



# Legacy in the Crosshairs:

## Colorado's 'Mule-Deer Factory' on the Decline

The story of Colorado can't be told without focusing on its natural beauty, wide array of natural resources – and their economic benefits and appeal for residents and visitors alike. Colorado's world-class wildlife populations have drawn hunters, anglers, photographers and wildlife watchers from across the country and globe for more than a century.

But for more than two decades, one of the American West's signature species – the mule deer – has been on the decline in Colorado and throughout the Rocky Mountain region. Wildlife managers, hunters and other conservationists are working to understand and reverse this trend.

In Colorado, the plummeting numbers of “muleys” is particularly noticeable in an area dubbed the “mule-deer factory.” The White River herd in western Colorado's Piceance Basin has ranked among the country's largest, estimated at more than 100,000 deer in the early 1980s. The area was said to be home to the largest migratory mule deer herd in North America.

That might no longer be the case. The herd's estimated, post-hunting-season size in 2013 was 32,000. While there are

likely many causes for the drop in numbers, one looms large: habitat loss. Oil and gas drilling and new roads and buildings have fragmented and covered over habitat. Western Colorado's overall estimated deer population of about 300,000 in 2012 was more than 110,000 short of the state's objective.

More than Colorado's bragging rights for having the biggest herds are at stake. Hunting and other wildlife-related recreation is worth at least \$5 billion to the state's annual economy. Colorado Parks and Wildlife, with public input, is developing a plan to boost mule deer numbers across western Colorado.

At the same time, the federal Bureau of Land Management is considering a plan that could add up to 15,000 new oil and gas wells in the part of the Piceance Basin where the White River herd roams. There are now at least 1,000 active wells. This fact sheet by the National Wildlife Federation and the Colorado Wildlife Federation examines what is at stake for the White River herd to raise awareness of the challenges facing the state's renowned deer populations and help point the way to possible responses.



# Western Colorado mule deer at a crossroads: *route to recovery*

Widespread, unregulated hunting along with habitat loss due to a surging human population reduced Colorado deer numbers so dramatically that by the early part of the last century state wildlife officials feared the herds might go the way of the Plains bison.

Thanks to the efforts of state wildlife managers, hunters and other conservationists, that didn't happen. Among the changes noted by the Colorado Parks and Wildlife Division in its recently issued "The Story of Colorado's Mule Deer" were better regulation of hunting and the generation of funds for conservation and research from fees and excise taxes paid by hunters. **By the middle of the 20th century, Colorado's deer numbered in excess of 600,000.**

More than 50 years later, Colorado's mule deer are at another crossroads. No one's talking about deer going extinct. Colorado still has some of the country's largest mule deer herds and draws hunters from across the country.

But the population trend the last several years has been down. CPW says the post-hunt, statewide total in 2012 was an estimated 408,000 deer – far short of the goal of 525,000 to 575,000. In western Colorado, home to some of the country's largest mule deer herds, the 2012 post-hunt estimate was roughly 300,000. CPW's target population is 410,000 to 450,000 deer for the area.

The declines affect opportunities for hunters and wildlife watchers. It affects the state economy because wildlife-related recreation produces at least \$5 billion in benefits yearly, according to a study released this year by Southwick Associates. Wildlife conservation is affected because nearly all the funds for state wildlife programs come from taxes and fees paid by hunters and anglers. In response to the dwindling population, the state has reduced the number of hunting licenses, which means less revenue for state wildlife programs.

CPW has launched a statewide initiative to gather public input into what's happening with mule deer and determine what can be done. The agency is developing a **"West Slope Mule Deer Strategy."**

## **A CASE STUDY: COLORADO'S 'MULE-DEER FACTORY'**

In the early 1980s, the estimated population of the White River herd was more than 100,000. The herd's home, dubbed the

"mule-deer factory," includes portions of Rio Blanco, Moffat, Routt and Garfield counties in northwest Colorado. The herd's estimated post-hunt population for 2013 was 32,000.

Wildlife biologists believe the population remained stable between 2012 and 2013, but **the current estimated population is less than half of CPW's goal for the herd – 67,500.**

Starting in the early 1980s, a review of the White River herd's population estimates, all made after the hunting seasons, show a continuing decline with minor fluctuations. John Ellenberger, the state's former big game manager and a wildlife consultant, recently reviewed the population estimates and hunting opportunities.

Severe winters, droughts, and disease can explain some of the ups and downs. CPW estimated the White River herd's size at more than 100,000 in 1982-83, which sunk to slightly above 80,000 for the 1983-84 count.

