

Is Sheep Grazing Good for Native Plants?

By Peter Lesica

We all recognize that weeds are a big threat to Montana's native grasslands. Land managers have several methods to address this threat, including hand pulling, herbicide, and biological control. Hand pulling is a lot of work and herbicide introduces man-made chemicals, perhaps with unknown consequences into the environment. Biological control seems like the most desirable means of weed control because there are no chemicals involved, and the biocontrol agents do the work.

Missoula is surrounded by grass-covered hills, and there is no better place in Montana to see weeds. Managers have been using all of the above methods to control spotted knapweed, leafy spurge, Dalmatian toadflax and sulphur cinquefoil. Several years ago they hired a herd of sheep to graze the hills during spring and summer – a four-hoofed form of biological control. It seems like a win-win situation; the sheep get a meal, and we get rid of the weeds. But it may not be as good as it seems. While most biocontrol agents are specialists – they eat only weeds – sheep eat weeds and native plants; they could do as much damage as good. Unfortunately, managers had not been monitoring the effects of the sheep. No one had a good idea what effect the sheep were having, but members of the Montana Native Plant Society wanted to know, so the Clark Fork Chapter hired George Hirschenberger to find out. George had just retired from the Bureau of Land Management where he had been a range conservationist in Butte and a weed management specialist in Missoula. George was lucky because the sheep herder was Mexican, and George's wife, Nancy, is a Spanish teacher.

George found that sheep grazing on native plants varied with the weather, what growth stage the plants were in and the overall composition of the plant communities available to the sheep. In the spring, sheep grazed on both weeds and native forbs including stoneseed (*Lithospermum ruderale*), blanketflower (*Gaillardia aristata*), sticky geranium (*Geranium viscosissimum*), pasqueflower (*Anemone patens*), yellow bells (*Fritillaria pudica*) and silky lupine (*Lupinus sericeus*). In mid June the sheep began to use leafy spurge and Dalmatian toadflax for the great majority of their diet, although blanket flower, stoneseed and silky lupine continued to be grazed by sheep. By late summer there was very little use of native forbs.

So the story isn't simple; sometimes the sheep grazing has little effect on natives; sometimes it's not so good. George's findings suggest that spring grazing should be restricted to areas that have little or no native composition remaining. Once natives are well on their way to dormancy in late June, sheep grazing can be more widespread. We assume that sheep grazing is bad for the weeds, but we really don't know this. Often biological control of one weed results in the increase of another instead of a return to natives. Only long-term monitoring can answer this question. The Clark Fork Chapter will continue to be interested in this experiment.