October 6, 2019

San Juan National Forest – Dolores Ranger District

Attention: Tom Rice

29211 Highway 184

Dolores, CO 81323

Submitted via the project web page at: https://www.fs.usda.gov/project/?project=56748

Also sent via email to: thomas.b.rice@usda.gov and dpadilla@fs.fed.us

RE: Rico Trails Project - Comments on the September 2019 Scoping Notice

Hi Tom,

Following are comments on the September 2019 Scoping Notice for the Rico Trails Project:

**Purpose and Need statement needs Modification/Additional Information**

The “Purpose and Need for Action” in the Scoping Notice needs to be rewritten. It is deficient in a number of ways. To “provide connectivity and loop opportunities” were part of the just completed Rico-West Dolores Travel Management Plan (RWDTMP) – what has changed to make a new need? Using “cooperating organizations” and “improving recreation opportunity” were also a part of the RWDTMP. See the following for more detail on these deficiencies.

The USFS just completed an extensive evaluation and study of the travel needs in the Rico-West Dolores area. This process took over 10 years and resulted in the final Decision and FEIS issued on 7/30/18.

- The final Decision on 7/30/18 discussed one part of the proposed action in the current Rico Trails Project – it discussed a potential future project to identify and construct a new trail connecting the end of NFSR 692A to the Stoner Creek Trail. The 7/30/18 Decision did not justify the need for this potential future project. The new Rico Trails Project need to justify this need – there is currently a motorized connection between Stoner Mesa and Taylor Mesa via the Eagle Peak Trail # 629.

- The 7/30/18 final Decision has no mention of a project to increase the nonmotorized trails in the Rico area. In fact, the Decision did the opposite – it did not include a number of trails in the Rico area that were existing trails before the 10 year RWDTMP process – including Horse Gulch Trail and Circle Trail (which is being proposed in this project as an addition). The Decision was based on extensive input from Rico area individuals/organizations and it decided that more trails were not needed or were not justified by the extensive environmental analysis performed. Furthermore, the Rico Trails Alliance submitted comments during the RWDTMP process and was a part of that process.

The reasons behind the 7/30/18 Decision regarding the travel needs in the Rico area are probably still valid – if they are not, the USFS should justify the new needs based on valid changes that have occurred over the past year. The Purpose and Need statement needs to explicitly explain why the Decision and FEIS are no longer valid - what has changed in the travel needs and what has changed in the analysis of the environmental, economic, and other consequences. How can the recent FEIS and Decision be assumed to be invalid/insuffficient just because a group wants it changed? If that is acceptable, then Colorado Backcountry Hunters and Anglers (and I am sure other organizations) would like the USFS to start a project for a number of existing trails that need to have their allowed uses changed.

Without explanation in the Purpose and Need for this Project, it is hard to understand the need for the nonmotorized trail part of the Rico Trails project. As you know, the Purpose and Need statement in a project is very important in executing the project and in determining that the agency considered appropriate and reasonable alternatives. Furthermore, if the new project proposes to change the Decision and FEIS, then the new project should have a full evaluation in an EIS (not an EA or CE), since it is changing a Decision that was made based on extensive analysis performed in the FEIS.

Before approving more mountain bike trails that negatively influence wildlife habitat, the USFS should consider the maintenance/repair needs of the existing trail system. There are a number of trails in the Rico area that are not used much and are in serious need of maintenance and trail work. This work should be done before new trails are added and the capability of the USFS to maintain the existing trails needs to be realistically assessed. They are not being maintained now. A good example is the Horse Creek trail – this trail needs reconstruction and repair in the upper elevation portion of the trail. It needs work in a number of areas, but a good example is the portion of the trail that is near the intersection of the old Horse Gulch trail (this is presently not a USFS system trail) – the trail has a slide area where the trail was reconstructed a number of years ago with 3 foot high log retaining walls – these walls were wiped out last winter and the trail now has no horizontal/flat portion on a cross-slope exceeding 45 degrees. This is unsafe for all users.

