



COLORADO PARKS & WILDLIFE

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Drew,

On behalf of the Colorado Parks and Wildlife (CPW), I would like to thank you for the opportunity to be involved with the planning process for the Rio Blanco County Trails Master Plan. This planning process is a bit different from most as it relates to participation and formal comment procedures, so I will try to sum up our concerns in this letter. The scope of this project is extremely large. Creating a Master Travel Plan for the entire county has the potential to impact a wide variety of wildlife species and it will be impossible to capture all of our concerns at this time.

Anytime there are plans to increase human activities in a specific area, there are likely to be negative impacts to various wildlife species. Recreation impacts to wildlife can occur at the individual, population or community level. Quantifying and qualifying these specific impacts within the project area will be difficult without knowing the exact time and extent of the increased activity. However, it is realistic to expect there will be impacts. CPW respectfully asks Rio Blanco County to balance the extent and intensity of trail development/promotion with the long-term, sustainable wildlife resources that already exist in the County.

CPW's concerns, given the information that we are aware of at this time, include economic impacts to hunting and fishing activities, wildlife and wildlife habitats, and ability to provide on-going assistance and input on planning and development plans and development activities.

Economic Impacts

Wildlife provides a significant economic benefit to the state of Colorado. According to *The Economic Benefits to Hunting, Fishing and Wildlife Watching* (BBC Research and Consulting 2008), hunting, fishing, and wildlife viewing activities provided more than 33,000 jobs in Colorado and nearly \$1.8 billion in direct spending by participants in those activities which generated a total economic impact of more than \$3 billion toward Colorado's economy in 2007.

STATE OF COLORADO

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Bob D. Broscheid, Director, Colorado Parks and Wildlife
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Statewide Economic Impacts of Hunting and Fishing in 2007

Activity	Direct expenditures ¹ (\$ in thousands)	Total impact ² (\$ in thousands)	Total ³ jobs
Elk hunting	\$172,700	\$295,500	3,400
Deer hunting	58,300	99,900	1,160
Other big game hunting	4,700	8,300	100
Fishing	725,200	1,259,400	14,610
Small game hunting	56,900	98,700	1,350
CPW expenditures	58,500	81,500	730
Total	\$1,076,300	\$1,843,300	21,350

Note: Measured in 2007 dollars.

1. Trip and equipment expenditures and CPW expenditures in support of these activities.
2. Direct expenditures plus secondary spending by businesses and households (multiplier effects).
3. Includes job creation from direct and secondary expenditures.

Source: BBC Research & Consulting, based on data from CPW and USFWS 2006 national survey.

Hunting and fishing recreational activities are a sustainable annual source of economic benefit for Rio Blanco County only if wildlife populations are maintained at or near CPW objective levels and quality hunting and fishing opportunities continue to exist. Extensive trail development and intensive use may reduce population levels of big game, diminish hunt quality, reduce hunting and fishing recreational opportunities in the affected area of the county, and decrease sustainable revenues from these activities.

Rio Blanco County (RBC) has some of the highest big game hunter participation in Western Colorado. Large mule deer and elk populations exist within RBC. Any impacts associated with increased Off Highway Vehicle (OHV) activities on public lands could reduce the hunter participation rate and thus reduce revenues within the County. Direct and indirect expenditures for Rio Blanco County are summarized in the following table.

Estimated Hunting and Fishing Economic Impacts by County, 2007			
COUNTY	DIRECT EXPENDITURES	TOTAL IMPACT INCLUDING HUNTING, FISHING AND CPW EXPENDITURES	JOBS
Rio Blanco	\$17,890,000	\$30,040,000	305

Employment Related to Hunting and Fishing, 2007

County	Jobs from Hunting and Fishing	Total Jobs in County	Percent of Total Jobs
Rio Blanco	305	5,225	5.8%

Economic Impacts by County, Activity and Residence, 2007

	Hunting (\$ in thousands)		Fishing (\$ in thousands)		CDOW ¹	Total Impact
	Resident	Non-Resident	Resident	Non-Resident	(\$ in thousands)	(\$ in thousands)
Rio Blanco	4,870	20,970	2,670	350	1,180	30,040

Wildlife and Wildlife Habitat Impacts

CPW has focused its impact identification to wildlife species and habitats that lie within the county boundary. However, extensive trail development impacts extend directly and indirectly beyond a single point of disturbance or area of development activity. It is expected that development activity and its indirect impacts will reach beyond the County's boundary.

