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Missouri Invasive Plant Council

Invasive Plant Management - To Goat or Not to Goat...That is the Question

There are certainly a variety of tools in the invasive plant species management toolbox, including, but not limited to: prescribed fire, hand pulling, digging, herbicide application (several application methods), grazing, mowing, suffocation, and biocontrol agents. As with any job, we must ensure we are selecting the appropriate tool, or combination of tools, to effectively and efficiently complete the task. Each of these tools comes with a list of pros and cons that require careful consideration before we take action.

One such tool has recently enjoyed more time in the spotlight: the use of domestic goats to combat invasive plant species. As mentioned above, there are some considerations to think through when deciding if goats are the right tool for the job. Questions for consideration can include: What is the current status of the invasive plant invasion – complete coverage or only a few stems over a small percentage of the area?; Can livestock fencing be easily installed and maintained?; How many goats will it take and for how long to achieve invasive plant control objectives?; Will goats target only the invasive plants?; Will the goats effectively kill the target invasive plants?; and What will happen once the goats are removed – what is the long-term plan?

Goats are renowned for their indiscriminate herbivory. With a broad palate, goats will certainly consume invasive plant species, but land managers must be aware that goats will also consume all other plants, including native species. This indiscriminate foraging may be ideal for some situations, such as areas comprised entirely, or almost entirely, of invasive species. But in other situations, such as high quality natural areas with only a few invasives scattered throughout, goat grazing could be detrimental. These scenarios describe far opposite ends of the plant invasion spectrum, but the in-between scenarios require more careful consideration.

If goats are to be utilized on a given site, the grazing treatment must be specialized to encourage the animals to cause maximum damage to the target plants. The following is a list of requirements for effective plant control with goats.

- Utilize temporary, moveable, secure fencing to confine the herd to a certain area – this needs to keep the goats from escaping and also keep coyotes from entering the herd
- Utilize very high stocking rates to encourage mob grazing – the goats will spend less time searching for their favorite plants and will eat whatever is in front of them
- Move the goats to a new paddock when near-full defoliation has been achieved (80% or more of total leaf material)
- Repeat the grazing treatment A MINIMUM of 3 times within two consecutive growing seasons – more repeat treatments will result in greater plant control

Because goats will eat all plants and not just the invasive ones, the use of goats should be limited to situations in which there is minimum potential for damage to beneficial plants. Also, due to the number of repeat treatments required, targeted goat grazing is usually one of the most expensive management options.

Goats can be used in combination with manual control options. A hypothetical scenario would be one in which an area was grazed twice with goats about a month apart. The vegetation should at that point be opened sufficiently to allow easier access for manual control options, such as cutting, pulling, root docking, or basal herbicide application.

Goats are one tool in the invasive plant management toolbox, but with important limitations to consider, just like other tools. The bottom line is that each situation is unique and rarely is there a silver bullet; therefore, the pros and cons should be carefully evaluated to ensure that desired outcomes are achieved while minimizing collateral damage to native plant communities, whether with goats or any other tool.