**General Background Information**

The Rico Trails Project proposes a substantial increase in the number of miles of trails in the Rico West Dolores area where the USFS just completed an extensive study of travel needs and issued a new Travel Management Plan (over 10 years in the making). It proposes to add one motorized trail (3.4 miles new and 1.5 miles converted) and two nonmotorized trails. The motorized Spring Creek connector trail (to connect Taylor and Stoner Mesas) will result in an increase in the overall amount of motorized travel in the RWD area. The nonmotorized trails will add 2.55 miles for the Circle Trail, 4.32 miles for the Rio Grande Southern Trail and 2.46 miles of reroutes for the Ryman Trail. The new nonmotorized trails will result in a large increase in mountain bike travel in the Rico area – especially on the Ryman Trail. Without the 2.46 mile rerouting of the Ryman trail, Ryman trail is unattractive to most mountain bike riders. These new trails will have substantial influence on the wildlife and habitat – above the environmental consequences evaluated in the recently completed Rico-West Dolores Travel Management Plan (RWDTMP). As discussed below, trail travel has a large negative effect on wildlife and habitat. We do not want to go backward from the wildlife and habitat protections put in place in the just completed RWDTMP.

The website for the Rico Trails Alliance has information on trails. Unfortunately, this information endorses and directs users to illegal trails that are not part of the USFS system – in particular see the trails called Whispering Springs and Circle on the following link: <https://www.ricotrailsalliance.org/trails-portfolio/>

This is not what we would expect from a valued partner.

**Background on the effect of trail travel on wildlife and habitat:**

1- USFS Research on the effect of trail travel on elk and elk habitat has demonstrated that mountain bikes and motorized travel displace wildlife more than hikers and horses.  See the following link for scientific information on the influence of mountain bikes and motorized travel on elk and elk habitat (this is USFS research published in a peer reviewed Journal in 2018):

<https://www.fs.fed.us/pnw/pubs/journals/pnw_2018_wisdom001.pdf>

The report abstract states “Distances between elk and recreationists were highest during ATV riding, lowest and similar during hiking and horseback riding, and intermediate during mountain biking. Our results support the hypothesis that elk avoid trail-based recreation similarly to their avoidance of roads open to motorized traffic on public forests. Forest managers can use results to help optimize trade-offs between competing objectives for trail-based recreation and wildlife species like elk that are sensitive to human activities on public forests.”

A two page summary of all of the USFS/Wisdom research has been put together by Colorado Backcountry Hunters and Anglers and it is attached at the end of this comment letter – see “Effects of Off-Road Recreation On Elk and Mule Deer (Summary of Wisdom et al Studies)”. At the end of this summary it states that the bottom line is that “for a given time frame of recreation, not only do mountain bikers adversely impact big game 4 times as much as hikers, they impact 50% to 75% more animals”.

2- Colorado Backcountry Hunters and Anglers recently issued a report entitled “Impacts of Off Road Recreation on Public Lands Habitat” which discusses the negative influences of trails on wildlife habitat. A copy of the report is available is attached at the end of this comment letter.

Of particular note is the following info from this report:

Former CPW District Wildlife Manager, Jim Haskins, wrote: “New mountain bike [trail]

construction will likely result in permanent habitat fragmentation. Habitat fragmentation impedes the movement of wildlife across landscapes. Looped trails may create islands of habitat that may be avoided entirely by wildlife.”

**Spring Creek Trail:**

1- The construction of this connector trail does not only add 3.4 miles of new motorized trail (to be built) - it also converts about 1.5 miles of Stoner Creek Trail #625 to motorized.

2- A bridge needs to be constructed for Spring Creek Trail #625 to cross Stoner Creek.

3- The Stoner Creek drainage is superb wildlife habitat, and this project will negatively affect that habitat - by adding motorized travel on a part of Stoner Creek trail and by constructing a new motorized trail up to the top of the southern ridge of the drainage and continuing to FR 692.  If this project is to be approved, the environmental consequences of this habitat degradation and the resulting displacement of wildlife needs to be studied and minimized/justified. The proposed trail climbs up a steep hillside in a narrow canyon that amplifies sound very well. As discussed above, USFS research has concluded that motorized trail travel has a large effect on elk and habitat.

