



WILDLIFE DISTURBANCE NEAR HIGHWAYS AND RECREATIONAL PATHS

Many of the Mad Rabbit trail proponents say putting trails in the vicinity of US40 will not have a deleterious effect on wildlife, since US40 is a disturbance already.

This is a common error of anthropomorphizing wildlife, that is, projecting how humans perceive disturbances onto animals. Since we see the tranquility of a bike path as less disturbance than a US highway, we believe wildlife will too. The science says otherwise.

Let's look at a study done near Vail when a recreation path was created alongside Interstate Highway 70.

In 1970, a wildlife underpass and associated "deer-proof" fence were constructed at Mud Springs Gulch west of Vail to reduce the number of deer collisions on I-70 and to facilitate their movements through a historic migration corridor. The underpass measured 10 feet high, 10 feet wide, and 100 feet in length. In July 1997, the Town of Vail constructed a bike and pedestrian path alongside I-70, between the highway and Gore Creek. See image below.



The image to the left shows spring mule deer migration from north to south through the wildlife underpass. It also shows a recreation path constructed later by the Town of Vail. The path is on an elevated bridge on the south end of the wildlife underpass, allowing mule deer to continue underneath.

Deer approaching the underpass from the north can clearly see vehicles on the highway and humans on the recreation path. When deer observed humans on the path, migration was significantly reduced.



Concern arose that people on the path would inhibit deer from using the underpass. A studyⁱ was sponsored by the Town of Vail and the Colorado Department of Wildlife to address this concern. The researchers created a moveable curtain that acted as a visible barrier between the recreational path and the hillside used by the deer. From this, they could analyze the response of the deer to the presence or absence of the visible barrier.

From the study: "Sixty-five percent more deer crossed through the underpass when the visual barrier was in place than when it was not. Fewer deer appeared disturbed by cyclists when the curtain was in place (16% of 136 deer) than when it was removed (30% of 125 deer)."



The image to the left shows the approximate location of the visual barrier used in the study, while the image to the right shows the current visible barrier. Even though the deer could always see the entirety of I-70 traffic, hiding cyclists and from view on the opposite side of I-70 led to 65% more deer migrating through the underpass.

In 2000, Vail installed visual barriers on both sides of the bike path prior to spring migration. This further improved the efficacy of the visual barrier, with only 1 of 130 deer appearing disturbed.

To summarize, ***a single bike path on the opposite side of a 4-lane divided super-highway was deterring mule deer from migrating. Only by hiding the cyclists did the migration return to normal.***



This matches 40 years of wildlife studies that show the human form, scent, and behavior can be more disturbing to wildlife than the steady flow of vehicular traffic on paved roads.

These results are not unique to mule deer. In one of the very first telemetered elk experimentsⁱⁱ, researchers Ward and Cupal placed heart rate monitors on elk who grazed near Pole Mountain, just north of I-80 in Wyoming. They found that humans on foot, vehicles coming to a stop, and close-range gunshots, produced more reaction than continuously moving automobiles on I-80.

Ward was also an author of *Effects of Highway Operations, Practices, and Facilities on Elk, Mule Deer, and Pronghorn Antelope*ⁱⁱⁱ. There, the report states, “Elk show a preference to stay a minimum of 0.25 mile (400 m) from traffic while deer prefer a minimum of 100 yards (91.m), and antelope use the habitat up to the right-of-way fence. All three species are more responsive to people walking; elk prefer a distance of 0.5 mile (800 m), deer 200 yards (182 m) and antelope somewhere between the two distances, depending on habitat and experiences.”

In general, elk and deer stayed twice the distance away from human walkers than they did from I-80. The absolute distance is also of importance. A disturbance zone of just a quarter mile from an highway implies that trails deeper than a quarter mile from US40 are uniquely disturbing the wildlife, not US40. Trails will also present a disturbance width twice as wide. The Mad Rabbit proposal includes a large number of such trails. Even then, this simple calculation assumes that US40 presents the same disturbance to elk as would I-80, which is unlikely.

These three studies show the large disturbance that human recreationalists, whether walking or biking, can have on wildlife even when compared to 4-lane interstate highways. We can speculate why human forms and activities are more disruptive than constant vehicular traffic, but we can't deny that this is the case.

When we discuss trails near US40, we need to let the wildlife science guide us, and not project our own human opinions of what we perceive as disturbances. The evidence is strong, with little to the contrary, that recreation trails in the vicinity of US40 will create more disturbance to wildlife than US40 itself.

ⁱ Phillips, G.E., Alldredge, W., and Andree, W.W. (2001). Mitigating disturbance of migrating mule deer caused by cyclists and pedestrians at a highway underpass near Vail, Colorado. *UC Davis: Road Ecology Center*. Retrieved from <https://escholarship.org/uc/item/2p6340b0>



ⁱⁱ Ward, A. L., and Cupal, J.J.. (1979). Telemetered heart rate of three elk as affected by activity and human disturbance. Symposium on dispersed recreation and natural resource management. Utah State University, Logan, UT, USA. 27 pp.

ⁱⁱⁱ Ward, A. L., Fornwalt, N.E., Henry, S.E., and Hordorff, R.A. (1980). Effects of highway operations, practices, and facilities on elk, mule deer, and pronghorn antelope. Office of Research and Development, FHWA, Rept. FHWA-RD-79-143, 48 pp. <https://trid.trb.org/view/156893>