HORSES DON'T CAUSE EXCESSIVE PHYSICAL IMPACTS TO TRAILS

and

EQUESTRIANS NEED REASONABLE HORSE TRAILER PARKING for EQUITABLE ACCESS TO PUBLIC LANDS

A Position Paper of the Boulder County Horse Association
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Abstract

Horses have long been iconic of the diverse American traditions of farming, history, ranching, mining, exploration, settlement, hunting, agriculture, outdoor recreation, wilderness, wildlife, and nature appreciation on public lands. Of the approximately 6.9 million horses in the United States, about a third (2.9 million) are used as recreational trail companions and a means of transportation into front country and backcountry settings (American Horse Council, 2001). About 145,000 horses call Colorado home, and approximately 57,000 of those horses are considered to be recreational trail horses, including pack stock (Colorado Horse Development Authority, 1999; AHC, 2001). In Colorado alone, recreational trail horses provide a $500 million economic benefit and support 5,200 full-time jobs – the state's largest equine-related category (AHC, 2001).

In recent years regulatory pressures have increased on all forms of recreation, from municipal parks to National Parks. Although statewide the number of acres in the public domain has increased, and trail mileage has increased somewhat, neither has increased as fast as the population; meanwhile, maintenance budgets have been shrinking. These imbalances have created tensions among trail user groups, environmentalists, and public land managers, as each constituency fights for its share of what it sees as a shrinking pie. Equestrians have come under more than their share of scrutiny, including generalized anxiety from others about whether horses spread noxious weeds, frighten (or trample) the wildlife, erode the landscape, pollute the water, or intimidate the citizenry.

The Colorado Horse Council, Back Country Horsemen of America, Boulder County Horse Association, and others have conducted extensive research into the available literature on this subject, and we have discussed the issue directly with researchers in the field and with agency personnel. We also contribute considerable personal experience representing thousands of trail miles ridden. This paper summarizes that data.

It is our professional belief that horses are not responsible for causing undue erosion to trails or other natural landscapes. Equestrians need reasonable trailer parking to be able to access our public lands. We support best management practices to minimize the impacts of horses on public lands, and we outline some of these principles in this paper.

Introduction

Public lands in Colorado are managed for a variety of purposes. Most public land management agencies try to implement a set of best management practices to balance ecosystem protection with passive recreational opportunities.

However, in recent years attempts have been made to prioritize the purposes for open space, with various stakeholder groups each claiming that their interests should receive the highest priority.

A large part of "the horse problem" is that the public, the politicians, and even some professional land managers just don't understand horses. Horses are seen as being too big, too remote, too "different," too complex, too rare, and in some places too "politically incorrect," for some people to try to understand them. Even the word "equestrian" sounds foreign somehow. And equestrians often don't understand the land managers, the politicians, and the non-horse-owning public. Horse owners are traditionally too busy caring for their livestock to take the time to study the problem and its solutions; in what little free time they have, they just want to be left alone to enjoy their horses. The situation has been more or less manageable for a hundred years, but increasing squabbles among these groups in the 21st century call for improved communication and attempts at mutual understanding.

The research discussed below specifically evaluates the impact, or lack thereof, of horses and equestrians on trails and other physical components of natural ecosystems. While there is no doubt that every activity undertaken by every organism on earth has some effect on every other natural resource, we believe the preponderance of the evidence shows that equestrian activity has such a small effect as to be negligible.

We also believe that it is not appropriate to "ration" horse trailer parking in an attempt to restrict horses to public lands. We conclude this paper with a statistical analysis of the relative low numbers of horses to other passive recreationists, and we document the desire of equestrians to access open space in Boulder, Colorado.

The Claims Against Horses ("Fear" vs "Facts")

Fear: *Some land managers and others worry that horses are disproportionately responsible for eroding trails. They contend that horses should be severely restricted from public lands to protect the trails.*

Facts: There is some evidence that a single horse passing across the landscape has more physical impact than a single hiker. However, the cumulative effects of horses on the physical environment are anything but clear or definitive; in fact, some studies even contradict themselves. Building and maintaining trails properly minimizes impacts.

