

**Controlled Livestock Grazing and
Rangeland Wildlife:
Positive Impacts
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**A Report
By**

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Summary

Our objective was to review the literature that evaluates how controlled livestock grazing can positively impact rangeland wildlife. We found a total of 38 studies and 17 literature reviews that deal with this subject. We identified 10 studies, that were well designed, well supported by other research and heavily peer reviewed, that showed definite positive impacts of controlled livestock grazing on wildlife species highly valued by the American public. These species included elk, mule deer, blue-winged teal, Mearns's quail, certain small mammals and certain songbirds.

Based on our examination of the literature, it appears that livestock grazing at light to moderate intensities can have positive impacts on many if not most wildlife species. We could not find any studies showing that livestock grazing at conservative to light intensities, as compared to grazing exclusion, adversely impacted a particular wildlife species. However, we did find evidence that some wildlife species can be adversely impacted by grazing exclusion. A variety of large mammals, small mammals, songbirds and some gamebirds can be adversely impacted by grazing exclusion. Mourning doves, scaled quail, prairie dogs, jackrabbits, horned larks, Brewer's sparrows and kangaroo rats are examples of wildlife species that can be adversely impacted by grazing exclusion.

Introduction

Western Range Consultants (Jerry Holechek and Dee Galt) was given the task of identifying the primary controlled livestock grazing studies which have positive impacts on rangeland wildlife by Mr. Dennis Parker, attorney, for Mr. Jim Chilton, an Arizona rancher. This task was assigned to us because some members of the environmental activist community in Arizona have claimed that controlled livestock grazing has never had any positive impacts on rangeland wildlife. Mr. Chilton is involved in a lawsuit with the Center for Biological Diversity (an environmental activist group) because they have claimed that he has mismanaged his Forest Service grazing allotment (Montana Allotment) south of Arivaca, Arizona. Various surveys we have conducted and reported annually since 1998 show the Montana Allotment is in excellent condition, lightly to conservatively grazed, in an upward trend and supports diverse and abundant wildlife. We believe controlled grazing on the Montana Allotment is having a positive impact on various wildlife species such as white-tailed deer, Mearns quail and various songbirds. Our objective is to identify specific scientific papers showing how well controlled livestock grazing can positively impact rangeland wildlife.

Procedures

We identified various literature reviews on the subject of livestock grazing impacts on rangeland wildlife. These were collected from the New Mexico State library and then used as the basis to identify and obtain the primary papers involving controlled grazing impacts on rangeland wildlife. In addition, we did a library search of current

literature (last 6 years) involving grazing impacts on rangeland wildlife. Various journals such as Conservation Biology, Wildlife Society Bulletin, Journal of Wildlife Management, Western North American Naturalist, Rangelands, Southwestern Naturalist, Ecology, Journal of Applied Ecology, Journal of Soil and Water Conservation, Oikos, Journal of Arid Environments, Western Birds, Journal of Mammology, American Midland Naturalist and Journal of Range Management were checked for possible relevant papers.

Results

We found a total of 38 studies and 17 literature reviews that show how controlled livestock grazing can positively impact different types and species of wildlife. Citations for these 55 papers are provided after this text. Most importantly, we have identified what we consider the top 10 scientific studies that show positive impacts of controlled livestock grazing on rangeland wildlife. These studies involve a variety of wildlife species and were well designed, were heavily peer reviewed and are well supported by other research. Some of the wildlife species positively impacted by controlled livestock grazing include elk, mule deer, Mearns's quail, mourning doves, horned larks, prairie dogs, jackrabbits and kangaroo rats.

Some of the ways controlled livestock grazing can enhance wildlife habitat are discussed by Holechek et al. (1982), Severson (1990) and Severson and Urness (1994). Livestock grazing when carefully controlled can create structural diversity and species diversity in vegetation. This can result in feeding, nesting, hiding and loafing sites in close proximity to one another. Cattle can remove rank grasses and open up dense stands of vegetation. This increases travel mobility for small wildlife like quail and improves forage quality for deer and elk. In summary, when properly managed,