I suggest that the effects of this habitat degradation be partially compensated for by changing the presently motorized section of the Stoner Creek Trail #625 from the end of West Twin Springs Trail #739 to the intersection with East Twin Springs Trail # 741 (a distance of about 2 miles) to non-motorized.  This section of the Stoner Creek Trail lies in the main canyon of Stoner Creek and is valuable habitat for wildlife and contains a number of beaver dams. It is not necessary to have this section of the Stoner Creek Trail #625 as motorized because it is duplicated by other motorized trails nearby and it presently receives little motorized use due to this duplication and it's a narrow, difficult trailbed for motorcycles on a steep cross-slope.

4- Seasonal closures should be addressed on the proposed motorized sections.

**Circle Trail:**

1- The addition of nonmotorized Circle Trail to the trail system will result in a loss of effective habitat for wildlife. As discussed in the above references. all modes of travel cause habitat degradation and mountain bike travel causes much more habitat degradation than hikers/horses. This trail will also contribute to more mountain bike travel on loops consisting of Circle trail combined with Ryman trail, Salt Creek trail, Scotch Creek road, Colorado trail, the proposed Rio Grande Southern trail and others. The amount of mountain bike travel will increase substantially. To offset this loss of habitat and wildlife displacement, I suggest that the Ryman trail be designated for use by hikers and horses only, as discussed more below.

**Rio Grande Southern Trail:**

1- In the Scoping Notice, this new trail is not designated for type of use. I talked with Tom Rice on 9/11/19 and he said that this trail is proposed to be non-motorized - that is, it would be non-motorized for the section that does not utilize FR422 (about the first 1+ miles of the proposed trail would use FR422 which is a motorized road).

2- This will be a very expensive project - it has a bridge across the Dolores River which will cost a lot.

3- The addition of nonmotorized Rio Grande Southern Trail to the trail system will result in a loss of effective habitat for wildlife – the same effect discussed above for the Circle Trail. As discussed in the above references. all modes of travel cause habitat degradation and mountain bike travel causes more habitat degradation than hikers/horses. This trail will also contribute to more mountain bike travel on loops consisting of Rio Grande Southern trail combined with Ryman trail, Salt Creek trail, Scotch Creek road, Colorado trail, the proposed Circle trail and others. The amount of mountain bike travel will increase substantially. To offset this loss of habitat and wildlife displacement, I suggest that the Ryman trail be designated for use by hikers and horses only, as discussed more below.

**Ryman Trail:**

1- One of the primary reasons for having a non-motorized Ryman Creek drainage in the recently completed RWDTMP was it's excellent wildlife habitat, which is valued by many hunters and wildlife viewers. As discussed above, USFS research on the effect of mountain bikes on elk and elk habitat has demonstrated that mountain bikes displace wildlife much more than hikers and horses. The addition of mountain bike loops and the rerouting of Ryman that is proposed in this project (loops utilizing Circle Trail, Rio Grande Southern Trail, Scotch Creek Road, etc) will substantially increase the amount of mountain bike travel on the Ryman Trail.  This will result in an unacceptable displacement of wildlife and loss of excellent habitat.

I suggest that you designate Ryman Creek trail as open to hikers and horses only. Since Salt Creek Trail and Scotch Creek road provide similar loop opportunities as Ryman Creek Trail, Ryman Creek trail is not needed by mountain bike riders (three routes down from the Colorado trail that are within a few miles of each other are not needed or justified). Ryman trail is very close to Salt Creek trail and both are not needed by mountain bike riders. The only opportunity that is forfeited if Ryman Trail is closed to mountain bikes is a loop using Ryman and Salt Creek Trails.   The use of Salt Creek Trail by mountain bikers is less disruptive to wildlife than the use of Ryman Creek trail since Ryman Trail traverses the center of Ryman Creek drainage.  And - mountain bikers love riding down Salt Creek Trail – mountain bike travel on this trail has increased a lot this year. It seems to me that giving up a “mountain bike allowed Ryman” is a small concession for all that is gained with the addition of Circle trail, Rio Grande Southern trail and all of the accompanying loops. And, the wildlife will still be affected, but not as much!

2- The trail work that is proposed is still needed even if this trail is closed to mountain bikers (but the amount of trail work needed will be less).

