

Don Gayton, FORREX

If an ounce of prevention is worth a pound of cure, then what is 25 million hectares worth? That is the area of western North America currently infested with cheatgrass (*Bromus tectorum*), where prevention is no longer an option. As Washington State University weed ecologist Richard Mack points out, we've had lots of time to confront this Eurasian annual rangeland and cereal crop weed: it was first reported here over a hundred years ago (Mack 2011).

In hindsight, there are some reasons for this lengthy delay. Grass species are devilishly hard to distinguish from one another, even by experts. And cheatgrass, even though it robs moisture and productivity from native grasses (hence its name), does provide a certain amount of forage in early spring and late fall. But the bottom line is that we have largely ignored this weed, and ignored the forces that help or hinder it, until now. And now is when cure is not measured in pounds, but truckloads.

Fortunately, the scientific community has recently taken up the cause of cheatgrass ecology and control. At the recent Society for Range Management annual scientific conference, an entire session was devoted to cheatgrass. A fast-developing and prolific seeder, cheatgrass can literally overwhelm dry rangelands and shrublands, and it dearly loves any kind of soil disturbance. Mowing or spraying the weed only makes room for the next wave of cheatgrass, which will germinate from the abundant soil seed bank. However, researchers have recently determined that seed only remains viable in the soil for one to three years. So by preventing seed set through careful mowing, grazing and (or) spraying for multiple years, the soil seed bank can be exhausted. The trick however, is to prevent seed in-migration from windblown or animal sources.

Another avenue of potential control is beginning to open up: Utah researchers are examining a native fungal pathogen that attacks cheatgrass seed to determine its usefulness as a possible biological control agent.



**Cheatgrass (*Bromus tectorum*). Notice the minimal root and leaf development, and abundant seed production.**

Photo credit: Don Gayton



Perhaps the most important development in the war against cheatgrass goes by the acronym EBIPM: ecosystem-based invasive plant management. This is a “conceptual framework” that examines the causes of plant community change and the processes affecting that change. The framework then moves logically forward through a set of ecological principles, and then finally allows the user to choose appropriate cheatgrass control strategies and tools that conform to those principles.

We, here in British Columbia, would do well to closely follow developments in cheatgrass research. Even though we are at the northern edge of the weed’s range, it is ubiquitous in all the valleys of the Interior as far north as Williams Lake, and it is plentiful in parts of Vancouver Island. Many observers feel cheatgrass is on the increase in BC, and climate change will no doubt favour it even more. It might be time to take a good hard look at cheatgrass in BC, using the framework of EBIPM. We’re definitely past the ounce of prevention stage, but we may still be able to avoid some of the cheatgrass nightmares that land managers in the US Great Basin are currently experiencing.

## Reference

Mack, R. 2011. Fifty years of waging war on cheatgrass: research advances while meaningful control languishes. In: Richardson, D.M. (ed) Fifty years of invasion ecology: The legacy of Charles Elton. Blackwell Publishing Ltd., Oxford, UK.

## Author information

Don Gayton – Dry Forest and Grassland Extension Specialist, FORREX, Summerland. Email: Don.Gayton@forrex.org