"That winter, '83-84, was the hardest winter I'd been through during my career," says Ellenberger, a member of the Colorado Wildlife Federation. "Researchers from Colorado State University had radio-collared fawns out here. None of their fawns survived that winter."

Does' survival rate also dropped significantly. It takes a number of years to rebuild herds.

What's worrisome, Ellenberger says, is that even with favorable weather, the numbers aren't recovering.

## **THE EFFECT ON HUNTING**

Fewer deer can translate into fewer opportunities for hunters and fewer available licenses. Colorado began limiting all deer licenses in 1999, making a specific number of licenses available for defined areas called game management units. The number of licenses offered for the White River herd fell as the population dropped. Ellenberger broke out the buck licenses for rifle seasons to illustrate the trend because that is the biggest group of hunters and other types of licenses show similar patterns. (See graph at right "Antlered Deer Rifle License")

Reduced hunting opportunities have economic consequences. **Southwick Associates' study found that wildlife-related recreation in northwest Colorado generates \$693 million in economic benefits annually and supports 6,978 jobs.**

Kent Ingram has been hunting deer for at 40 years and north-west Colorado's Piceance Basin, home to the White River herd, used to be a frequent destination. But Ingram, the Colorado Wildlife Federation board chairman, opted to hunt elsewhere when drilling and road-building picked up in the Piceance. He is concerned about the stresses the White River herd faces.

"I don't want to hunt places where the deer populations are low," Ingram added. "I support reducing tags if it helps the herds. We have to listen to the biologists."

## SPORTSMEN/WOMEN: PAYING THE BILLS FOR WILDLIFE CONSERVATION

Declines in hunting due to fewer licenses being offered or fewer hunters in the field can have ripple effects on overall wildlife programs. Much of the funding for wildlife management, habitat conservation and access for recreation comes from hunting and fishing license fees and federal excise taxes on firearms, ammunition, fishing gear, archery equipment and motorboat fuel. Revenue from the taxes, licenses and other fees paid by hunters and anglers make up a significant part of state wildlife budgets. In 2011, states received nearly \$749 million in hunter/angler excise taxes – \$364 million for conserving and restoring fisheries and \$384 for other wildlife projects. Nearly all the funds for state wildlife programs in Colorado come from the excise taxes, licenses and other fees paid by hunters and anglers.

*Sources: Colorado Parks and Wildlife, the National Shooting Sports Foundation and American Sportfishing Association.*

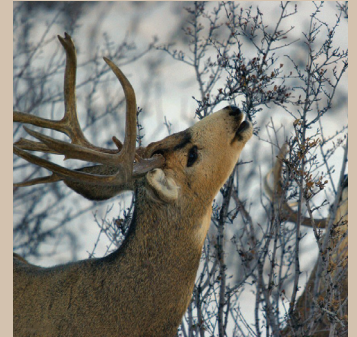
## THE REASON THERE ARE FEWER DEER

While there might be many influences on deer populations, one has been an overriding concern for years – habitat, its quality and quantity. "I think habitat is probably the biggest issue, but there are other kinds of issues that are interrelated," Ellenberger says.

One pressure on mule deer populations is the human population – more people moving into wildlife habitat, recreating in the hills and forests where deer live, building homes, fences and roads on or near wildlife habitat, as noted by CPW biolo-

gist Darby Finley in a report this year. Colorado's human population increased from 4.3 million in 2000 to 5.18 million in 2012. More people and development "contribute to a direct loss of mule deer habitat," Finley wrote.

Research has shown that two mule deer herds in western Wyoming, parts of which have been heavily drilled the last decade or so, have shrunk by at least 30 percent. Researchers don't pin all the decline on energy development, but note that deer avoid well sites.



STEVE TORBIT

The part of the Piceance Basin that's home to the White River herd has seen increased oil and gas drilling and accompanying development, including new roads, pipelines and gas processing plants. Northwest Colorado's natural gas drilling boom of the last decade has leveled off, due in part to low prices, but the Bureau of Land Management is considering a proposal that could add up to 15,000 new wells over 20 years. The BLM's preliminary proposal erroneously put the White River herd's current size at more than 100,000. The BLM says its final plan, due soon, will contain updated numbers.

The Piceance Basin is also home to some of the world's largest, richest oil shale deposits. Companies continue to look for ways to commercially mine and process the shale into oil.

"If you want to continue to have deer populations you're going to have to protect important habitat," Ellenberger says. "You're going to have to try to limit the amount of motorized use, human occupation and utilization of those areas. You can't ride and go everywhere you want and expect to have everything hunky-dory."