CPW maintains an up-to-date set of data and spatial reference – Species Activity Maps (SAM). SAMs are updated every four years, for 32 game and non game species. The most recent update for Rio Blanco County was completed in 2010/2011. CPW used SAMs to identify species specific seasonal habitats that lie within the County. Using SAM CPW identified the following species and habitats in the County: mule deer, elk, pronghorn antelope, greater sage-grouse, sharp-tailed grouse, lynx, raptors, black bear, moose, cutthroat trout, native non-salmonid fish species, black footed ferret, boreal toads, and riparian habitats. Bat species and northern leopard frog were also identified in this review.

Impacts to Wildlife

Wildlife impacts from road development and increased recreational use may occur in two distinct forms: direct impacts and indirect impacts. Direct impacts include the effects of actual habitat conversion or loss from ground disturbance and are generally concentrated in close proximity to a road. Indirect impacts occur as densities of roads increase, habitats adjacent or nearby become progressively less effective until most animals no longer use these areas. Animals that remain within the affected zones are subjected to increased physiological stress. This avoidance and stress response impairs habitat function by reducing the capability of wildlife to use the habitat effectively. In addition, physical or psychological barriers lead to fragmentation of habitats, further limiting access to effective habitat. An area of intensive activity becomes a barrier when animals can't or won't move through it to use otherwise suitable habitat. These impacts are especially problematic when they occur within or adjacent to limiting habitats such as crucial winter ranges and reproductive habitats.

Big game species can become sensitive to human disturbance. Studies have demonstrated decreased reproductive success in female elk, increases in stress hormones, and decreased opportunities for animals to feed and rest (Naylor et al. 2009, Phillips and Alldredge 2000, Taylor and Knight 2003). With the increased energy development,

continued human development and loss of habitat within RBC, the available quality wildlife habitat is dwindling.

Habitat fragmentation

Species whose habitat requirements include large blocks of homogenous habitat (such as forest interiors or sagebrush steppe) are particularly vulnerable to new road development and habitat fragmentation (Foreman et al. 2003). The range at which animals avoided traffic was approximately the range at which they could detect traffic noise, suggesting that traffic noise was meaningful through association with human activity. Knight and Grtzwiller (1995).

Lyon (1983) developed a general model of habitat effectiveness for elk that modeled percent habitat effectiveness as a function of road density. Declines in habitat effectiveness were non-linear, indicating that much of the loss of habitat effectiveness occurred in the first 2.6 mile/miles² of increasing road densities.

Edge and Marcum (1985) reported that elk leave a 500- 1000 m buffer zone around logging roads when traffic is high (at a rate of a few transits per day), but not at other times. Similar observations have been made for deer (Dorance et al 1975; Singer and Beattie 1986), and coyotes (Gese et al. 1989).

Wisdom et al. 2004 reported that elk flight response to hikers had little effect when hikers were beyond 550 yards (500 m). By contrast, higher probabilities of elk flight continue beyond 820 yards (750 m) for horseback riders and 1650 yards (1,500 m) from mountain bike and ATV riders. In contrast, mule deer respond with fine-scale changes in habitat use, rather than substantial increases in movement rates and flight responses.

For example, it is possible that mule deer may respond to an off-road activity by seeking dense cover, rather than running from the activity. If mule deer are spending more time in dense cover, in reaction to any of the off-road activities, this could result in reduced foraging opportunities, and a subsequent reduction in opportunities to put on fat reserves during summer that are needed for winter survival (Wisdom et al. 2004).