For example, some research indicates that horse traffic can reduce vegetative cover more quickly than foot or bike traffic, and that the greater weight-per-square inch of

horses' hooves compared to hikers' boots may compact soils to greater densities and depths (Nagy and Scotter 1974, Liddle 1997, Widner and Marion 1993).

To keep things in perspective, the hoof load of an average shod horse is 40 pounds per square inch (psi) and an unshod horse is 12 psi; whereas the hoof load of an average cow is about 80 psi, and an elk is about 700 psi (van de Tol, 2004; Kelsall and Telfer, 1971; Tabor, Trauth and Hartman, 2007). Mountain bikes weigh in at about 35-50 psi, and hiking boots can exert up to 1200 psi (Weir, 2000).

DeLuca et al (1998) found that soil loosening and detachment by horses contributed to higher erosional rates, but that soil compaction and decreased infiltration were not as important for equestrian use as for other types of trail use.

Horse trails are sometimes wider than hiking trails, which may result in greater soil exposure and erosion potential (Weaver and Dale 1978). A few studies found that trampling by horses was higher than that of hikers, llamas, mountain bikes and even off-road motorcycles (Cole and Spildie 1998, Wilson and Seney, 1994). However, Bovet (personal communication, 2000) conducted a carefully-controlled trampling study in an undisturbed grassland and found that mountain bikes had the greatest impact, followed by hikers and least by horses.

McQuaid-Cook (1978) observed that horses' hooves may puncture the soil surface, but concluded that physical "trail impact was more a function of slope and trail location than a result of [any particular] user type."

Nagy and Scotter (1974) concluded that although horse use may cause more trail damage than hikers, the degree of difference depends on the soil, vegetation, topographic and climate characteristics.

Cole (1987) and Leung and Marion (1996, 2000) found that many trail impact problems are the result of poor location rather than higher impacting types or amounts of use.

In a thorough, five-year study, Summer (1980, 1986) concluded that horse traffic "on montane landforms" was not the predominant factor in trail erosion. Instead, parent material (soil source), grade of trail, side-slope, soil texture, organic content, rockiness, vegetation, drainage, landforms, geomorphic processes (such as gullying and slumping), climate, and catastrophic events were all more influential in degrading trails than horse use.

"The bottom line is that horse trails can be maintained on most natural areas without unacceptably impacting ecological values" (Williams and Conway-Durver, 1998).

So the jury may still be out on the absolute and relative impact of horses on erosion and trails. Trail location and design are more important for trail sustainability than the types of visitors using the trails, including equestrians. There are times and places where wet conditions or poorly-designed and poorly-maintained trails mean that horses will affect the trails, just as all other visitor types will.

In general, trails that are open to horses and trails that are not open to horses are similar in sustainability and appearance on Boulder trail systems, so it is reasonable to conclude that horse use is not disproportionately damaging to trails in Boulder County.

Fear: *If we allow more horse trailer parking, pretty soon we'll be overrun by horses.*

Facts: The number of horses on a given parcel of public land is dependent on the amount of horse-trailer parking, and on a handful of neighbors with horses. Many trailers accommodate two horses, and a few can hold six or more; however the typical horse trailer at the time of this writing is a three-horse trailer pulled by a standard pickup truck. The average horse trailer with 3 horses in it would allow a maximum of 1,095 horses to be ridden every day per year.

The West Trail Study Area on City of Boulder Open Space & Mountain Parks (OSMP) is one of the most popular places for equestrians to ride. However, there are only two nearby trailheads: Doudy Draw, with parking for three horse trailers (9 horses), and the new South Boulder Creek West trailhead, with parking for an additional 3 trailers (9 horses). Therefore, the maximum number of horses that can possibly be out on this open space arriving in horse trailers, at the time of this writing, is 18 horses per day, for a total of 6,570 horse visits per year. Neighbors claim to have about 24 horses within a mile of the West TSA Open Space, for another 8,760 horse visits per year, maximum. A typical ride on this open space is about 10 miles, which takes about five hours, long enough that there is unlikely to be any doubling up of riders or trailer parking spaces during the day. If every one of those 42 horses was ridden only on the West TSA Open Space every day of the year – rain, snow, or shine – for the full five hours, there would never be more than 15,330 "horse visits" to the West TSA in a given year.

