
OPEN SPACE

DIVISION

MEMO

To: Open Space Advisory Committee
From: Stanton La Breche, Manager of Park Services
Subject: Trail User Impact
Date: November 3, 2005

At the request of the Open Space Advisory Committee, staff has prepared a general overview of our 30 plus years of experience in trail building and maintenance and our observations related to the varied impacts of user groups. The question was posed if any trail user group causes more damage to the trails than another and whether or not one user group is more respectful of sensitive resource areas or not.

Hikers, bikers and horseback riders all bring different impacts from their use to the natural surface trails. We have not observed any user group that overall, causes considerably more damage than any other. Perhaps it is best to break out the impacts related to each mode, as we have observed on Open Space trails.

Equestrian:

Upon muddy trails, horses largely stay within the tread area, but leave "postholes" when conditions dry up and they generally do not widen trails when conditions are less than favorable. Horses may bring in undesirable plant seeds through their waste. Some horses have difficulty on rocky terrain and can find boardwalks and bridges difficult to cross so they may move around such structures.

Following established trail etiquette, all other users are to yield to horses. However, as a practical matter, groups of horses will pull off the trail to allow faster moving users to pass and can cause compaction and vegetation damage on occasion. There are considerably less horseback riders on our trails than hikers and bikes and consequently they tend to cause less overall impact.

Hiking:

Hikers are more inclined to shortcut trails, especially at switchbacks, to get from one point to another. Hikers initiate braiding or trail widening when muddy conditions exist since they tend to step off the tread and into the vegetation on the side of the trail to avoid the mud. Pedestrians often hike two abreast, which at times can cause a widening of the trail.

Biking:

Trails that are steeper or turn sharply are impacted due to bicycle acceleration and deceleration over the terrain, especially if the riders are inexperienced. Although bikers will typically stay on the tread in muddy conditions, the rut created by their tires can channel water run off creating erosion issues. Also, on curves we see where the outer edges are 'pushed,' consequently widening the trail.

We don't have clear observations that one trail user group respects the natural/sensitive areas more than the others. Planning and design of the trail route has more to do with keeping people away from such areas than the inclinations of a specific group. Furthermore, we do not have a rule that one must stay on our trails and proximity to attractive features will draw people to those features. It is our observation that hikers seem more likely to leave the trail and explore. Our surveys report that 80% of users indicate that they stay on trails and those that don't give an array of reasons such as wanting to explore, taking a short cut or to avoid bad trail conditions.

In summary, the total volume of users is the main reason for soil compaction and erosion. We do not have strong evidence that one type of user is more harmful to the trail and adjacent resources than another. Trail design, maintenance and weather conditions can have as big an impact on trail erosion as the users themselves. Most impacts can be mitigated through best practices trail design, construction and maintenance.