What's the deal with

Invasive annual grasses (IAGs) threaten Wyoming's landscape, habitats, and ecology in myriad ways. In Wyoming, they are especially damaging to the sagebrush-steppe ecosystem. The composition of the sagebrush-steppe ecosystem is sagebrush and perennial grasses interspaced with bare ground. Invasive annual grasses can easily invade these bare interspaces between desirable species.

Once they invade, their extremely dry plant material can reduce the interval between fires to a level at which the sagebrush or other brush vegetation cannot re-establish after a burn. The snow capture and water holding capacity of the land also decreases. The economic implications for invasion by IAGs are vast and include both direct loss of forage quality and biodiversity as well as indirect losses such as aesthetic value, habitat loss, and the potential to delay oil and gas reclamation bond releases.

Once established, these winter annual plants exploit scarce resources (such as precipitation and nutrients) earlier than perennial grasses and are difficult to control. For the last century IAGs have invaded rangeland largely unchallenged. Preventing seeds from entering an area and keeping desirable plant communities healthy and resistant to invasion are essential for control of these species.

Types of IAGs

Cheatgrass is the culprit that most Wyomingites are familiar with. This prolific seed producer tends to attach to our socks, canine companions' fur, and livestock hides. Other invasive annual grasses that threaten our lands are ventenata and medusahead, grasses that spread in a similar manner and also increase fire return intervals. Successful control methods are essentially the same for all three.

Beth Fowers

invasive annual grasses?

Cheatgrass is common throughout Wyoming. Ventenata and medusahead are currently rare, but are proving to be an emerging threat, particularly in the northern part of the state. Although cheatgrass is non-poisonous and makes a decent forage for a very brief period in the spring, medusahead and ventenata do not provide forage and are considered unpalatable.

IAGs spread exclusively by seed. They have often arrived in Wyoming as a contaminant of forage, grain, and packing materials, or on animal hides. As plants that thrive in frequently disturbed areas, any disturbance, such as human activity or drought, favors their establishment.

Rules and regulations

Medusahead and ventenata are both on the Wyoming State Designated Noxious Weed list but are relatively rare, enabling an Early Detection and Rapid Response (EDRR) control strategy. Cheatgrass, on the other hand, has not been added to the statewide list and so far has been managed as a county-declared weed on a county-by-county basis.

The reason for not listing statewide is complex. Removing grass weeds from grass systems is very difficult on a fundamental level. In contrast to broadleaf weeds (primarily non-grasses), which can be controlled with a set of herbicides that affect broadleaves exclusively, grass herbicides typically remove all grass (weeds and native grasses alike) from a system. The latter is an unacceptable outcome.

Cheatgrass, in particular, is very widespread and would require more funds than the established budgets of all stakeholders involved in weed control. It is difficult, if not impossible, to remove cheatgrass seed from other grass seeds produced for reclamation seed mixes. If the species were listed statewide, reclamationists would have to source cheatgrass free seed that currently does not exist or would be in limited supply. This would produce barriers to land reclamation.

Although cheatgrass is not included on the statewide list, managers can still develop successful control programs for IAGs. The Wyoming Governor's Invasive Species Initiative has outlined protocols for prioritizing IAG control in Wyoming weed control programs. In the coming years, more resources will become available for control of cheatgrass in the state. Utilizing new technologies available in remote sensing (imagery) as well as chemistries that can successfully remove annual grasses from perennial grass systems will also aid future control efforts.

Taking control

Winter annual grasses typically germinate in the fall and have an established root system and leaves already present in the springtime when temperatures are suitable for the plant to resume metabolic activity. This trait, along with the early senescence (drying out) of the plants in the early part of summer, allows us to locate IAGs with well-timed imagery. In early summer, IAGs tend to be green while other grasses are still brown.

If armed with good maps of where cheatgrass has invaded, management becomes less overwhelming. As accuracy increases, control becomes cheaper. Pre-emergent chemistries that have proven effective are becoming approved for use on all Wyoming lands, including those belonging to private owners,

◀*Wyoming cheatgrass fire*


Victor Loki, shutterstock.com

the state, and the Bureau of Land Management; this will allow for long-term control.

Effective control strategies for our state must include managers of all types of Wyoming lands working together. Treating large areas ultimately makes control more economical and prevents reinvasion in following growing seasons. Control is achieved through stopping additional IAG seeds from entering the soil seedbank, which means a patchwork of control measures is inappropriate on a landscape scale.

Managing IAGs on your property

What can we, as landowners or managers, do now to control these problematic annual grasses? First, and most importantly, we can map out existing problems. Whether on a napkin or a computer screen, knowing where the current IAGs exist on your personal property or leases is essential to creating an effective control plan. Though sometimes it seems like IAGs such as cheatgrass are all over a property, often they are still in discrete areas. With a map in hand, you can prioritize control efforts and gain the upper hand before they spread.

If one pasture is invaded, do not spread seeds by accident. Do not allow livestock to move from an invaded area to an uninvaded area until all of the seeds are gone. Wash vehicles and equipment before moving them to uninvaded areas. Although sometimes time-consuming, these activities are largely free.

Ensure the existing desirable species and shrub habitat are healthy and resistant to drought cycles. Avoid overgrazing pastures and monitor portions of pastures where animals congregate for IAG invasion. Prioritize land for control, starting with lightly invaded areas as well as areas with dense shrub species that are not well adapted to fire. Coordinate efforts with neighbors and adjacent land management agencies to work in large contiguous blocks of land.

Visit bit.ly/natrona-weed-pest for more information on IAGs and identification guides for cheatgrass, medusahead, and ventenata.

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