Greater Sage-Grouse

Presently there is a great deal of interest and activity to define sufficient protective measures for greater sage-grouse (GRSG) at the state and national levels and methods for incorporating those measures in Bureau of Land Management Resource Management Plans (RMP's). To date the plans have not been finalized. For instance, CPW has developed revised priority habitat maps in association with the BLM Colorado State Office, these preliminary priority habitat (PPH) maps differ from maps previously outlined in the *Colorado Greater Sage-grouse Conservation Plan (2008)*. CPW expects that Rio Blanco County will manage trail development and operations in GRSG habitats wherever they occur in a manner that avoids the need to list the species under the Endangered Species Act.

With the potential listing of these birds as threatened or endangered by the US Fish and Wildlife Service (USFWS) anything that could potentially impact these birds needs to be close scrutinized. The Piceance Basin has a long existing GrSG population. They are spread across several areas within the Piceance Basin and utilize various areas for leking, nesting, brood rearing, wintering and other life cycle activities. Proposing any additional public use in some of the critical areas at seasonal times could cause negative impact and listing implications. Careful consideration needs to be made to protect this species. CPW can provide maps and information for GrSG for consideration in this planning process.

The need to maintain extensive sagebrush habitat over large areas around leks for sage-grouse breeding populations to persist has been clearly stated by all major reviews of sage-grouse habitat requirements (Schroeder et al. 1999; Connelly et al. 2000, 2004; Crawford et al. 2004; Rowland 2004). Because nest success and chick survival both contribute substantially to population growth in sage-grouse (CDOW 2008, Walker 2008), protecting breeding, nesting and brood-rearing females and breeding males is crucial for maintaining breeding populations.

Aquatic impacts

The overall health of an aquatic habitat derives from the condition of the entire watershed including the uplands, riparian corridor and the stream channel. Impacts to the upland plant community and environment can have a very immediate impact on an aquatic system, because the condition of vegetation throughout a watershed is the major factor determining the quantity and quality of the associated flow regime. In essence the runoff is naturally regulated by healthy, diverse vegetation. Vegetation in good condition provides greater ground cover, which reduces runoff and increases infiltration rates. Furthermore, diverse plant communities contain various microsites that enable snow to melt at differing rates, thereby extending the runoff period. Collectively, these factors produce more stable base flows essential for healthy fish and riparian habitats. Reduced sedimentation is another major benefit to aquatic organisms. Healthy vegetation naturally produces a healthy water cycle. When developments alter physical conditions (i.e., stabilize flow regimes, reduce sediment loads), the opportunity exists for native species to be replaced by detrimental, non-native species.

Providing riparian buffers of sufficient width protects and improves water quality by intercepting non-point source pollutants in surface and shallow subsurface water flow (e.g., Lowrance et al., 1984; Castelle et al., 1994). Healthy riparian buffer strips are widely recognized for their ability to perform a variety of functions other than water quality including stabilization of stream channels, providing erosion control by regulating sediment storage, transport, and distribution; providing organic matter (e.g., leaves and large woody debris) that is critical for aquatic organisms; serving as nutrient sinks for the surrounding watershed; providing water temperature control through shading; reducing flood peaks; and serving as key recharge points for renewing groundwater supplies (DeBano and Schmidt 1989; O'Laughlin and Belt 1995). Buffer strips also provide habitat for a large variety of plant and animal species and have become a popular tool in

efforts to mitigate fragmentation by increasing connectivity of isolated habitat patches and conserving biodiversity (Rosenberg et al., 1997).

Wildlife habitat and movement corridors in riparian zones are also an important consideration. Appropriate designs for species conservation depend on several factors, including type of stream and taxon of concern (Spackman and Hughes 1995). Recommended widths for ecological concerns in buffer strips typically are much wider than those recommended for water quality concerns (Fischer 1999; Fischer et al., 1999), often exceeding 100 meters in width. These recommendations usually apply to either side of the channel in larger river systems and to total width along smaller streams where the canopy is continuous across the channel. Management for long, continuous buffer strips rather than fragments of greater width should also be an important consideration. Continuous buffers are more effective at moderating stream temperatures, reducing gaps in protection from non-point source pollution, and providing better habitat and movement corridors for wildlife.

