

observed two sites on a local ranch. The Cross H Ranch, near my home town of Post, Texas, was my observation site and provided me with hands-on experience. To determine the range condition of a Clay Loam site, Gary Dean, Range Conservationist for the USDA Soil Conservation Service, assisted me in plotting 14 sites using a 9.6 square foot plot size. In the 14 plots, using 7 plots in each site, we determined the percentage of covered ground (live turf) and bare ground (dead turf). In the first area that we plotted, a root plow had been run—79% of the ground was bare and 21% covered with turf.

In the next 7 plots, the root plowing and weighted roller chopping process was combined. After the area had been root plowed, it was chopped and packed within 1 to 3 days of plowing. This time period is vital in determining the percentage of grass roots that are saved. By leaving the grass roots unsealed for longer than 3 days, the roots would dry out and die. On this site the percentages of covered ground improved tremendously. The ground showed 77% covered and 23% bare.

These two areas were plowed during December, 1987, allowing them one year of growing season. The areas on the Cross H Ranch have been improved from land once covered with mesquite and producing only moderate amounts of forage for livestock grazing to areas where ample vigorous grasses are now growing through the root plowing and weighted roller chopping process.

Although mesquite trees are just now becoming commercially marketed for such as things as wood for barbecue, jelly, and fodder for livestock, this aspect does not

offset the damage that is done to rangelands. The trees have served their purpose for the ranchers, but now they are abusing their welcoming site that they had 40 to 50 years ago. Since new land cannot be developed, we must continue caring for the land that we do have. One way to care for our land is controlling noxious plants like the mesquite and re-establishing the turf by using the root plow and weighted roller chopper process.

In conclusion, root plowing has been shown to be an effective mechanical method for controlling honey mesquite on the Rolling Plains area of Texas. But it has been found that a follow-up treatment with a weighted roller chopper can serve to re-establish a grass cover in a shorter time span. This will aid the rancher in controlling soil erosion, reviving the old forage base without reseeding, and turning his rangeland back into a profitable enterprise. The costs of these methods are high and must be weighed by the landowner to ensure that the goals of landownership are met.

References

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A Little TLC Will Keep This Pioneer Going Strong

Kelly Bott

Everyone is affected directly or indirectly by our rangeland and its management. I am sure only a small percent of the total population realize this. Even ranchers who's livelihood is directly affected by rangeland often take it for granted. I would like to help create an awareness of the importance of rangeland and its management at the

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grass roots level by relating through the plant Bluebunch wheatgrass.

A little over one-hundred years ago, word spread fast—"Montana Territory was excellent grass country." Montana became the final destination of thousands of cattle drives from as far away as Texas. It was the beginning of Montana's livestock industry.

As Montana celebrates its centennial year, the sale of livestock produced on Montana's range remains the "number one" industry for the state.

Ranchers depend heavily on the fifty million acres of rangeland to provide grazing for livestock for at least six to seven months of the year.

There are hundreds of range plants out there but only a few provide the majority of the forage for livestock and big game. One of the key native range plants is bluebunch wheatgrass. As the name implies, it is a bunchgrass and it can produce a large volume of palatable and nutritious forage if good range management is applied.

Bluebunch wheatgrass is found in all areas of Montana. It is a very important component of the range vegetation for the western mountains of the state and for the foothill areas of western and central Montana. It is also an important component on some range sites in the river breaks, the central plains and the eastern plains of Montana.

Bluebunch wheatgrass is adapted to most dryland sites. It has a potential to produce well on the shallow sites. The roots adjust to the lack of soil depth by lateral spreading out as far as seventy inches. Where bluebunch wheatgrass is dominant on sites with deep soils, potential yields of two thousand pounds per acre are possible. Its favorite niche is the steeper south and east facing slopes of the foothills.

Agropyron spicatum is the botanical name for bluebunch wheatgrass. Derived from Greek "argos" meaning a field and "pyros" meaning wheat. Spicatum refers to the spike type seedhead. A vigorous stand at flowering time truly appears to be a wheat field.

It is a cool-season decreaser and one of the first to green in the spring. Healthy plants can produce up to one hundred leafy stems per plant which stay green throughout the growing season with normal moisture conditions.

Flowering occurs in mid-June with the seeds ripe by early August. At the seed ripe stage the half-inch awns are bent out at right angles. The seeds shatter soon after they ripen, leaving the glumes on the seed stalk appearing as shining dots up the stem in the early morning sunlight. Being a bunchgrass, reproduction occurs only by seed.

Bluebunch wheatgrass was a favorite of the millions of buffalo that grazed the vast open range before Montana was settled. Today it is an important forage plant for a large population of elk during all the four seasons. Big-horn sheep prefer bluebunch wheatgrass when available on their winter ranges. Mule deer make some use of it in the winter and they are crazy for the first green shoots in the spring.

Bluebunch wheatgrass produces a lion's share of the forage eaten by livestock. Cattle readily graze the bunchgrass in the fall and winter periods when available. Excellent gains are obtained on rangeland during the spring and summer when bluebunch wheatgrass is a major component.

An example of the value of bluebunch wheatgrass is noted in the diary of Granville Stuart, one of the first to bring cattle to Montana. He states in the diary that the winter of 1861/1862 was one of unprecedented severity. The snow averaged two feet deep and the thermometer registered above zero only four times in a three-month period, yet his cattle wintered well in the mountain valleys on just the bunchgrass and snow in southwest Montana.

No, we can't forget the horses; bluebunch wheatgrass is their favorite when available on the wind-swept ridges during the winter months.

Being such a popular grass, it is subject to overgrazing if the grazing is not controlled. It is essential to allow for seed production if bluebunch wheatgrass is to maintain itself. In the mountains and foothills, overgrazing weakens and starves out the bluebunch wheatgrass which is primarily replaced by the sagebrushes. With the use of chemical control or prescribed burning along with proper grazing management, the range condition can recover. On the plains, overgrazed bluebunch wheatgrass is usually replaced by low growing mat formers such as blue grama and dense club moss. Even with proper grazing management some form of mechanical chiseling is needed for the bluebunch wheatgrass to fully recover.

Research indicates proper range use on bluebunch wheatgrass should leave a four- to six-inch stubble. Overgrazing to a two-inch stubble will shock the plant severely. On the tenth of May on silty range sites with identical climatic conditions in southwest Montana I measured the height of new growth on bluebunch wheatgrass plants that had been grazed down to a two-inch stubble the previous year and also measured the new growth on plants that had been clipped down to a six-inch stubble. It was hard to believe the difference; the plants with the six-inch stubble had many new shoots averaging eight inches in height. The plants grazed to a two-inch stubble the previous year had about half as many new shoots that averaged only three inches in height.

In summary, bluebunch wheatgrass is a drought resistant perennial that produces an abundance of palatable forage if proper management is applied.

With its extensive distribution, bluebunch wheatgrass is a key range plant in the production of red meat on most Montana ranches.

So you can see, there are many reasons why we should give a little tender loving care to this pioneer to keep him going strong.

It is easy for me to see why in 1973, the Montana State Legislature designated "Bluebunch wheatgrass" the State Grass of Montana.