**E-Bikes**

Although E-Bikes are currently managed as motorized vehiclesby the USFS, it would be negligent for the USFS to not consider and evaluate them in any project proposal. They clearly would have an increased influence on wildlife and wildlife habitat. An excellent intro/summary/review is given on the following link:

<https://mountainjournal.org/do-ebikes-represent-a-menace-to-wildlife-in-the-backcountry>

**Conclusion**

Please consider these comments in the development of your Proposed Action. The “Purpose and Need for Action” needs to be modified and/or supplied with additional information regarding the reasons why the just completed RWDTMP is no longer valid or needs changing. If a new need (that did not exist for the just completed RWDTMP) is identified for nonmotorized trails near Rico, you should change your Scoping Notice to protect wildlife and wildlife habitat by designating Ryman Trail as open to hikers and horses only. For the Spring Creek part of this Project, you should protect wildlife and wildlife habitat by changing the presently motorized section of the Stoner Creek Trail #625 from the end of West Twin Springs Trail #739 to the intersection with East Twin Springs Trail # 741 (a distance of about 2 miles) to non-motorized.

Regards,

Signed by Robert Marion

Robert Marion

Habitat Watchman, Colorado Backcountry Hunters and Anglers

**Effects of Off-Road Recreation**

**On Elk and Mule Deer**

**(Summary of Wisdom et al Studies)**

The Starkey Experimental Forest and Range (Starkey) is a one-of-a-kind, world-class research facility located in the Blue Mountains of northeastern Oregon. Starkey is the primary field location for scientific study of deer, elk and cattle in a natural environment. Most of the 28,000-acre forest and range is enclosed by a game-proof fence. Research on ungulates (hoofed mammals) is conducted jointly by the USDA Forest Service Pacific Northwest (PNW) Research Station and the Oregon Department of Fish and Wildlife.[[1]](#footnote-1)

There are a wide variety of research projects completed and ongoing at Starkey.

Studies examine key questions about elk, deer, timber, cattle and recreational uses on National Forests. Starkey is managed for multiple public uses like other National Forest lands.[[2]](#footnote-2) The facility encompasses spring, summer and fall ranges typical of those used by mule deer and elk in the western United States.[[3]](#footnote-3)

The Starkey Project measures the population response of deer and elk to managed forests and rangelands. The project is a synthesis of long-term studies on the impact of off-road recreation on elk and mule deer.[[4]](#footnote-4) The research is a controlled comparative evaluation of off-road activities as experimental treatments and periods of no human activity as experimental controls.[[5]](#footnote-5)

Wisdom et al. (2005) and Wisdom (2007) measured responses of radio-marked elk (from April to October: 2002-2004) to four types of off-road disturbances: hikers, equestrians, mountain bikers and ATVs. This controlled study design mimicked daytime patterns of motorized and non-motorized disturbance on National Forests.[[6]](#footnote-6)

The studies measured levels of disruption quantified as: 1) the likelihood of flight by the animal, 2) how fast and how far the game moved from the disruptor, and 3) how long game ceased resting and eating. These variables correlate directly to overall health and stamina of the big game subjects. An automated GPS tracking system provided the subjects’ locations every 30 seconds.[[7]](#footnote-7)

To balance the distances covered in a given timeframe for each of the disruptors, the study used double the numbers of mountain bikes, compared with ATV’s, and triple the number of hikers and equestrians. This is based on the ATV’s covering 20 miles per transect, mountain bikes covering half that distance (10 miles) and hikers and equestrians about 6 miles. Basically, they wanted equal length transects. All the reviewing peers agreed this methodology was appropriate.[[8]](#footnote-8)

**Study results:** The probability of flight varied according to distance from the disruptor. When within 100 yards of any of the four disruptors the probability of flight was roughly equal. However, as the distances increased those probabilities spread out. At 500 meters from a hiker there was basically zero flight response. To achieve the same zero flight response the elk needed to be 750 meters from the equestrians and 1500 meters from both ATV’s and mountain bikes.[[9]](#footnote-9)

Doing the conversions, hikers can clear a swath of disturbed animals 1/2-mile wide, equestrians clear a swath 3/4th-to-1 mile wide, and ATV’s and mountain bikes clear a swath a full 2 miles wide! Visiting the flight speed data, we see similar results. Elk move away from ATV’s 35% faster than from hikers and equestrians. They move off 15% faster from mountain bikes in comparison to hikers and equestrians.[[10]](#footnote-10)

