



Wyoming Game and Fish Department

Conserving Wildlife, Serving People

Governor Mark Gordon • Director Angi Bruce

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Memo: Travel, Recreation, Wildlife, and Cultural Resources Committee, June 6, 2025

To: Chairman Bill Landen and Chairman Andrew Byron

From: Angi Bruce, Director

Purpose: To provide an overview of the Department's mule deer management.

Introduction and Background

Wyoming has the third-largest mule deer population in North America, but numbers have declined by 47% since 2000. The 2024 estimate is around 230,500—well below the goal of 455,600. Despite strong buck-to-doe ratios (32:100 since 2000), fawn productivity has been too low to sustain populations in most years, and hunter harvest has dropped 66% over 25 years. These trends mirror declines seen across mule deer ranges in North America.

Factors Affecting Mule Deer

Mule deer population declines can be attributed to a variety of factors including habitat conditions, weather patterns, increased human-caused disturbance, disease, predation, and highway collisions. Older and less productive vegetation throughout key mule deer habitats is of primary concern, reducing forage quantity and quality. The interruption of natural fire regimes has impacted habitat diversity and set back normal ecological processes. Invasive annual grass infestations have altered native plant communities in much of the west and also increases wildfire risk. Habitat fragmentation has reduced habitat suitability, while barriers to movement such as roads and fences can impede migrations or seasonal movements, increasing stress and mortality. Periodic drought has led to reduced nutritional condition of adult females, and occasional severe winters have resulted in significant die-offs across all age classes of mule deer in localized areas of Wyoming.

In addition, Chronic Wasting Disease (CWD) has dramatically increased in prevalence and distribution throughout the state. This always-fatal disease represents a chronic source of mortality plaguing most Wyoming mule deer populations to varying degrees. Periodic outbreaks of Epizootic Hemorrhagic Disease and Bluetongue Virus have caused significant localized die-offs. Expanding populations of other herbivore species such as elk, white-tailed deer, and feral horses can increase competition within key mule deer habitats, playing a potential role in mule deer population declines. Predator populations have also expanded in the past few decades. When coupled with other stressors, predation now plays a more significant role in regulating mule deer. Finally, recent estimates indicate ~5,500 mule deer are struck by vehicles on Wyoming highways each year, a figure that is likely conservative as not all collisions are reported or dead deer observed.

Population Monitoring and Research

The Wyoming Game and Fish Commission (Commission) has significantly increased its investment in mule deer monitoring and research in recent years. Aerial survey budgets to collect herd sex and age composition and abundance (how many animals in the population) have been increased along with a substantial investment in a cutting-edge mule deer focal herd monitoring program. This program entails

collaring several hundred mule deer over a five-year period in five key mule deer herds across the state. This ongoing project is enabling managers to better understand mule deer movements, survival, habitat selection, and causes of mortality in herds with differences in habitat quality, predator communities, disease prevalence, weather, and more. Additionally, the Department has and continues to engage in numerous targeted research projects to get answers to pressing questions about mule deer ecology and management. Projects may be completed entirely by the Department or conducted in collaboration with one of several partner organizations. Primary research topics include studying movement and migration, survival, disease (primarily CWD), nutritional ecology, and new survey and tracking technology.

Mule Deer Management in Wyoming

Hunting seasons do not regulate mule deer population trends in Wyoming. Given long-term declines in mule deer numbers, Department managers have long prescribed extremely conservative male-only hunting seasons. With few exceptions to address localized agricultural damage, hunters have generally not been allowed to harvest significant numbers of female mule deer in Wyoming for the past two decades. Hunting seasons now focus on providing buck harvest opportunity based on buck availability utilizing varying management strategies designed to balance hunter opportunity with hunting quality.

The Department and Commission continue to engage in long-term mule deer conservation efforts. These efforts include but are not limited to habitat improvement projects, conservation easements, identifying migration corridors, highway crossing projects, disease management, managing competition from other species, and predator management. The Department's habitat program focuses on securing internal and external funding for prescriptive habitat treatments such as aspen and mountain shrub enhancement, partnering on highway crossing projects, fence modification, invasive annual grass treatment, conifer removal, installation of Beaver Dam Analogs, and planting trees and shrubs.

Mule Deer Public Outreach Efforts – Wyoming Game and Fish

Given widespread concern over long-term mule deer declines, the Department has embarked on several statewide and local public engagement efforts to gauge public opinion on mule deer conservation and management over the past 20 years. A statewide Mule Deer Initiative spurred localized collaborative stakeholder engagement processes to discuss mule deer issues. An extensive collaborative process was held in 2018-2019 to garner stakeholder input to develop Wyoming's CWD Management Plan. Four statewide Mule Deer Hunter Attitude Surveys have been conducted since 2007, with the most recent being conducted in 2023 whereby ~78,000 Wyoming resident hunters were surveyed to gauge opinion regarding mule deer hunting seasons. Finally, in fall of 2024, a series of Mule Deer Community Conversations were held in 37 locations across the state to solicit public opinion on mule deer conservation and management in an informal setting. Future public engagement actions include incorporating feedback, reassessing programs, expanding messaging, and attempting to manage public expectations.

Attachments

Mule Deer Snap Shot
Mule Deer Community Conversations Summary
2024 CWD Surveillance Annual Report
2024 Mule Deer Monitoring Program Annual Report
2023 Hunter Attitude Survey Summary
Mule Deer Management PowerPoint Presentation