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WAPITI AND THE WESTERN WOLF:
A LANDSCAPE-SCALED RETROSPECTIVE REVIEW

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WAPITI AND THE WESTERN WOLF: A LANDSCAPE-SCALED RETROSPECTIVE REVIEW

BY JAMIE L. SANDBERG
BS Huxley College of the Environment

Abstract

This scientific literature review seeks to address the complex nature of deer population dynamics in the northern Cascade and Rocky Mountain states by examining the legacy and status of four native ungulates: the white-tailed deer (*Odocoileus virginianus*), black-tailed deer and mule deer (*O. hemionus*), and wapiti, or American elk (*Cervus elaphus*). I will also briefly discuss the major apex predators that are making a comeback on the landscape. This analysis of the ground-breaking research and literature available to the public identifies the natural and human-related factors keeping deer population levels in check, and specifically addresses the role of gray wolves (*Canis lupus*) in driving current population trends. Results suggest that habitat restoration rather than predator control has the highest potential to produce healthy ecosystems, given the current major limitations on each species. Without serious attention to reducing grazing pressure and public access, restoring soils and native vegetation, and a return to the natural disturbance regime, wildlife will continue to struggle in areas with or without degraded habitat and/or native predators.

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Introuduction

In 1986, a pack of gray wolves (*Canis Lupus*) from Alberta, Canada established territory in the North Fork Flathead River Valley of northern Montana. These wolves became the first established pack documented in the western United States in over fifty years. Since the controversial return of the wolf to the American west, the question has been asked, “Are they likely to trigger dramatic prey declines?” This review seeks to answer that question by examining deer and wapiti population trends in the western states where wolf recovery is taking place. Fact, fiction, myth, and lore have all become major components of the current wolf recovery debate.

Deer and wapiti are the west’s premier big game species. They provide hunting and recreational viewing opportunity to thousands of people every year and are cornerstones of the Pacific Northwest and Intermountain West landscapes. As such, they serve as excellent indicators of the long-term ecological and social consequences of large predator recovery in the United States. This literature review addresses the primary factors found to be limiting their survival and recruitment, including the role of gray wolves in driving current population trends.

Materials and Methods

The study area examined in this review includes the five western states in the lower forty-eight with established gray wolf populations, namely Washington, Oregon, Idaho, Montana, and Wyoming. The government wildlife agencies responsible for managing deer and wapiti within each state produce management plans specific to each species that contain measurable goals and population objectives defined according to existing population levels, habitat potential, desired harvest opportunities, and modelling projections. With an exception, the Wyoming Game and Fish Department (WGFD) has not produced any species management documents and instead regularly adjusts objectives for individual Herd Units based on the most recent harvest and survey trends. Each of the five state wildlife agencies also releases periodic progress and status reports that contain recent population censuses, adjusted management strategies, and relevant research findings.

Peer-reviewed literature has been collectively analysed and integrated into this review to delimit the impact of various natural and human-related factors impacting deer and wapiti herds. Examining population dynamics at a landscape scale, along with time-series research on global change, provides

an improved perspective on variations in regional climate and habitat. Public and private land use, Forest Service and timber industry practices on public lands, urban development, and grazing practices were investigated to estimate the degree of human impact on struggling herds. Due to a high public demand for predator ecology data in the states where wolves are becoming established, numerous predator-prey dynamic studies have been conducted in recent decades. The most comprehensive and long-standing studies have been completed within the Greater Yellowstone Area (GYA).

History on the Landscape

Deer species began migrating to North America across the Bering Strait at the end of the Miocene, about five million years ago. The white-tailed deer, black-tailed deer, and mule deer (members of the species *Odocoileus*) subsequently became some of the most abundant and widely distributed mammals on the continent. It is estimated that the mule deer and the wapiti, or American elk (species *Cervus*), first migrated to North America later, around ten thousand years ago. By the time of European settlement of North America, an estimated ten million wapiti inhabited the continent.

The name “wapiti” is an indigenous American Cree and Shawnee word meaning “white rump”. The name “elk” is a European name originally given to the moose (*Alces alces*) in Europe. European settlers mistook the wapiti for a moose upon arrival in North America. The discrepancy has remained ever since. Throughout this manuscript, “elk” will refer to the wapiti.

Westward expansion at the turn of the twentieth century brought with it logging activity and predator control that, at first, increased the landscape’s carrying capacity for ungulates, or hoofed mammals. Populations of deer and wapiti quickly plummeted due to unrestricted hunting and land clearing. Wapiti numbers dwindled to around ten thousand individuals in the early 1900s, with the largest populations surviving in Yellowstone National Park and the Grand Teton Mountains in Jackson, Wyoming. The white-tailed deer and black-tailed deer populations were nearing extinction at that time. Those deer species quickly rebounded with conservative hunting restrictions, land clearing, a lack of major predators, and several translocation efforts. By the 1950s, deer were so numerous that planned reductions began. Wapiti numbers remained low until the latter half of the twentieth century when state-wide enhancement efforts, reduced deer densities, and increases in available habitat allowed for steady growth.

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