There are many other important species (which CPW has not specifically brought up for discussion) that require avoidance and minimization actions as Rio Blanco County plans, designs, and implements this county-wide trail network.

CPW realizes that many of the proposed roads are currently open for public travel. CPW also recognizes that big game hunters also use Off Highway Vehicles (OHV) during the hunting seasons. Staff has observed big game species change distribution over the years due to this increase in motorized vehicle use. This change in distribution is of concern to staff and will require CPW staff to include the change in future management actions.

CPW staff is also concerned about the unintended issues that are likely to arise out of such an extensive project. CPW has concern about enforcement of additional motorized travel to help prevent pioneering or creating new roads and trails into more pristine and protected habitat. CPW, as an agency, does not have the personnel, finances, or commitment to be able to help regulate this increase in motorized activity.

CPW participation in on-going assistance and input on planning and development plans and development activities.

CPW staff; DWMs, Biologists, and Area Managers – have a well-developed knowledge of the County and specific areas/habitats depicted on the preliminary plan map and are prepared to assist as needed or requested. CPW is very much concerned about the extensive nature of this project. CPW asks that Rio Blanco County incorporate as much avoidance, minimization and mitigation measures as possible in this trail planning, design, and implementation project. The wide-ranging nature of the project will take extensive efforts to balance the known, wildlife resources that the County currently depends on and the new (and unknown) recreation proposition. CPW recommends that the following concepts be include in the project.

- Riparian buffers (setbacks from live water and wetlands)
- Riparian trail crossing design features

- Disinfect heavy equipment, hand tools, boots and any other equipment that was previously used in a river, stream, lake, pond, or wetland prior to moving the equipment to another water body.
- Seasonal trail closures for sensitive species and key life stages (lekking, production, spawning, etc.)
- Daily/nightly trail closures for sensitive species
- Site design to minimize sound impacts
- Constructing new roads/trails outside of sensitive time periods, life stages (lekking, production, spawning, etc.) in consultation with CPW.
- Map the occurrence of existing weed infestations prior to development to effectively monitor and target areas that will likely become issues after development.
- Monitor and manage off road user rates -- the number of passes per unit time on a given linear route
- Monitor and manage off road off-road recreational equivalents -- off road equivalents are the ratio of ATV riders, mountain bikers, horseback riders, and hikers that results in approximately the same effect on a given resource.
- Rio Blanco County should include a substantial increase in its budgets to partner with federal public land managers and state wildlife agencies for research, management, and monitoring of the increased trail networks and activities that will have negative impacts on natural resources.

Summary

Information provided in this comment letter indicates that terrestrial and aquatic wildlife and their habitats would be impacted from extensive trail development and increased use as the trail network and increased use takes place. How fast and to what degree the landscape would change is unknown; impacts to the landscape depend on a number of factors including intensity of use, location of routes, time of use, and type of recreational use. Additionally, other public land uses contribute to the overall impacts and create cumulative impacts that are extremely difficult to quantify. Regardless of the habitat rate of change across Rio Blanco County, sensitive species such as mule deer, raptors, cutthroat trout and native, non-game fish would likely be the first to be impacted.

CPW respectfully asks Rio Blanco County to balance the extent and intensity of trail development with the long-term, sustainable wildlife resources that currently exist in the County. CPW staff is available to support Rio Blanco County in their analysis of any of the individual routes with respect to wildlife and wildlife habitats.

CPW appreciates the opportunity to share our thoughts on this important project and we are available to answer any questions or assist with clarification of concerns. Please do not hesitate to contact me at 970-878-6061.

Sincerely,

A handwritten signature in black ink that reads "Bill deVergie". The signature is written in a cursive style with a large, sweeping initial "B".

Bill deVergie, Area Wildlife Manager

- cc. Ron Velarde, NW Regional Manager
- Dean Riggs, NW Deputy Regional Manager
- Brad Petch, Senior Terrestrial Wildlife Biologist
- Sherm Hebein, Senior Aquatic Biologist
- Taylor Elm, Land Use Specialist

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