THE REALITY of WILD HORSE and BURRO MANAGEMENT on WESTERN RANGELANDS

Dr. Eric Thacker, Utah State University, Logan Utah.

Good science provides valuable information by taking a systematic and objective look at issues facing humans and the world around us. One of the realities that we all must face is that western rangelands are limited in their ability to produce goods and services valued by society, such as: forage, water, open space, biodiversity, energy, and recreation. The most significant factor that shapes western rangeland is the low precipitation levels compounded by large precipitation variation from year to year. The results of limited precipitation and its highly variable nature create harsh growing conditions for plants and animals. Therefore, we must acknowledge that expectations and desires of goods and services provided by western rangelands must be tempered with the limitations of these system. Management of these lands reflect societal values. Today we are here to talk about wild horses because society demands that wild horses have a place on western rangelands. However, there is a debate about how we balance the management of limited rangeland resources for public goods and services. Today we are facing a dilemma in the west with the exponential growth of wild horse and burro populations on fragile rangeland ecosystems.

The 1971 Wild Free-Roaming Horse and Burro Act (WFRHB) provided protection for wild horses and Burros. The act directed the BLM and US Forest Service to manage horses in designated areas, referred to as herd management areas (HMA), with "minimal feasible level" of management while achieving and/or maintain a "thriving **natural** ecological balance" to ensure that rangeland was protected, wildlife habitat was protected, and the HMA ranges would be managed as "multiple use lands". Since 1971 wild horse numbers have risen dramatically, far outpacing the numbers of horses that land management agencies specified in their management plans. For example, as of March 2019, the population of wild horses and burros was 88,090, which 330% greater than the appropriate management level of 26,690 horses and burros set by the Bureau of Land Management. Research has shown that wild horse populations are growing between 15 – 20% annually, thus, creating the dilemma we face today of balancing the wild horse and burro populations against those of other wildlife populations and livestock within the context of the limited resources provided by the environment. Management of these populations will be required to meet the mandates of the act.

The reality of any large herbivore using a landscape is that there is a finite number of animals that can be supported on a landscape based upon forage, water, and space. This is often referred to as the carrying capacity, which is defined as, the number of animals that a piece of land can support on a long-term basis without causing damage to the ecosystem. However, due to the highly variable growing conditions that exist in areas occupied by wild horses, the carrying capacity can fluctuate dramatically on an annual basis.

Range scientists have developed principles to manage grazing in a sustainable manner. The four principles of grazing management are **1- number** (how many animals), **2- time** (how long will the grazing occur), **3- timing** (season of use) and **4- Intensity** (how much forage will be removed).

When managing livestock, rangeland managers will carefully control the number, time, timing, and intensity of livestock use to ensure that livestock does not damage forage and water resources. Often controlling the number of animals is the easiest option, it directly impacts the other three principles, and it is the simplest to implement. Different grazing management

strategies can be implemented to vary time, timing, or intensity to for different objectives. For example, range managers can alter the timing of grazing to give plants rest during critical growth stages, or managers may shorten the grazing season to provide a portion of the growing season for the forage to rest or recovery.
Similarly, wildlife managers manage wildlife populations to ensure the long-term stability of populations by ensuring sustainability of wildlife habitat. Wildlife managers manage populations with hunting seasons to remove excess animals, and hunting pressure can be used to move wildlife species such as elk and bison around the landscape or from areas where they may be causing problems. Additionally, native wildlife also have predators that can regulate populations, providing natural checks and balances that help control populations, which in turn protects the habitat.

Wild horses present a unique management challenge because they are free-roaming animals that have no natural predators, and therefore, they lack an ecological population regulatory mechanisms to limit populations. Therefore, if left unmanaged populations will grow rapidly until forage resources are limited and individual horse fitness declines, thus negatively affecting, pregnancy rates, foal survival, adult survival, and limiting population growth. However, this creates a catastrophic scenario because by the time horse - fitness declines enough to curb population growth, the forage and water resources of the rangelands have been lost or severely degraded. This will mean that all other uses of these rangelands will be limited or lost. This will negatively impact things like wildlife habitat, biodiversity, recreation, and forage production. It could also spell disaster for sensitive or threatened wildlife species such as the desert tortoise and greater sage-grouse. Managing free-roaming wild horses and burros is difficult because range managers cannot manage time, timing, or intensity of wild horse grazing. So land managers are only able to manage grazing by controlling numbers of horses and burros. Therefore, managing wild horse populations is one of the most critical aspects of wild horse management to maintain a "thriving natural ecological balance." The 1971 wild horse and burro act recognized the need to manage populations and provided tools to do so. Therefore, it is imperative that land managers have the ability to manage the numbers of wild horses to ensure sustainable management, but to accomplish this, the status quo will not work. There is a need for a shift in wild horse management paradigms.

