Horse Manure on the Trails: Should we do something?
by Lyndall Erb, PhD for ELCR
June 2019

Understanding the Trail Horse – Our Heritage in Horses

Horses were once our primary source of transportation. Photo Courtesy National Park Service

Horses have been a critical part of human progress from the early days of our history. They have carried men and supplies in times of war and peace, pulled the plows of farmers' fields and were the main source of transportation during the settlement of the American west. Horses were the backbone of farms, the transportation to town for supplies and social activities, and a family necessity. Historically, many trails were created by horses ridden by people who needed to get from point A to point B. Today those trails are a critical part of recreation in open spaces and parks. Over the decades, the role of horses in daily life greatly diminished in both importance and numbers. As a result, horses are little understood by modern community members, especially trail users.

The modern horse is generally confined to a barn or small (5 acres or less) pasture area. They are mostly used for pleasure riding, showing, racing and the like. A few modern horses are working horses, and most of those are used in ranching and the production and management of other livestock. Many horses retire from 'work careers' to become pleasure and trail horses.

The Rise of Trail User Conflicts

A decrease in the number of boarding stables in or near urban areas, and community planning and zoning ordinances that place farms further away from urban areas place the typical trail user, or for that matter, equine enthusiast, far from any horse facility. This lack of access to horses creates a situation where many trail users have no experience with them. The number of horses on the trails has rapidly diminished in the last 100 years while the number of hikers and bike riders has increased exponentially. This has created the potential for conflict between the user groups. For example, hikers and equestrians don't like fast bikes, mountain bikers want the challenge of single-track trails, and everyone wants to be out in open space enjoying the day. And no one wants to be told that they can't be there, or they aren't welcome.

Unfortunately, the increase in trail use and the lack of horse experience has created a newer conflict between users – horse manure on the trail. Hikers and bikers see a wet pile of "poop" on the trail. Modern society is generally repelled by manure of any sort. We have learned that it is something bad and possibly dangerous. So, the common question is, why do equestrians think it's okay to leave horse droppings on the trail? Especially since we must pick up dog poop!

The Biology Behind Manure (and Feces)

Manure is the common term for animal excrement that can be used for fertilizer. Feces is a more general term for all animal excrement of the number 2 variety. Mammals can be broken into groups according to the types of food they eat: herbivores - deer, cattle and horses eat plants; carnivores – dogs and wolves, large and domestic cats eat meat; omnivores - pigs, bears, and humans eat meat and plants. This makes for very different digestive systems and very different by-products of digestion.

Horses and other herbivores have a complex system to break down plant material as they eat. Horses are considered grazers, meaning they eat mainly grasses. Bacteria in their stomach break down cellulose in plants which releases plant nutrients. The horse's digestive system absorbs the nutrients and the partially digested grasses become manure. Horse manure is basically grass bits formed into balls by enzymes in the horse gut. When deposited it is wet, but it dries quickly. When it's dry it is like grass on the trail.

Dogs, being carnivores, eat mainly meat, although we feed them food that contains broken down plant products. Their digestive system is able to extract the nutrients with enzymes and some bacteria but is not designed to break down cellulose. The by-products of this type of digestion is likely to contain undigested meat and possibly pathogenic bacteria. This means a more odious and less environmentally friendly "poop," or fecal matter.

Due to the similarities between carnivores and omnivores in the method of digestion, these groups are more likely to be able to spread zoonoses (zoonotic diseases) than herbivores. Zoonosis is any disease or infection that is naturally transmissible from vertebrate animals to humans and vice-versa. Zoonoses have been recognized for many centuries, and over 200 have been described. They are caused by all types of pathogenic agents, including bacteria, parasites, fungi, and viruses.

The coyote - representative of the canine carnivore. Photo Courtesy US Fish & Wildlife Service.

Canines and felines are carnivores and have types of bacteria in their stomachs that may include some harmful to humans. For example, toxoplasmosis is an example of a disease humans can get from cats. While reducing the risk of zoonosis is important, it is not an easy task given the human animal interactions that occur. Food borne bacteria is probably one of the more common zoonoses, but tracing the source is difficult. Of course, the presence of fecal matter is often the source of spreading zoonoses. This is probably the main reason it is important to pick up after our dogs, and to keep certain types of animals away from our food sources.