For years, CPW has conducted extensive research into a number of factors affecting deer, including predation, the condition of forage and weather extremes. Research is under way in a portion of the White River herd into the effects of oil and gas operations on deer behavior as well as the impacts of improvements to vegetation.

CPW has identified the following as possible issues affecting mule deer populations: habitat conditions; migration barriers; predation; drought and other weather extremes; highway deaths; disease; impacts from recreation; hunting demands; and competition with elk.

# The lore and decline of Colorado's 'Mule-Deer Factory'

John Ellenberger believes Arch Andrews, the Colorado Division of Wildlife's former public affairs manager, was the first to popularize the phrase "Colorado's mule-deer factory" to describe the animals that make up the White River herd in the northwest part of the state. The renamed Colorado Parks and Wildlife estimates the population was more than 100,000 in the early 1980s. The latest estimate, based on computer models, monitoring of deer and aerial surveys, puts the post-hunt population at roughly 32,000.

The area was said to be home to the largest migratory mule deer herd in North America, although Chuck Anderson, CPW's mammals research leader, said that wasn't scientifically documented. But no one doubts the herd was among the largest, if not the largest, in the country.

"Back when the population was at 100,000, 75,000 to 80,000, I don't think there would have been any arguments with any other states whether that was true. That's not the case anymore," said Ellenberger, formerly the state's big game manager and now a consultant.

For years, the Piceance Basin produced so many deer that it seemed almost automatic. Ellenberger said the "mule-deer factory" moniker gained traction when the herd started recovering from the severe winter of 1983-84. "Arch Andrews, who was the voice of the Division of Wildlife, said 'The deer factory is back.' And that kind of stuck."

Wildlife biologist and Colorado native Steve Torbit remembers growing up reading stories in Colorado Outdoors magazine about "the world's largest migratory deer herd and most productive deer herd."

"The herd has been famous at least nationally for decades," said Torbit, former executive director of the National Wildlife Federation's Rocky Mountain office. "It was long recognized as a highly productive area. It was just such fertile ground for deer."

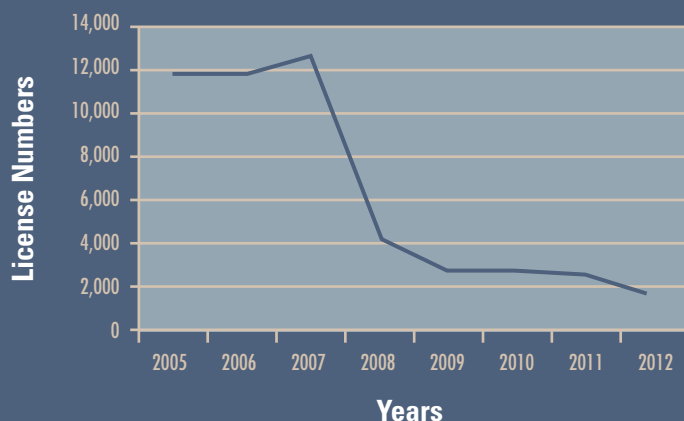
Early in his career as a wildlife researcher, Torbit said it wasn't uncommon to see thousands of deer while driving the back roads in the Piceance Basin during winter. Although there are many reasons for the herd's continuing decline, he said the impacts of development and increasing human population are undeniable.

"We've pushed the mule deer to the edge of the cliff and that's all that's left for them," Torbit said.



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## ANTLERED DEER RIFLE HUNTING LICENSES



### White River Deer Herd

Source: Compiled by John Ellenberger from Colorado Parks and Wildlife figures on the number of hunting licenses offered for bucks during rifle seasons. The 2012 total of 2,025 licenses is just 17 percent of the 11,760 licenses offered in 2005 and reflects the declining deer population.



# Home of Colorado's White River herd

Colorado's White River herd is in portions of Rio Blanco, Moffat, Routt and Garfield counties. The area has long been known as Colorado's "mule-deer factory" and has some of the country's largest herds but the population has been declining for years and now is below the goal set by Colorado Parks and Wildlife.

## AN AREA RICH IN WILDLIFE – AND MINERAL RESOURCES

Northwest Colorado is home to large mule deer herds and other wildlife. It's also the site of significant oil and natural gas deposits as well as some of the world's largest oil shale formations. The area where the White River mule deer herd is found has been a drilling hot spot in recent years. The previous decade's rush of activity subsided as natural gas prices dropped and the national recession hit. However, the Bureau of Land Management is considering a plan that could add up to 15,000 wells in the area. Meanwhile, there is activity and traffic associated with the existing wells, pipelines, processing plants and roads.