Regarding recovery data, compared to control data (i.e., movement throughout the day with NO disruptors), the elk never settled down regardless of the disruptor. Their recovery from the disruption was never complete; no long times resting or eating. This last data simply points out that regardless of our mode of movement we humans aren’t particularly good for the general wellbeing of elk within a half mile or so of us.[[11]](#footnote-11)

**Takeaways:** Elk flee 2 times as far from equestrians than from hikers and they flee 4 times farther from mountain bikes and ATV’s than from hikers, and they’re running faster. Hence, the argument that mountain bikes cause LESS disruption than hikers because they’re here and gone quickly isn’t valid based on study data. In fact, we could make the argument that the sudden, intense scare from rapidly moving mountain bikes is the cause for their greater displacement.[[12]](#footnote-12)

An important point to remember in comparing the flight responses to hikers vs. mountain bikers is that for a given time frame of recreation (i.e., one hour, two hours, whatever) mountain bikes generally cover 50% to 75% more ground, thus impacting that many more animals.[[13]](#footnote-13)

**Bottom line**: For a given time frame of recreation, not only do mountain bikers adversely impact big game 4 times as much as hikers, they impact 50% to 75% more animals.[[14]](#footnote-14)

**Impacts of Off-Road Recreation**

**On Public Lands Habitat**

Due to the breadth and depth of our state’s vast public lands estate, Colorado boasts more [elk](https://coloradooutdoorsmag.com/2017/10/16/livin-the-wildlife-rocky-mountain-elk/) than any other state. At the same time, our human population is booming and expanding its impact on wild habitat. The Colorado [chapter](https://www.backcountryhunters.org/colorado_bha) of Backcountry Hunters & Anglers (BHA) has been hearing from an increasing number of hunters, anglers, public land managers and others about the detrimental impacts of increasing off-road recreation on public lands habitat.

Wildlife habitat in Colorado is being significantly impacted by the proliferation of mechanized (i.e., mountain bike) and motorized (ATV/OHV) trails on public lands. Sportsmen and wildlife managers are finding that elk hunting opportunities, in particular, are being compromised by trail development in many parts of the state.

In the Roaring Fork Valley (which stretches from Glenwood Springs to Aspen), for example, user-created trails have displaced elk to a point where a Colorado BHA member, Bob Shettel, no longer finds elk in traditional hunting areas north of Basalt.[[15]](#footnote-15) Colorado Parks and Wildlife (CPW) is also growing increasingly concerned about decreasing elk numbers in the vicinity of areas with expanding off-road recreation trail systems.

Former CPW District Wildlife Manager, Jim Haskins, wrote: “New mountain bike [trail] construction will likely result in permanent habitat fragmentation. Habitat fragmentation impedes the movement of wildlife across landscapes. Looped trails may create islands of habitat that may be avoided entirely by wildlife.”[[16]](#footnote-16) During the 2017 Colorado BHA Rendezvous at Sylvan Lake State Park (June 2-4), CPW District Wildlife Manager, Craig Wescoatt, stopped by. He’s concerned that elk are being displaced by mountain bike trails in the Eagle area.[[17]](#footnote-17)

At a February 27, 2018, Vail Planning and Environmental Commission meeting, CPW officer Bill Andree told board members about the decline in area wildlife populations, including a roughly two-thirds decrease in the elk herd between Vail Pass and Wolcott south of Interstate 70 in the past 15 years. The *Vail Daily* Editorial Board added these insights:[[18]](#footnote-18)

“Ultimately, preserving and rebuilding wildlife herds is up to us. ‘We all feel we don’t have an impact, that it’s the other guy,’ [CPW officer Bill] Andree told commission members. He’s right, you know. We’re all the problem. From people who … [walk dogs] on trails … to people who violate trail closures—‘oh, the elk will never notice me’—individuals can and do impact wildlife. When a few hundred—or even several dozen—individuals take the same attitude, the results can be devastating to local wildlife.[[19]](#footnote-19)