STUDIES SHOWING POSITIVE IMPACT
OF CONTROLLED LIVESTOCK GRAZING
ON RANGELAND WILDLIFE

- Anderson, E.W., D. I. Franzen, and J.E. Melland. 1990. Forage Quality as influenced by prescribed grazing, p. 56-70. *In*: K.E. Severson. Tech. Coord., Can Livestock Be Used as a Tool to Enhance Wildlife Habitat? *USDA Forest Service Gen. Tech. Rep.* RM-194.
- Anderson, E.W., and R.J. Scherzinger. 1975. Improving quality of winter forage for elk by cattle grazing. *J. Range Manage.* 28:2-7
- Baker, D.L., and F.S. Guthery. 1990. Effects of continuous grazing on habitat and density of ground foraging birds in south Texas. *J. Range Manage.* 42:2-6.
- Bock, C.E., J.H. Bock, W.R. Kenney, and V.M. Hawthorne. 1984. Responses of birds, rodents and vegetation to livestock enclosure in a semidesert grassland. *J. Range Manage.* 37:239-243.
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- Brown, R.L. 1982. Effects of livestock grazing on Mearns quail in southeastern Arizona. *J. Range Manage.* 35:727-732.
- Buttery, R.F., and P.W. Shields. 1975. Range management practices and bird habitat values. *Proc. Symposium on Management of Forest and Range Habitats of Nongame Birds.* U.S. Dept. Agric. For Serv. Gen. Tech. Rep. WO-1.
- Campbell, H., D.K. Martin, P.E. Ferkovich, and B.K. Harris. 1973. Effects of hunting and some other environmental factors on scaled quail in New Mexico. *Wildl. Monogr.* 34.
- Daniel, A.J., J.L. Holechek, R. Valdez, A. Tembo, L. Saiwana, M. Fusco, and M. Cardenas. 1993b. Jackrabbit densities on fair and good condition Chihuahuan desert range. *J. Range Manage.* 46:524-529.
- Guthery, F.S. 1986. Beef, brush and bobwhites, quail management in cattle country. Caesar Kleberg Wildl. Res. Instit. Texas A&I Univ. Kingsville, TX.

TOP TEN STUDIES SHOWING CONTROLLED LIVESTOCK
GRAZING CAN POSITIVELY IMPACT WILDLIFE
AS COMPARED TO GRAZING EXCLUSION

- *Anderson, E.W., and R. J. Scherzinger.1975. Improving quality of winter forage for elk by cattle grazing. *J. Range Manage.* 28-2-7.
- *Bock, C.E., J.H. Bock, W.R. Kenney, and V.M. Hawthorne.1984. Responses of birds, rodents and vegetation to livestock enclosure in a semidesert grassland site. *J. Range Manage.* 37:239-243.
- *Bristow, K.D., and R.A. Ockenfels. 2000. Effects of human activity and habitat conditions on Mearns quail populations. *Arizona Game and Fish Dept. Res. Branch Tech. Guidance Bull.* No. 4, Phoenix, AZ.
- Kaiser, P.H., S.S. Berlinger, and L.H. Fredrickson. 1979. Response of blue-winged teal to range management on waterfowl production areas of southeastern South Dakota. *J. Range Manage.* 32:295-299.
- *Maestas, J.D., R.L. Knight, and W.C. Gilgert. 2003. Biodiversity across a rural land-use gradient. *Conservation Biology.* 17(5):1425-1434.
- Nelson, T., J.L. Holechek, R. Valdez, and M. Cardenas. 1997. Wildlife numbers on late and mid seral Chihuahuan desert rangeland. *J. Range Manage.* 50:593-599.
- Pitt, M.D. 1986. Assessment of spring defoliation to improve quality of bluebunch wheatgrass. *J. Range Manage.* 39:175-181.
- *Smith, G., J.L. Holechek, and M. Cardenas. 1996. Wildlife numbers on excellent and good condition Chihuahuan desert rangelands: An observation. *J. Range Manage.* 49:489-493.
- Smith, M.A., J.C. Malechek, and K.O. Fulgham. 1979. Forage selection by mule deer on winter range grazed by sheep. *J. Range Manage.* 32:40-46.
- Willms, W.A., A. McClean, R. Tucker, and R. Ritchey. 1979. Internactions between mule deer and cattle on big sagebrush range in British Columbia. *J. Range Manage.* 32:299-304.
- * Top 5 studies showing controlled livestock grazing can positively impact wildlife as compared to grazing exclusion.

STUDIES SHOWING POSITIVE IMPACT
OF CONTROLLED LIVESTOCK GRAZING
ON RANGELAND WILDLIFE

- Anderson, E.W., D. I. Franzen, and J.E. Melland. 1990. Forage Quality as influenced by prescribed grazing, p. 56-70. *In*: K.E. Severson. Tech. Coord., Can Livestock Be Used as a Tool to Enhance Wildlife Habitat? *USDA Forest Service Gen. Tech. Rep.* RM-194.
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