A Self-Learning Resource From MSU Extension

MONTANA STATE UNIVERSITY EXTENSION

MontGuide

Conserving White-tailed Deer Habitat When Controlling Noxious Weeds with Sheep.

Roy Fenster and Jim Knight, Montana State University Extension Wildlife Program and Montana Sustainable Rangeland Livestock Task Force

One widely used method used to control weeds in rangeland is to graze domestic sheep on target areas. This Montguide gives you the information you need if you're considering this method and you are concerned about wildlife habitat

MT 200603 AG New 1/07

IN RECENT YEARS, NOXIOUS WEEDS HAVE become a serious problem in certain areas of Montana. Weeds such as spotted knapweed and leafy spurge have overtaken thousands of acres of what were previously productive rangelands. Many control methods have been used to stop the spread of these plants. One widely used method of control is grazing domestic sheep on land infested with weeds.

Sheep have been shown to eat the weeds to a point that prevents their spread. In many situations, this control method can be more advantageous than using beetles or herbicides, since sheep can be raised for profit rather than being only a direct cost, like many other control methods. Herbicides may also result in a major reduction in forb composition.

One disadvantage of grazing sheep to control weeds is that, in many instances, their diet can overlap with that of whitetail deer. This could possibly damage deer habitat. However, if you follow a few simple guidelines, you can avoid damage to deer habitat. You may even enhance habitat through conscientious use of sheep grazing for weed control.

When using sheep to control weeds in areas where whitetail deer are desired, it is important to keep in mind the seasonal needs of the deer. It is also important to know what kind of habitat you have in relation to when the deer will be using the area. Whitetail deer require different habitat characteristics for different times of year and, as long as the sheep don't affect the specific things the deer need at these times, no conflicts should occur between the two.

Deer are primarily browsers and secondarily grazers. They are selective feeders. This means they pick through what is available to them and consume the most nutritious forage available. Browse species consumed by deer include willow, dogwood, aspen, chokecherry and bitterbrush. They will consume young buds and current year's growth branches. Grass is usually used only during the first few weeks of green-up, when grasses are first growing and very palatable.

Forbs, the small green leafy plants that grow between the grasses, are a very important component of the summer diet, as they are very palatable and nutritious. Forbs are particularly high in protein. Deer require 16 percent or more protein in their diet for lactation, antler development, growth and putting on fat reserves to help them survive the winter.

As fall sets in, deer diets shift more to agricultural crops and browse. Forbs are consumed to some extent as long as they are not covered by snow, although the nutritional level of forbs drops off after the first frost. Other foods, such as mushrooms or mast will also be consumed at this time if they're available.

The most critical time for deer is winter, when food supplies are often limited and snow levels may hinder deer from moving to other areas. In Montana, whitetails will often "yard up" in river-bottoms or other areas where less snow is likely to accumulate. Deer will seek thermal cover, such as areas with thick brush or evergreen trees, at this time. Forage will depend largely upon what is available above the snow. Deer also rely heavily on browse species and any available crop residue. Lichens may also make up a significant portion of a deer's diet at this time.

Sheep grazing, for the purpose of controlling noxious weeds, is generally done in the spring and summer. During this time of year, there is overlap between sheep and deer diets. Sheep prefer forbs to grass, and may consume this important food that deer require in order to put on sufficient fat reserves for winter. If forbs are in short supply, this could lead to competition for this food source. Sheep also eat grass. In most cases, this will not harm whitetails due to the usual abundance of grass at the time whitetails use it. Where sheep may do the most harm to whitetails, particularly in areas where whitetails winter, is consuming browse.

Sheep, unlike domestic goats, are not browsers by choice. They browse if other foods are not available. However, if you manage grazing properly, this should not be a problem during spring and summer months, when grasses, forbs and target weeds are plentiful. Browsing by sheep may become a problem in fall or winter if sheep are not removed from deer winter habitat. Sheep should be taken off these pastures during these times and if they browse heavily during the summer. Weed control by grazing will not take place in the wintertime, so this should not be a problem to the landowner trying to control noxious weeds.