“Whether or not you see an elk or deer, that animal has probably seen you, and at a fairly great distance. An elk can spot a hiker as far away as 550 yards. An animal can spot a person on an all-terrain vehicle nearly a mile away. An animal easing away from a human isn’t doing the work needed to stay alive or raise a viable calf.[[20]](#footnote-20)

“That contributes to the decline of our herds. Better education—from locking gates to crystal-clear closure signs to, perhaps, having volunteers at trailheads explaining closures—can all help. Ultimately, though, responsibility falls on us.”[[21]](#footnote-21)

In southwest Colorado, around Durango, illegal trails are vexing land managers and wildlife officials, who have struggled with reining in the longstanding, escalating problem. “We’re not talking small connector trails,” said Shannon Borders, spokeswoman for the Bureau of Land Management. “We’re talking miles of illegally built trails.”[[22]](#footnote-22)

Tyler Fouss, a BLM law enforcement ranger, said the trails appear to be mostly constructed and used by mountain bikers. The BLM and other agencies treat the illegally built trails as a criminal case of trespass, but it’s tough to find perpetrators. Since 2015, no one has been caught in connection with building illegal routes.[[23]](#footnote-23)

Trails are also being built and used in closed areas. Every year, the BLM cordons off areas that are critical winter habitat for wildlife (from Dec. 1 to April 15), and every year, people disregard the closures. “It’s a shame people can’t share the landscape with wildlife,” said Colorado Parks and Wildlife (CPW) spokesman Joe Lewandowski.[[24]](#footnote-24)

“The purpose of this seasonal closure is to reduce the recreational impacts … on wintering big game animals during the time of year when deer, elk, pronghorn and moose are most vulnerable to stress,” a CPW official explained. “The result of this stress can be decreased body condition, increased mortality, and decreased fawn/calf survival. Winter can be extremely difficult in wildlife as body weight is down and access to food is very limited. The survival of wildlife relies heavily on keeping as many calories as possible until the green shoots pop up, heralding spring’s return.”[[25]](#footnote-25)

The problem extends beyond BLM- and CPW-managed lands. The U.S. Forest Service discovered an illegal mountain bike trail near Hermosa Creek Campground, in a special management area protected by law. Forest Service staff and volunteers went out to eliminate the route by spreading shrubs, rocks and trees along the path. Cam Hooley, spokeswoman for the Forest Service, said illegal trails have become more of an issue in the last five to 10 years.[[26]](#footnote-26)

Partly as a result, we are losing critical wildlife habitat in Colorado at an alarming rate. A [study](https://disappearingwest.org/) conducted by Conservation Science Partners found that from 2001 to 2011 the West lost a football field worth of natural areas to human development every 2½ minutes.[[27]](#footnote-27) Colorado alone lost 525 square miles of natural areas (or 254,259 football fields) during that time, and threats to our public lands continue to proliferate.[[28]](#footnote-28)

As a result, sportsmen and women are increasingly concerned that off-road trail systems on public lands—especially in places that provide critical wintering habitat for elk and mule deer—are negatively impacting wildlife populations. The scientific studies and related information below provide additional detail supporting and confirming our concerns.

**Scientific Studies**

Although there are some groups who claim that their off-road recreation activities on public lands don’t impact elk and other wildlife species, scientific (peer-reviewed) studies prove otherwise.[[29]](#footnote-29) The Starkey Project measured the population response of deer and elk to managed forests and rangelands. The project is a synthesis of long-term studies on the impact of off-road recreation on elk and mule deer.[[30]](#footnote-30) A summary of the data is included here: “Effects of Off-Road Recreation on Elk and Mule Deer.”

Elk calving grounds are carefully selected by cows and are generally in locations where cover forage and water are in close proximity. Sites must provide security from harassment and be within or adjacent to high quality summer range. Hiking and other recreational activities in or near elk calving areas can have a significant impact on reproductive success. Gregory Phillips and William Alldredge (2000) studied reproductive success of elk following disturbance by humans during calving seasons in central Colorado [[31]](#footnote-31) A summary of the data is included here: “Reproductive Success of Elk Following Disturbance by Humans During Calving Season.”

