

THE WILD WEST: FERAL HORSE HEALTH AND MANAGEMENT

David Hunter, DVM
Turner Enterprises, Inc.
Turner Endangered Species Fund
Bozeman, MT

For the general public there is no debate or any negative issues surrounding feral/wild horses on public lands in the West. The sight of these horses creates an emotional and passionate sense of the history of the "Wild West." The public can visualize cowboys herding cattle on long drives along the Chisholm Trail. Biologists, ranchers, and scientists see these horses from a different perspective. The horses considered wild by the public were actually brought to North America by European settlers. When they escaped or were released they became feral. The mandate by the agencies in charge of public lands (including the Bureau of Land Management, US Fish and Wildlife Service, US Forest Service, state wildlife and land agencies) is to manage and control the habitat utilization by native wildlife and commercial livestock grazing public allotments. These agencies must consider all desires by these competing entities. State wildlife agencies also have a vested interest in how this division of habitat resources is handled for the wildlife within their individual states. Large landowners impacted by these horses must be included with the state and federal agencies in the decision making process. Horses are a competitor for ever diminishing nutritional resources on these public and private landscapes. Conflicting interests associated with increased number of people recreating into feral/wild horse ranges, sympathy to maintain horse populations because of their historic and cultural importance, competition among horses and indigenous plant and wildlife species, as well as ranching interests are all impacted by wild/feral horses. Currently, overpopulation by these horses has become an issue due to the fecundity and a lack of predators on these lands.

"FERAL VS. WILD? BRIEF THOUGHTS ON WILD HORSE CONSERVATION"

What is the definition of true North American wild horse? Is it Spanish Barbs, Spanish Mustangs brought by Columbus and Cortez in the 15th and 16th century? Actually, the last true wild horses are the Tarpan and Przewalski's horse. The last North American equid extinction occurred between 13,000 and 11,000 years ago.

As you consider the conservation value of the work toward preservation of mustangs (and burros), it's important to note that the animals they focus on are not wild horses, but rather feral domestic horses. These animals are not truly "wild" in the biological sense of wild animals having no domesticated ancestors. But, the key element in describing an animal as a native species includes 1) where it originated; and 2) whether or not it

co-evolved with its habitat without human manipulation. Critics of the idea that the North American wild horse is a native animal, using only paleontological data, assert that the species, *E caballus* (or the caballoid horse), which was introduced in 1519, was a different species from that which disappeared 13,000 to 11,000 years before. Herein lies the crux of the debate.

The Tarpan (*Equus ferus ferus*) and Przewalski's horse (*Equus ferus przewalski*) are the only two never-domesticated "wild" groups that survived into historic times. The Tarpan became extinct in the 19th century. Before its loss, the Tarpan was the most likely ancestor of the domestic horse and roamed the steppes of Eurasia at the time of domestication.

In contrast, the Przewalski's horse was saved from the brink of extinction and is now the subject of a recovery program based on reintroductions in Mongolia. If investment in wild horse conservation is truly important, horse enthusiasts should become active in this effort.

The term "wild horse" is frequently used colloquially to refer to free roaming herds of feral horses such as the mustang in the United States and the brumby in Australia. These feral horses are untamed members of the domestic horse subspecies (*Equus ferus caballus*), and should not be confused with the two truly "wild" horse subspecies: Przewalski's horse and the extinct Tarpan.

There are behavioral and morphological differences between wild horse and feral domesticated horses. A most obvious difference is the mane of domestic horses which lies flat along the neck, whereas the mane of wild horses stands upright.

From the viewpoint of horse enthusiasts, they were here before and now just reintroduced (although the ancient horses were very small and different subspecies). It does bring up the question of re-wilding North America with what species and to what level. That is indeed a question for a different presentation. Basically, these horses are indeed feral horses running wild. Spanish barb, Spanish mustangs are the oldest reintroductions but they are still not considered native by wildlife managers.

"THESE FREE-RANGING HORSES ARE HARBORAGES OF DISEASE AND PETULANCE"

These horses have long life spans and appear resistant to predation or *disease*. It is well documented that "*wild*" horses can quickly overpopulate a habitat without disease or predators. We all know with concentration and overpopulation, pathogenic organisms have better opportunities to thrive and spread their DNA. All health issues are then directed at habitats and carrying capacities. Healthy habitats produce healthy animals...

There is not much literature on non-human-induced die-offs of these horses. Besides a few parasites, the majority of literature concerning a disease issue was a roundup of thousands of wild horses over several years as an attempt to prevent a serious outbreak of equine infectious anemia (EIA). EIA is a highly contagious and

deadly disease of horses. These roundups were to prevent spread and distribution to other horses. The worry was the potential spread to privately owned horses in proximity to these herds. It is spread by blood-feeding insects (tabanids, horseflies and deer flies) and remains a blood born infection in equids. Many herds were gathered by cowboys and helicopters and tested with negative animals returned to the wild. When the testing was complete, very few of the feral horses were identified as infected or exposed. This was a costly endeavor.

