

# Management efforts for elk and deer may not benefit all wildlife

April 5 2016

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It's no surprise that most conservation efforts in the United States focus on animals that are hunted. But a new study from Colorado State University researchers found that improving habitats for game animals has mixed consequences for other animals in the same setting.

The study calls for more scrutiny of and a more holistic approach to current [management](#) efforts.

Hunting provides substantial economic benefits for states. Deer and elk hunters in Colorado, for example, must apply for permits annually. A deer license for non-residents runs \$432; a permit for in-state residents is \$43. A license to hunt elk is nearly \$500 for non-residents; the in-state charge is \$48. Nearly \$2 million from these fees support wildlife management and public land [conservation](#) in the state each year.

"There's this notion that habitat management that's good for game species is good for all wildlife," said Travis Gallo, Ph.D. student in the Department of Fish, Wildlife and Conservation Biology, and lead author of the study. "There's a lot of money that goes into habitat management for game species, and we wanted to see if there were any synergies between game management and conservation of species that were not the target of management actions."

While conducting a review of published papers, Gallo said that he and Associate Professor Liba Pejchar, also in the Department of Fish, Wildlife and Conservation Biology, switched gears once they saw the

lack of scientific research on the topic. The duo ended up writing an opinion piece or perspectives essay on the issue.

"We found only 26 studies that measured the direct and indirect effects of game management efforts on non-game animals," said Gallo.

Among the studies that did measure the effects of game management on non-game species, they found both positive and negative effects: a study of sage grouse management in the Western U.S. found that [conservation efforts](#) would likely protect 13 songbird species, while a study in Spain found that an increased abundance in wild boar, red deer and aoudad sheep decreased resources for native species.

The team also found instances where there were no effects. For example, a study that looked at prescribed fire on lizard abundance in central Texas found no short-term effect on other species.

Gallo said that one way to even the management playing field is to create new funding sources for wildlife conservation. The federal Pittman-Robertson excise tax—which was implemented in 1937—has successfully raised more than \$10.1 billion from sales on sporting goods that involve hunting, like ammunition and guns, fishing rods and reels. In 2009, following a similar model, a group of more than 6,300 state fish and wildlife agencies, biologists, hunters, birdwatchers and others proposed the Teaming with Wildlife Act, which would have provided additional funding for wildlife preservation through a small tax on all outdoor gear, including camping gear, binoculars and outdoor apparel. This bill, however, failed to pass through Congress.

Gallo said that there's talk in the conservation community about reviving this sort of proposal. "A tax like this would not only increase funding for conservation, but it may create a sense of investment by those people that are now helping pay for conservation," he said.

Gallo—who will graduate in May—said his research provides a good example, and hope, for the type of holistic approach that is needed.

"My research is piggy-backed on a mule deer experiment in northwestern Colorado," he said. "Colorado Parks and Wildlife was removing pinyon-juniper trees to increase the shrubs and grasses that mule deer like to eat. We collaborated with them and added another layer of research to assess the effects that this management may have on all the other birds and mammals in the area."

"The hunting and fishing communities contribute a lot of money and effort to [wildlife](#) management," he added. "If you can find synergies between management for hunted species and conservation for biodiversity, we would be more effectively and holistically managing the land."

The article, "Improving habitat for game animals has mixed consequences for biodiversity conservation," was published in advance online in *Biological Conservation*. The study will appear in the May print issue of the journal.

**More information:** Travis Gallo et al. Improving habitat for game animals has mixed consequences for biodiversity conservation, *Biological Conservation* (2016). [DOI: 10.1016/j.biocon.2016.02.032](https://doi.org/10.1016/j.biocon.2016.02.032)

Provided by Colorado State University

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