### The current number of wells in the counties where the White River herd roams and the number of wells each added from 2005 to 2012:

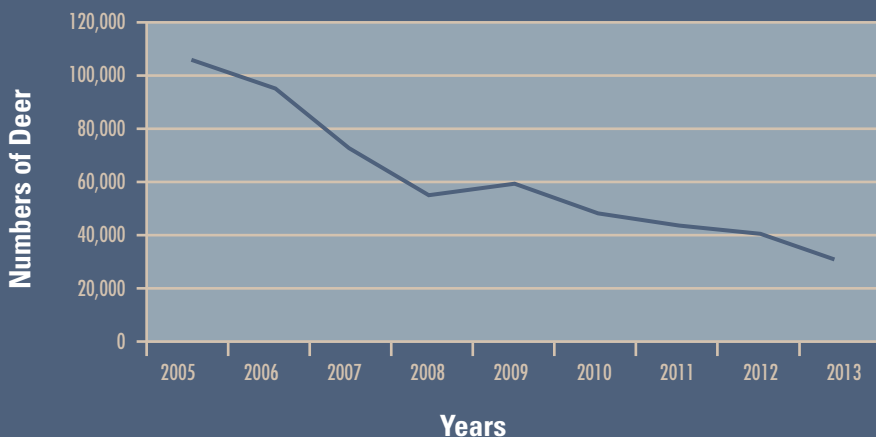
- Garfield County – 10,751 total. Number added 2005-2012: 7,842
- Moffat County – 620. Number added 2005-2012: 259
- Rio Blanco County – 2,926. Number added 2005-2012: 848
- Routt County – 44. Number added 2005-2012: 16

Source: Colorado Oil and Gas Conservation Commission



Roan Plateau in back with gas well in foreground, JUDITH KOHLER (top)  
Drill pads in former mule deer range in Wyoming, CAMERON DAVIDSON (bottom)

## POST-HUNT POPULATION SIZE



## White River Deer Herd

Source: Compiled by John Ellenberger based on estimates by Colorado Parks and Wildlife.

\*The 2013 population estimate of 32,000 is based on a change in the Colorado Parks and Wildlife's modeling that factors in recent monitoring of deer in the herd. CPW says it appears the population remained stable from 2012 to 2013 and fluctuations in numbers during that period is due to the modeling change. However, the overall population trend is down.

# Our recommendations going forward:

- State and federal land managers and biologists must work together to conserve mule deer habitat and help increase populations.
- The Bureau of Land Management should develop and implement strategies to avoid harmful impacts to deer herds as it considers uses of public lands. If development or activities can't be avoided or directed elsewhere, the BLM should do all it can to minimize the effects on deer and their habitat.
- The BLM should consult with Colorado Parks and Wildlife during planning to ensure that it uses the latest deer population estimates and information about the habitat. It needs to consider the potential cumulative impacts on deer when writing management plans and considering projects on public lands.
- The BLM should continue and expand its use of master leasing plans and other tools to address the potential impacts on deer herds before energy leases are offered on federal lands.
- The BLM must fulfill its conservation commitments and not proceed with projects if habitat conditions and deer population targets aren't met or if the agency fails to conduct promised monitoring or mitigation.
- CPW needs adequate staffing and funding to conduct research to continue producing the best deer population and other information.
- We recommend that CPW set priorities for recovery of the deer population in at least one area where biologists can examine the interplay of factors, such as habitat quality, and design a research and recovery program. We recognize CPW will need cooperation and coordination from other agencies, such as BLM, private landowners where possible, and commitment by funders.
- Wildlife enthusiasts, hunters and other conservationists must actively participate in CPW's ongoing development of a strategy to boost mule deer populations and participate in the BLM's planning processes.

Contact Colorado BLM, 303-239-3600,  
or [http://www.blm.gov/co/st/en/contact\\_us.html](http://www.blm.gov/co/st/en/contact_us.html).

Contact Colorado Parks and Wildlife: 303-297-1192 or [cpw.state.co.us](http://cpw.state.co.us)



## RESOURCES:

CPW, Colorado's Mule Deer Story, <http://cpw.state.co.us/learn/Pages/CO-MuleDeerStory.aspx>.

The Economic Contributions of Outdoor Recreation in Colorado, Southwick Associates,  
<http://cpw.state.co.us/Documents/Commission/2014/May/ITEM21-2013COEconImpactReport.pdf>

For more information, go to Our Public Lands, [www.ourpubliclands.org](http://www.ourpubliclands.org), and the Colorado Wildlife Federation,  
<http://www.coloradowildlife.org/>.

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