**Managing the Piñon Canyon Rangeland**

By Daisy Medina

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**Introduction**

Range, a word with so many meanings. To someone outside of agriculture, they may only understand range as a distance in which something is perceived; meanwhile, someone understanding of agriculture would find range and rangeland a kind of “land on which the native vegetation is predominantly grasses, grass-like plants, forbs or shrubs suitable for grazing or browsing use” (EPA). Rangeland has various kinds of uses such as grazing livestock, providing a habitat for wildlife, open space, and recreation. In Southeast Colorado, it is even used as a place for military personnel to train. The Piñon Canyon Maneuver Site (PCMS) is a prime example of an area where a very large acreage of rangeland is used to train military personnel. Although military training is essential to our country’s defense, it comes with its challenges, especially when the training is done on fragile rangeland. An example of these challenges are improving rangeland health, maintaining wildlife habitat, and wildfire mitigation. Thanks to the dedication of the professional rangeland management specialists and wildlife biologists at the maneuver site, they manage the rangeland to diminish any negative effects of military training and help speed recovery of the rangeland.

**Extent of the Maneuver Site**

Picture this, in the late 1970s and early 1980s, the height of the Cold War is upon the United States, and tension is high between the U.S. and the Soviets. The military leaders were looking for a place to conduct large scale maneuver type exercises, when the idea that would soon become Pinon Canyon Maneuver Site came to mind. Over a period of approximately three years, several large ranches along with a few small tracts of private land in Southeast Colorado were acquitted by the Department of Defense in 1983. The original acquisition was approximately 265,000 acres. However, in 1993, 29, 534 acres were transferred to the adjoining US Forest Service Comanche National Grasslands in order to better protect significant cultural and paleontological resources in the Picketwire Canyon. Today, the maneuver site is 236,000 acres and is the largest contiguous property in Las Animas County, Colorado.

**Attributes of the Rangeland**

The Pinon Canyon Maneuver Site is a remarkable place to visit and see. During my visit to the Pinon Canyon Maneuver Site, I was amazed to see and learn about this remarkable land. The maneuver site is the expansion of Fort Carson which is home to the 4th Infantry Division of the U.S. Army. Fort Carson is named in honor of the legendary General Kit Carson, who is famed for having explored much the west. The maneuver site is approximately 235, 896 acres (Global security) and is in Las Animas County, in southeastern Colorado, approximately 150 miles from Fort Carson. I had the opportunity to visit the maneuver site and interview the Natural Resource Specialists who work on the range management of the site. When I arrived at the PCMS, I instantly noticed the different ecological sites. The maneuver site is located in the shortgrass prairie region of the Great Plains and loamy Plains ecological site is the most common site out on the range; however, as we continued to venture through the rangeland, it was evident that there were others such as Sandstone Breaks and Shaly Breaks. An apparent detail that I took in was the brittleness of the land. How could the land not be so? Afterall, precipitation averages between ten and twelve inches. This can be problematic in the sense that it is a semi- arid climate. Another reason the land is so brittle or fragile is because there is a predominance of very shallow soils to moderately deep, which restricts range plant rooting depth. As I continued my visit, I was astounded to learn about the great care and devotion the resource specialists applied not only the rangeland, but as well as the care they put into the wildlife. Care for wildlife and their habitat is important on the rangeland of the PCMS. “The elk, pronghorn antelope and prairie dogs graze the land, and the rangeland becomes home to many animals such as burrowing owls, swift fox prairie dogs, and a multitude of raptors and other birds” (Riddle).

**Range Management on the Maneuver Site**

**Lack of Disturbance**

With an amazing view and remarkable landmarks, Pinon Canyon Maneuver Site is fascinating. The military maneuvers are confined to a very large central area of the maneuver site. Two main tracts of rangeland are rotated between years when maneuvers are scheduled to occur. According to the natural resource specialist, the condition of the range in this area is fair to good due to the rest and recovery time afforded between maneuvers. However, as I observed the range where military maneuvers don’t occur, it was difficult to overlook the detrimental effects of over-rested range plants. This long-term lack of disturbance has caused plants to become decadent. This unhealthy condition of the plants is due to the excessive buildup of standing dead plant material within the plant. This prevents sunlight from reaching leaves that are still alive and eventually weakens the plants root system.

A commonly used tool to help keep rangelands well maintained and properly functioning is prescribed grazing. While prescribed grazing may be a solution for some military training land, it was not practical on the maneuver site, due to the fact it would not be practical. “Grazing livestock on the maneuver site would be a direct conflict when training occurs” (Riddle). Not to mention, there is a lack of infrastructure to control grazing due to no interior fencing and lack of adequate livestock water. Although natural resource professionals on the Pinon Canyon Maneuver Site recognize the value of managing livestock grazing, prescribed grazing appears not to be an option for managing the range on the maneuver site, due to the constraints of the military training and lack of grazing infrastructure.