This vast swath of public land encompasses 11,250 acres, or 17.5 square miles. Before the West TSA process was completed, all 75 miles of designated trails were open to equestrians (VMP, 2005). After 18 months of intense negotiation among recreation representatives, conservation representatives, and staff, an agreement was reached by the Community Collaborative Group (CCG) in March 2011 wherein horses would be allowed on 50 miles of trail, allowed off-trail on 6,740 acres of Natural and Passive Recreation Areas, restricted seasonally on several hundred acres of grassland, and not allowed off-trail at all on 3,960 acres of Habitat Conservation Area. At the end of the process, involving many of the CCG and OSBT recommendations being overridden by the Boulder City Council, equestrians had lost about 30% of trails that had previously been open to horses and about 85% of their historic off-trail access.

The West Trail Study Area Plan (OSMP, February 2011) indicates that this TSA receives 40-45% of total OSMP annual visits, or 2,000,000 visits per year.

For all of OSMP, staff estimates that equestrian use is about 2% of all visitors (that would be about 40,000 for the WTSA). As a result of the West TSA outcome, maximum horse use can be only about 15,330 (0.75%) of all users there – because there is not

enough room to park. If the West TSA were to accommodate its proportional, equitable share of equestrians, the additional 24,670 equestrian visits per year (assuming no additional neighbors with horses) would need an additional 22 trailer parking spaces.

Many of the trails open to horses are in the far north-central and northern extremities of the West TSA, where the only historic trailer parking in that area has been encroached upon by passenger cars or removed entirely by OSMP and replaced with new fences. Merely reaching these areas (e.g. Chautauqua and Flagstaff) from the only existing trailer parking (Doudy Draw and South Boulder Creek West) requires a 14 mile and 20 mile round trip ride, respectively – well beyond the capability of most recreational trail riders. One trail area (Anemone/Red Rocks/Sanitas) is completely inaccessible to horses from any existing trailheads due to even greater distances (30 miles round trip), urbanization and city traffic.

During the West TSA process, BCHA identified several areas for limited trailer parking to help alleviate the access problem for equestrians: Chautauqua, Flagstaff, Top Shop (on Flagstaff Rd just past Realization Point), Centennial/Sanitas, Chapman Drive, and Linden Drive, among others. We asked for a modest one or two "slots" at each of two or three strategic locations. If only 6 of these proposed spaces had been granted, the maximum number of "horse visits" to the West TSA might increase by 18 horses per day, or an additional 6,570 horse visits annually… on 17.5 square miles. That's about one horse for every square mile of Open Space, assuming every trailer was filled and each parking space was filled to capacity every day of the year.

The Community Collaborative Group (CCG) recommended that OSMP make its "best efforts" to create additional trailer parking at some of those locations, and the Open Space Board of Trustees (OSBT) unanimously supported that recommendation. However, the Boulder City Council summarily denied both groups' recommendations.

We sincerely appreciate that equestrian use is allowed on OSMP, but to be meaningful it should be part of the infrastructure of OSMP. If equestrians can't get there, they can't ride there. The lack of trailer parking results in a *de facto* closure of large areas of open space to horses, despite the official policy.

One of the areas identified for additional trailer parking during the WTSA was the Schnell property at the base of Chapman Drive, and the future extension of the Boulder Canyon Trail. It has recently (January 2015) been purchased by OSMP, which is considering a proposal for a private beergarden on the property. The Boulder County Horse Association respectfully requests that a modest area be set aside for trailer parking on Schnell so that equestrians have some hope of accessing the West TSA.

Fear: *People don't like horses / are intimidated by horses.*

Facts: The odds are that at the current visitation rate you might encounter 130 people for each horse you meet in the West TSA (2,000,000/15,330). If equestrians were given the small amount of additional horse trailer parking we requested above, the odds of

encountering a horse would rise to 1 for every 90 people (2,000,000/(15,330+6,570)). That's not even close to 2% (40,000) – it's still only about 1%.

