected area.

Cheatgrass can change the normal lightning-caused fire cycle in the sagebrush-steppe community (natural areas of sagebrush, grasses, and forbs) from once every 45 to 75 years to once every three to five years! Once a fire event sweeps through a cheatgrass-dominated site, the cheatgrass has a competitive advantage and often will dominate a post-fire site. These solid monocultures are very stable and will remain solid cheatgrass until actively controlled by man.

Cheatgrass control and prairie rehabilitation and restoration are a relatively new science. New techniques



Cheatgrass can produce up to 15,000 plants and up to 18,000 seeds per square yard.

and products are constantly being developed and investigated.

This is some of what is known about cheatgrass management at this time:

Prevention – Maintaining a thriving and healthy plant community is paramount in all weed control strategies. Preventing overgrazing and severe land disturbance from excavation/construction, fire, and vehicle traffic helps conserve good plants and prevent weeds from taking over. Overzealous applications of non-selective herbicides (an example is Roundup) or using selective herbicides too heavily can help pave the way for cheatgrass. Keeping cheatgrass from establishing in disturbed areas is very important for long-term prevention.

Biological control – There are currently no biocontrol insects or pathogens available for cheatgrass control.

Mechanical control (cultivating, mowing, grazing, burning) – In cultivating cheatgrass in preparation for reseeded, cheatgrass seed must be buried at least 2½ inches to prevent germination. A moldboard plow is effective but not often feasible in rocky conditions. Mowing is not effective as plants mowed before seed production tend to form new seed heads. Cheatgrass will adapt to mowing regimes and start producing seed heads below the cutting blade elevation. Grazing cheatgrass intensively in early spring can help stress the plants.

Graze the plants twice in very early spring at three-week intervals.

Controlled burning at the proper time can reduce cheatgrass densities the following year after the fire. Controlled burns must be conducted before seeds mature. The seed present on the soil is not totally destroyed by the fire, and cheatgrass can recover in a few years if reseeded of perennial grasses is not successful; therefore, a controlled burn of cheatgrass must be followed by a successful planting and/or establishment of perennial grasses for control. Controlled burns must be planned with cooperation of local fire districts and land management professionals.

Chemical control – Chemical control can be costly but is often the best initial alternative for controlling cheatgrass. First, determine the condition and goals for a management area. Survey the land carefully and determine if there are enough existing desirable grasses/forbs/shrubs in the area to meet management goals. Utilizing a local weed and pest control district, Natural Resources Conservation Service (NRCS), University of Wyoming Cooperative Extension Service (UW CES), and conservation district (see links below) can be a big help in making this determination. If a good stand of desirable plants is in place in the cheatgrass-infested area, then one herbicide in particular has shown promise in selective

cheatgrass control – Plateau. Plateau is only sold to governmental organizations such as weed and pest control districts, and others. These organizations can then redistribute to the public.

Plateau is labeled for “native grass establishment ... on pastures, rangeland, and non-crop areas.” It is only available through government entities such as some weed and pest control districts and is quite costly (about \$8 to \$14 per acre). Plateau is applied at 4 to 8 ounces per acre in the late summer or fall – late August to October. It is best applied to the ground before cheatgrass germination and in anticipation of the first fall precipitation. Plateau, when applied properly, will not kill most perennial native plants, but it will prevent cheatgrass from germinating.

Plateau is applied at very low rates for cheatgrass. This means the equipment used to apply the chemical must be well calibrated. See the links below for sprayer calibration, available through UW CES.

If a survey of the cheatgrass infestation shows there are very few desirable plants present, then replanting and establishing desirable, adapted plants will be necessary. A pre-plant chemical treatment is necessary to assure establishment of the planting. Journey herbicide can be applied in the fall to control cheatgrass and prior to either a fall or spring planting. Journey can be purchased through some weed and pest districts and agriculture supply stores (about \$10 per-acre-treatment cost). Glyphosate (the active ingredient in Roundup) can be applied to young cheatgrass plants in the

spring, followed by a spring planting. Glyphosate is a non-selective herbicide and will kill most desirable plants. If reseeding is necessary, then glyphosate or Journey should be considered.

Reading, understanding, and following label directions is essential when using herbicides. Cheatgrass control is a relatively new science and can be complicated and confusing; however, control is very possible if we learn all we can about this grass and its control.

Below are some good links to information on cheatgrass control.



Cheatgrass encroaching on a native plant community.

“A Homeowners Guide to Cheatgrass” www.ucweeds.org/weedlist/docs/HomeownersGuidetoCheatgrass.pdf

“Cheatgrass Blazes Unwanted Trail” www.vmanswers.com/magazines.aspx?pid=698

“Species Profiles: Downy Brome” www.invasivespeciesinfo.gov/plants/downybrome.shtml

Calibrating hand or single nozzle sprayers

http://ces.uwyo.edu/PUBS/MP93_Series/mp93-4.pdf

Calibrating boom sprayers

http://ces.uwyo.edu/PUBS/MP93_Series/mp93-3.pdf

UW CES offices

<http://ces.uwyo.edu/Counties.asp>

Wyoming weed and pest control districts

www.wyoweed.org/wp_dist.html

Natural Resources Conservation Service

<http://offices.sc.egov.usda.gov/locator/app>.

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