**Mitigation Issues**

A USDA-Forest Service Final Environmental Impact Statement (EIS), for the Gunnison Basin Federal Lands Travel Management plan, stated: “Basically all activities related to roads and trails will have an effect on wildlife species. The widespread, detrimental impacts of human disturbance on wildlife are well documented in the literature. No positive benefits to wildlife have been identified from increases in travel management access.”[[32]](#footnote-32) A discussion of issues related to off-road recreation mitigation measures/effectiveness (or lack thereof) is included here: “Off-Road Recreation Trail Development Observations/Mitigation Issues.”

Mountain biking is an increasingly popular form of quiet and healthy recreation that has a place on public lands. Many sportsmen and women use mountain bikes for exercise, enjoyment and hunting. When well-planned and managed, mountain bike use can occur in a way that minimizes conflicts with other public lands users and maintains high-quality fish and wildlife habitat.

Healthy public lands help sustain healthy fish and wildlife populations, and Colorado BHA is dedicated to working collaboratively with other public lands user groups to provide avenues for sustainable outdoor recreation, while also conserving the large tracts of intact habitat that make Colorado’s public lands a national hunting and fishing destination.

**Resources**

“Impacts of Off-Road Recreation on Public Lands Habitat: Resources.”

1. <https://www.fs.usda.gov/treesearch/pubs/6271> [↑](#footnote-ref-1)
2. Terry Hershey, Wildlife Biologist (Salmon, Idaho). “Implications of Back-country Travel on Key Big Game Summer Range in the Bighorn-Weitas Roadless Area, Clearwater National Forest.” *Report*: 1/18/11. [↑](#footnote-ref-2)
3. Terry Hershey, Wildlife Biologist (Salmon, Idaho). “Implications of Back-country Travel on Key Big Game Summer Range in the Bighorn-Weitas Roadless Area, Clearwater National Forest.” *Report*: 1/18/11. [↑](#footnote-ref-3)
4. Wisdom, M. J., A. A. Ager, H. K. Preisler, N. J. Cimon, and B. K. Johnson. 2005. Effects of Off-Road Recreation on Mule Deer and Elk. Pages 67-80 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer. Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA. [↑](#footnote-ref-4)
5. Terry Hershey, Wildlife Biologist (Salmon, Idaho). “Implications of Back-country Travel on Key Big Game Summer Range in the Bighorn-Weitas Roadless Area, Clearwater National Forest.” *Report*: 1/18/11. [↑](#footnote-ref-5)
6. Wisdom, Michael J., et al. “Effects of off-road recreation on mule deer and elk.” *Transactions of the Sixty-ninth North American Wildlife and Natural Resources Conference*: March 16-20, 2004. <http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_wisdom001.pdf> [↑](#footnote-ref-6)
7. Wisdom, Michael J., et al. “Effects of off-road recreation on mule deer and elk.” *Transactions of the Sixty-ninth North American Wildlife and Natural Resources Conference*: March 16-20, 2004. <http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_wisdom001.pdf> [↑](#footnote-ref-7)
8. Wisdom, Michael J., et al. “Effects of off-road recreation on mule deer and elk.” *Transactions of the Sixty-ninth North American Wildlife and Natural Resources Conference*: March 16-20, 2004. <http://www.fs.fed.us/pnw/pubs/journals/pnw_2004_wisdom001.pdf> [↑](#footnote-ref-8)
9. Wisdom, M. J., A. A. Ager, H. K. Preisler, N. J. Cimon, and B. K. Johnson. 2005. Effects of Off-Road Recreation on Mule Deer and Elk. Pages 67-80 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer. Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA. [↑](#footnote-ref-9)
10. Wisdom, M. J., A. A. Ager, H. K. Preisler, N. J. Cimon, and B. K. Johnson. 2005. Effects of Off-Road Recreation on Mule Deer and Elk. Pages 67-80 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer. Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA. [↑](#footnote-ref-10)
11. Wisdom, M. J., A. A. Ager, H. K. Preisler, N. J. Cimon, and B. K. Johnson. 2005. Effects of Off-Road Recreation on Mule Deer and Elk. Pages 67-80 in Wisdom, M. J., technical editor, The Starkey Project: a synthesis of long-term studies of elk and mule deer. Reprinted from the 2004 Transactions of the North American Wildlife and Natural Resources Conference, Alliance Communications Group, Lawrence, Kansas, USA. [↑](#footnote-ref-11)
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