According to a 1999 OSMP telephone survey (VMP, 2005), approximately 1-2% of all visitors were equestrians -- but 45% of respondents said that encountering horseback riders "made their experience much or somewhat more pleasant." A Boulder County Parks & Open Space Survey conducted in 1997 found that about 2% of its visitors were equestrians but that "57% of respondents declared that horseback riding was "very important or fairly important."

"The public clearly enjoys seeing horses on the trails; visitor conflicts are not an issue." – OSBT memorandum to Council, 2011.

Fear: *Horse trailer parking is unjustified because of the low use and high cost.*

Facts: If horse trailer parking is not provided for those equestrians who are not fortunate enough to live next to open space, these public lands will become more *de facto* private preserves for the lucky few who do live there.

An average truck and trailer take up about the same amount of space as three cars. If trailer parking is incorporated into trailhead planning, it does not need to incur a high incremental cost.

No other West TSA infrastructure considerations included costs.

However, because horse people recognize that we are a small constituency, we have repeatedly offered to help pay for, and to volunteer to construct, these necessary amenities.

Fear: *We can't allow horses to go off-trail, because we're worried they have such huge impacts.*

Facts: Notwithstanding the research on the low physical impacts of horses on or off-trail, their proven inability to spread weeds, and their demonstrable lack of threats to wildlife (please refer to BCHA's Position Papers on these topics), there are so few horses on Open Space that the physical impact of off-trail equestrian use is vanishingly small.

Surveys of trail use reveal that fewer than 2% of all visitors, including equestrians, go off-trail (VMP, 2005). Those numbers correlate very well with our experience and that of the OSMP staff. Using the current maximum-possible visitation rates for the West TSA (15,330 horse visits per year), that comes to -- at most -- 307 off-trail horse visits per year. That's less than one equestrian visit per day spread over an area of 6,740 acres (10 square miles).

Those numbers assume all 6 horse trailer parking spots are occupied by trailers with 3 horses per trailer every day, and that all 24 horses within a mile of the West TSA are ridden in the TSA every day. But, of course, not all of those horses are ridden every day, year-round. Some are retired, some are lame, some are ridden elsewhere, and some of them have owners who aren't able to ride their horses every day. You can make your own projections here, but it seems most likely that the actual use would be much less than even one off-trail horse visit per day over the entire 6,740 acres of the West TSA.

Statistically, there would not be a single horse going off-trail in the entire West TSA on any given day, year-round.

"Given current levels of equestrian use, the CCG's recommendations will address the majority of our concerns." Mark Gershman, OSMP Environmental Planning Supervisor, addressing Council's questions, 2011.

"The OSBT continues to be strongly convinced that the current, low level off-trail dispersed equestrian use is compatible with WTSA resource management goals." OSBT Memo to Council April 28, 2011.

"There is a long-term and deeply held regard and passion for equestrian use, including off-trail use, on local public lands by the local equestrian community, and there are no compelling reasons not to accept the CCG plan for equestrian use." OSBT Memo to Council, April 28, 2011.

Horses going off-trail is a very rarely used privilege, and doing so has no statistical impact whatsoever on any natural resources in the West TSA. However, merely knowing that we can go off-trail is an important freedom for the equestrian community. Therefore, BCHA recommends that equestrians continue to be allowed to go off-trail on OSMP lands.

Fear: *The number of horses right now may be pretty small, but it could increase.*

Fact: Passive Recreation grew very quickly in the decades following World War II. However, for the first time ever, 2001 saw the longtime pattern of increasing outdoor recreation participation decline. Out of 27 categories of outdoor recreation, only six tracked activities increased, while 21 decreased or remained the same.