“ROUND-UPS AND ADOPTION ARE NOW THE ANSWER TO OVERPOPULATION”

Answer: Yes, but costly. Round-ups and adoption are now a control tools used by many state and federal agencies for controlling horse populations. The “Adopt-a-Horse” programs are popular in many areas, but saturation of unwanted horses becomes problematic. The costs of such programs are staggering.

Enthusiasts now believe there are a number of situations in which it is desirable to suppress part or all of the reproduction in selected horse populations. Feral/wild horse populations in Nevada grow at a rate of 15% to 20% a year on state lands. In the past decades therapeutic approaches to reproductive endocrine suppression include gonadectomy and progestagen administration. The former carries surgical risks and entails irreversible loss of breeding potential, whereas effective progestagen therapy requires frequent administration for extended periods. Neither approach was satisfactory for controlling horse populations on large landscapes.

Round-ups for handling and processing these horses safely and with minimal costs of machinery and personnel are critical.

THE TURNER EFFORT

The Vermejo Park Ranch in northern New Mexico is 584,000 deeded acres and has ecotypes from short grass prairie to sub-alpine. The horse population has grown from an estimate of 55 to 65 in 1998 to approximately 250 to 350+ in 2008. The horses appear to be in 5+ bands with stud horses fighting for territory and harems. They roam over a large portion of the ranch. The owner wants to remove all the horses while other family members want to leave a few for the “wild” aesthetics. The easiest method would be to euthanize via lead projectile—but this is unacceptable to the family and against the law.

Several alternatives were discussed by TEI/TESF personnel over the years. The gathering of the horses through the varied terrain cannot be accomplished by horseback or helicopter. Baiting the horses to a corral was the only feasible way to capture horses. What then?

One person came forward and vowed he could bait the horses with his “horse candy” and trailer them to any location for handling and processing. The amazing part was that he did not need nor want any help from ranch personnel. He would do it on his own. Sometimes in life

you must trust an individual to “back up his boast.” Realistically he did not promise to capture 100% of the animals, but thought 70% to 90% was reasonable. During the first year he captured and handled all but 105 horses. The horses were all processed according to state regulations and sold.

He was able to capture the horses, calm them, and push them into the trailer without assistance. He works the horses only at night and wears a strobe light on his hat. The horses respond to the strobe and a touch on the rump they calmly walk into the trailer. This technique was used over the spring and summer months of 2008. He is currently working the remaining horses.

“WHAT WILL BE DONE WITH HORSES LEFT ON THE RANCH? “

Controlling fertility with long acting (potentially permanent) birth control is our current plan. Reducing fertility in free-ranging horses is considered the only viable option for these remaining animals. The ideal method for controlling fertility in these horses should be humane, safe, effective for years, practical to administer and have a reasonable cost. It should also have minimal effect on herd behavior. We were hoping for a one-time injection with permanent results.

We compared several methods of contraception that best fit our criteria. Copper-containing 380 ‘T’ intrauterine device (IUD) was suggested and not really a good fit for any remaining animals on the ranch.

The second potential method was to use a porcine zona pellucida (PZP) vaccine (Spay Vac). PZP vaccine has been studied in horses for many years. The potential for use on the ranch was considered high on our option list. In tests against the IUD and GnRH vaccine, ZPZ proved effective in contracepting horses for several years. The vaccine is safe for use in horses and the drawback was the potential for multiple cycling of the mares.

The third option was the gonadotrophin-releasing hormone (GnRH) vaccine (GonaCon). This vaccine had a high degree of contraception the first year, but this rate did decline over time. This test was done on a one-time vaccination of GnRH vaccine. GnRH is a small decapeptide compared with the relative large glycoprotein of PAP. GnRH was selected for our trial on the ranch as it also can be used in both sexes left in the population. The effect on males of lowering testosterone and spermatogenesis would allow us to leave some stud horses in the herd.

In this context, preventing the action of gonadotropin releasing hormone (GnRH) by blocking its pituitary receptors is an attractive alternative for rendering mares anestrous and depressing testosterone secretion or spermatogenesis in stallions. We considered reviews of the data on effects, efficacy, and reversibility of the different methodologies. Because of the effects of GnRH vaccines, antagonists, and agonists in suppressing reproductive activity in both sexes GnRH was selected as a potential for managing the horses on the property. The hope is that it will render reproduction at a negative

or substantially lowered level. Researchers are working on a programmed release and adjuvant to increase the long-term results. Future captures may be necessary if the population and horse bands begin expand with time.

The back-up scenario is that we remove a large percentage of the horses when they reach a “critical mass.” If we are unable to capture 90% of the horses this may be the only feasible alternative left to the ranch. If the GnRH vaccines are able to be administered in a one-dose, small volume formulation the option of darting could assist in the control. Darting, either from the ground or from a helicopter, could be accomplished for a small number of horses.

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