**Plant Decadence**

When we first stepped out of the vehicle and into the rangeland, it was evident that this over-rested land needed to have something done. I noted a lot of old growth and bare ground was significant. The standing dead plant material was overwhelming and caused plant growth to be much more difficult. In fact, the ring muhly that I found was dying on the inside, while the outside was still living. The bunch grasses, such as alkali sacaton, were weak and unhealthy looking due to this long-term lack of disturbance. Bare ground has increased due to the lack of litter and in return this has caused poor nutrient cycle, increased runoff, and more soil erosion.

**Invasive Plants**

A few invasive species have established in small areas in the maneuver site due to the unhealthy rangeland conditions. I was able to see cheatgrass or downy brome; I was informed that the cheatgrass was “especially found in places where fire had just burned” (Miller). The other two invasive species that I was informed about were African Rue and Russian Knapweed. Luckily, with the help of dedicated professional natural resource managers, these areas are continually identified and spot treated with herbicides to control their spread.

**Juniper Management**

Tending to the rangeland at Pinon Canyon Maneuver Site takes a considerable amount of help. There is a lot that goes into making sure the maneuver site is thriving with not only healthy wildlife and rangeland plants, but manageable for the military training use. One of the first pieces of information that I was informed about was the control of one-seed juniper. “In order to prevent fire from jumping across the main transportation road, the junipers that were grown within 150 feet of the road are being taken out by mastication” (Miller). I actually had the opportunity to watch as one of the juniper trees were masticated. This was done with a “Bobcat tractor with a masticator in the front” (Riddle).

**Prescribed Fire**

Prescribed fire is one of the tools used to manage the rangeland. “It is important that the area around the firing ranges is burned, so that an unintentional fire does not occur; although prescribed burning is only possible during certain time periods” (Miller). Even though the prescribed burns can be very beneficial to the land, too frequent burning can be bad for the land. Burning is essential to keeping the rangeland well maintained because Pinon Canyon Maneuver Site does not graze livestock; hence causing the major lack of disturbance that healthy rangeland ecosystems need. “The only animals to graze the land are the animals that live in the area such as elk, bighorn sheep, and black-tailed prairie dogs” (Riddle). The benefit to burning is the excessive standing dead plant material that was once present is no longer evident. The downside to prescribed burning is that litter is not increased, but bare ground temporarily increases until other range plants become established.

**Managing the Rangeland with Military Maneuvers**

Once military personnel and their maneuver training is complete, natural resource specialist go out and assess the impacts on the rangeland. “When the military goes out to train with heavy machinery such as tanks, these vehicles can create divots of bare ground where the machinery made abrupt turns” (Miller). This destroys the vegetation, hence the reason reseeding must be done. This is especially true after large brigades train at the maneuver site. The brigades are usually made up of 5,000 troops. I was surprised to learn that “compaction of the soil was not an issue due to the small amount of pressure being applied at each cleat of the track of a tank” (Miller). According to the natural resource specialists, this is due to the large number of cleats that make up each track on the tank. “When reseeding, the seed is chosen from local areas that are genetically similar to the existing range plants and therefore better adapted to the area” (Miller). The next time that the military comes through for training, “different areas will be suggested to them or they will be told which areas they should not train on due to necessary recovery time or to control impacts on cultural and historical sites” (Riddle). This will give the grasses, forbs and shrubs time to grow, instead of having the land be constantly impacted. To me this is quite fascinating to learn about all the work that goes into managing the rangeland on both lands impacted by the training maneuvers and on the land that is over-rested on the maneuver site.

**Conclusion**

Who would have thought that there is so much that goes into making sure that the land our military trains on is maintained as healthy as possible? I certainly didn’t, in fact, I wasn’t aware that the land military train on was managed at all. After my experience and learning about managing the rangeland at the Pinon Canyon Maneuver Site, I feel proud. So much work goes into taking care of the land and wildlife, it is truly amazing to see how things are accomplished at the maneuver site. If more people become informed on how managing the rangeland at the Pinon Canyon Maneuver Site and other military training grounds is being accomplished, more efficient ways of caring for the land can be learned and practiced. I wish to thank Mr. Rich Riddle, wildlife biologist on the maneuver site and Mr. Randy Miller, reclamation specialist at Fort Carson, for hosting my tour of the maneuver site and the information they provide me for my presentation.

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