A 2003 Roper Report: Winners and Losers: Changes in % of the American Population Engaging in Key Outdoor Recreation Activities, revealed the following:

Increased Participation (6) No Change (10) Decreased Participation (21**):**

Driving for pleasure (+7)
Swimming (+1)
Picnicking (+2)

Golf (+1)
Canoeing/kayaking (+1)
Rowing (+1)
Fishing (0)
Outdoor photography (0)
Campground camping (0)
Hunting (0)
Target shooting (0)
Motorcycling (0)
Horseback riding (0)
Mountain biking (0)
Cross-country skiing (0)
Snowmobiling (0)
Walking for fitness (-3)
Bicycling (-1)
Running/jogging (-2)
Hiking (-4)
Wildlife viewing (-4)
Bird watching (-2)
Visiting cultural sites (-2)
Backpacking (-1)
Motorboating (-2)
RV camping (-1)
Wilderness camping (-1)
Tennis (-2)
Off-road vehicle use (-1)
In-line skating (-3)
Personal watercraft use (-1)
Downhill skiing (-1)
Waterskiing (-2)
Rock climbing (-1)
Snorkeling/scuba (-1)
Sailing (-1)
Snowboarding (-1)

Horseback riding is holding steady nationally, and in places it is declining. Boulder County and City surveys show equestrian use of trails at a steady 1-2%. In Boulder the equestrian community isn't getting any younger, and our numbers are unlikely to increase any time soon.

Conclusions

BCHA endorses the importance of contemporary ecosystem management to ensure the health of native plants and animals, and wildlife management is a vital part of that process. We acknowledge that in some locations under certain conditions, management of all visitor groups is appropriate and necessary. However, the overwhelming body of scientific research, coupled with expert opinions and anecdotal evidence, indicates that horses have an insignificant effect on trails or other physical components of natural ecosystems.

Horse organizations have had a long tradition of volunteering to build and maintain trails and infrastructure. These activities instill a sense of stewardship among participants, and they enable equestrians to "give back" to the public land programs they cherish. Volunteer work can help mitigate the effects of high visitation on trails, and all trail volunteers – including equestrians -- should be encouraged to participate, and appreciated when they do.

Finally, recreational trail horses comprise a tiny fraction of total trail users. Some City officials have pointed to the low equestrian visitation rate as justification for not providing adequate and designated parking for horse trailers. Yet as we have seen, OSMP has repeatedly refused to provide horse trailer parking – so is it any wonder that the number of equestrians is so low? Other public land management agencies with similar demographics routinely build trailer-friendly parking areas – why should Boulder's Open Space & Mountain Parks not do the same?

The City of Boulder Visitor Master Plan (2005) states that "Where recreational activities may, will, or could harm the environment, Open Space and Mountain Parks shall avoid, minimize, and mitigate impacts. Restricting visitor activities will be a last resort."

We agree.

In spite of our relatively small demographics, trail use and equestrian access to public lands is extremely important to the horse people who choose that form of recreation.

We recommend that equestrians and public land managers alike adhere to the following set of best management practices to reduce the impact of horses on public lands:

1) Always feed horses the best quality forage available.
2) Use certified weed-free hay or processed feed when planning to ride on public lands.
3) Carry only certified weed-free hay to trailheads or horse camp sites.
4) Provide adequate horse trailer parking at trailheads.
5) Construct trails in suitable locations to maximize the visitor experience and minimize impacts of all trail users, not only equestrians
6) Conduct frequent maintenance on trails to prevent erosion, hazards, muddy spots, and other issues before they become permanent problems.
7) Encourage passive recreation to enhance a healthy lifestyle.
8) Encourage (but do not require) horses to stay on designated trails.
9) Reach out to equestrian groups to enhance meaningful communication and education.
10) Incorporate the experience and expertise of equestrians in making management of our public lands a true partnership, rather than an adversarial relationship.

The focus should be on designing trails and maintaining them for all visitors, not just equestrians. As summarized by Aust, Marion, and Kyle (2005), there appears to be evidence that "recreational roads and trails used for horseback riding have the *potential*

to cause environmental problems" but that] the overall goal of [their] project was "to develop best management plan recommendations in order to minimize the impacts of horse trails while still providing the recreational opportunities."

We believe that banning horses from trails and restricting horses to on-trail use (except in small areas of particularly sensitive natural resources where all trails or off-trail use are banned for all visitors) is trying to fix a non-existent problem. Artificially creating *de facto* closures to horses by refusing to build even minimal horse trailer parking is an unfair and unnecessarily severe management action that should be avoided.

If the above guidelines are followed, land managers will be able to avoid draconian measures with regard to horse use, and equestrians will be able to continue enjoying the many diverse forms of public land that have been open to them for centuries, for many more years to come.

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