It's important to closely monitor pastures for forage consumption and availability where sheep are being grazed. Landowners who wish to protect their whitetail habitat should be prepared to move sheep to another location if the sheep begin to overgraze vital deer forages. Adapting the number of sheep used in relation to the levels of weeds to be removed is also important. In the fall, sheep need a place to go where they will not be impacting deer habitat.

There are many different methods of monitoring grazing activity that you can use to determine when sheep should be moved to another location to avoid damaging habitat. To monitor use of grass and forbs, place small cages or fenced-in areas to exclude sheep from grazing in small plots. Cages made of 2X4 inch weld wire, approximately three square feet in size, should be placed in areas that have typical vegetation for the pasture. Secure them with fiberglass posts or steel T-posts. These cages will not only show the use of the sheep grazing, but will also make it easy to visually compare effects of trampling vegetation and bedding. In areas holding deer through the summer, you may want to place similar cages outside the pasture containing sheep to indicate deer use. This will help you determine how much use is due to sheep versus deer by comparing the use around both sets of cages.

There are several ways to monitor sheep use of browse. One simple way is to pick out particular plants and tag each stem of current year's growth with plastic tape. Each leader can be counted as grazed or ungrazed, depending on whether or not it has been bitten. By tagging 10-to-20 individual plants, both in and adjacent to the area to be grazed, you can keep track of what percentage of the twigs deer are browsing compared to deer and sheep. If no deer summer in the area, it will not be necessary to tag plants outside the grazed area. Most shrubs can take up to about 50 percent use of current year's growth without sustaining permanent damage.

The amount of browsing allowed by sheep before removing them depends upon the number of deer expected to winter in the area and the initial amount of browse available. For example, if deer summer in the area but go elsewhere for winter, browsing by sheep could be 50-60 percent with no detrimental effects to the deer. However, if you want to maintain a high winter deer population, all browse available may need to be left for deer to survive a rough winter.

Timing, duration and intensity of sheep grazing can have a positive impact on the deer habitat. Grazing around shrubs can stimulate their growth by removing competition for water and nutrients. Deer eat grass that has been grazed if it begins to re-grow as a result of late summer moisture. Removing noxious weeds can lead to re-establishment of native forbs that deer prefer as forage.

Monitoring work at Montana State University shows that, as spotted knapweed or leafy spurge increase, the forb component of the range decreases dramatically. As the noxious weeds decrease, the forb component approaches typical composition. Moderate short-term grazing in mid-summer can lead to an increase in succulent forbs for deer if late summer moisture sparks re-growth. This can help deer build more fat reserves for winter until snow covers the ground.

The effects of sheep grazing may be detrimental unless it is closely monitored. You should avoid late summer and fall grazing unless it is a light, short duration graze to clean up any late blooming weeds. Do not winter sheep in areas where you desire deer. Sheep, increasing their browsing due to lack of other forage, compete directly with deer during one of the most critical times of the year. Overgrazing by sheep at any time of year can be detrimental to future deer populations.

If done properly, using sheep to control noxious weeds can be beneficial to whitetail deer habitat. Once you determine the type of deer habitat, good planning, timing and degree of grazing can be implemented to benefit production of plants that deer need at certain times of year. Closely observing what the sheep eat and to what degree should be part of your management plan. The ability to move sheep out if habitat degradation begins is also a must if deer habitat is to be properly maintained.

Removing noxious weeds is always positive and, if done properly, can deliver rewards beyond what you might have anticipated.

This project was made possible through funding from the Montana Sustainable Rangeland Livestock Task Force

http://www.montana.edu/wwwpb/pubs/mt200603AG.html

MONTANA STATE UNIVERSITY EXTENSION

The U.S. Department of Agriculture (USDA), Montana State University and the Montana State University Extension Service prohibit discrimination in all of their programs and activities on the basis of race, color, national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital and family status. Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Douglas L. Steele, Vice Provost and Director, Extension Service, Montana State University, Bozeman, MT 59717.

File under: Land Resource Management

E-4 (Miscellaneous)

New January 2007
500-1/07JM