But what about horse manure? Several studies over the years have shown that very few pathogenic bacteria exist in the horse gut, and most of those (probably 99%) do not affect humans. In the past 100 years, there have been very few reported cases of horse caused zoonosis and of these most were not serious. Normal contact with horse manure on the trail will not cause disease. If it did, horse caretakers over the centuries would have been ill, often.

Cows, in the process of traversing trails and open land, become the source of prodigious “cow pies”. While herbivores, they have a system of stomachs to digest their food, which may allow foreign bacteria to exist that could be harmful to humans. Cases of human illness from contact with cow manure have been reported. However, recent research from the University of California, Davis, found that areas with cattle grazing in the national forest did not have higher levels of bacteria than areas not grazed.

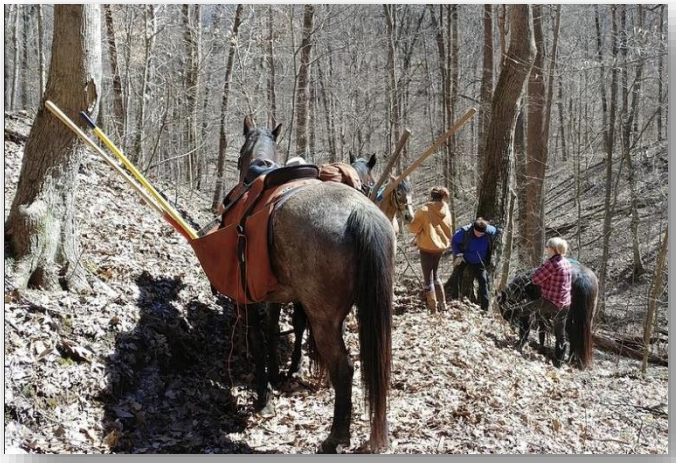
While it may be inconvenient on the trail, horse manure is not dangerous. It does not cause disease, nor does it carry invasive weed seeds that will germinate. Educating other users and cooperating with other user groups to maintain trails are two basic actions that can be extremely beneficial to the equestrian trail community.

What You Can Do

Manure bunkers help you to keep trailheads clean. Photo Courtesy Bay Area Barns and Trails.

The idea that equestrians are careless manure droppers who do nothing to maintain trails is still out there. We must be constantly aware of how our fellow trail users see us. Are we doing enough to educate the public about this perceived nuisance? Here are some direct actions that equestrians can carry out to help alleviate the amount of horse manure on the trail, and the resultant non-equestrian user complaints:

- Scoop Your Horse’s Poop. Most horses will eliminate when they first start out on a ride, so getting groups together to clean trail heads will help improve the impression other users get of equestrian riders and their horses. Remove droppings and put them back in the trailer to take home; or organize a manure bunker at trail heads, at the discretion of the property manager. There is nothing worse than piles of manure, hay and shavings in the middle of a parking lot to put other users in a bad mood.
- Participate in Planning. Encourage the inclusion of a separate parking area for horse trailers, and a separated trail from the trailhead out some distance just for horses. See first elimination, above.
- Take an Edge. Try to move your horse to the side when you notice they are about to eliminate, although this is not always possible.
- Practice the *Down-Kick-Up* maneuver. If you are able and it’s safe, dismount and kick the pile to the side of the trail. You must know your horse and surroundings before attempting an on-trail dismount and remount.
- Party! Invite the community to trail event/cleanup days. Make friends, provide food, have fun, do a little ‘*poop-ucation’*.
- Grab Your Adz! Join your group and other users for some trail maintenance work.



Carrying in tools with horse and paniers for long distance trail maintenance. Photo Courtesy Equine Trail Advocates.

Other trail users, such as hikers and mountain bikers, are much more numerous, and better organized, than equestrians, so it behooves "us" to work with "them" to maintain our trails access together. Public land managers should play a leading role in the planning, use and maintenance of trails. Collaborative events and trail maintenance days, as well as educating the trail and general community about equestrian trail use will help them to understand the rider, the horse and the manure, and how we can all get along with a little effort on everyone's part!

Lyndall Erb is board president of Bay Area Barns and Trails, a nonprofit organization located in California that assists landowners and land managers with preservation and maintenance of publicly accessible barns, stables, pastures, staging areas, horse camps, and trails throughout Alameda, Contra Costa, Marin, Napa, San Mateo, San Francisco, Santa Clara, Solano, and Sonoma Counties. Lyndall has a PhD in Physiological Ecology from UC Davis, where she studied animal physiology and husbandry. She has spent several years studying horse manure on trails.