The reality is that rangelands are already showing signs of degradation due to excess wild horses. There is a preponderance of evidence concluding that excess wild horses cause rangeland degradation. Research has concluded that too many horses will lead to reduced grass, forb, and brush cover, which leads to more bare-ground, soil loss, and loss of forage. This also reduces the quality and quantity of wildlife habitat, negatively impacting wildlife populations. Excess wild horses and burros also have negative impacts on water resources important for wildlife in arid regions. As daily temperatures increase, wild horses occupy water holes more frequently and displace native wildlife such as pronghorn, elk, and bighorn sheep. Research has shown that the presence of wild horses reduced the diversity and species richness of all native wildlife species found using water holes. Excess wild horses are currently causing ecological damage and displacing native wildlife. If populations continue to grow exponentially, rangeland and wildlife damage will increase exponentially as well.

Currently, the BLM has limited options to manage wild horse grazing in such a way to ensure sustainable management of rangelands. The BLM and US Forest Service conduct limited gathers and attempt to adopt horses and burros or send them to long-term, off-range holding facilities. They have explored the use of contraceptives and have had some limited success. However, the current management approach is not working. Wild horse and burro numbers continue to grow at a rapid pace, and the gather and adopt management model is not working. It is often suggested that allocating more land to wild horses would solve the problem; however, it would increase the scale and magnitude of the problem. Wild horses and burros have shown incredible resilience. With rapid population growth rates they would fill up any additional space provided, only offering temporary relief of the situation. Others have suggested that the BLM could use contraceptives more broadly; however, there is little research to support the suggestion that contraception alone can reduce current wild horse populations. Contraception can slow growth rates, but there are some real logistic concerns when you have horses inhabiting vast, remote, rugged areas that do not lend itself to easy access to the horses.

The reality of wild horse and burro management is that the BLM does not currently have the tools necessary to adequately manage wild horse and burros in a manner that will ensure a "thriving natural ecological balance." Actions must be taken to address the problem. We are in a triage situation if we do nothing we could have almost 500,000 horses by 2030years. The complexity of the wild horse problem suggests that the best path forward will be a combination of increased gathers to remove excess horses coupled with populations control strategies (contraception and sterilization) and increased adoptions to maintain populations at adequate levels. We must rely on collaborative solutions that have identified palatable management solutions across diverse groups of stakeholders that understand and recognize the reality of the wild horse and burro problem.

REFERENCES

Boyd, C. S., Davies, K. W., & Collins, G. H. (2017). Impacts of feral horse use on herbaceous riparian vegetation within a sagebrush steppe ecosystem. *Rangeland ecology & management*, *70*(4), 411-417.

BLM Wild horse and Burro Data: Population Estimates: https://www.blm.gov/programs/wild-horse-and-burro/about/data/population-estimates (Accessed July 10, 2019)

BLM. "Wild Free-Roaming Horses and Burros Act of 1971" (PDF). Bureau of Land Management https://www.blm.gov/or/regulations/files/whbact_1971.pdf. (Accessed July 10, 2019).

Danvir, R. E. (2018). Multiple-use management of western US rangelands: wild horses, wildlife, and livestock. *Human–Wildlife Interactions*, *12*(1), 4.

Davies, K. W., Collins, G., & Boyd, C. S. (2014). Effects of feral free-roaming horses on semi-arid rangeland ecosystems: an example from the sagebrush steppe. *Ecosphere*, *5*(10), 1-14.

Hall, L. K., Larsen, R. T., Westover, M. D., Day, C. C., Knight, R. N., & McMillan, B. R. (2016). Influence of exotic horses on the use of water by communities of native wildlife in a semi-arid environment. *Journal of Arid Environments*, *127*, 100-105.

Wild Horse and Burro Management (2018). *Human–Wildlife Interactions*, *12*(1) https://digitalcommons.usu.edu/hwi/vol12/iss1/