



# MULE DEER IN WYOMING

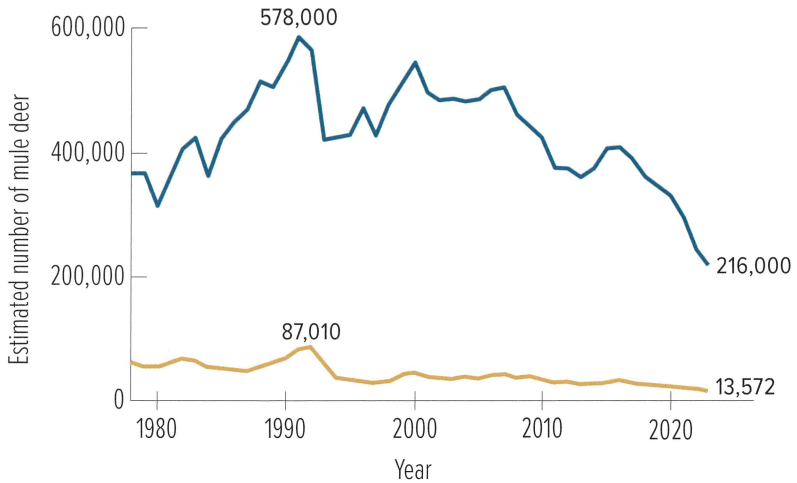


# THE DECLINE IN MULE DEER

Wyoming's mule deer are not only a cherished part of our wildlife heritage but also play a crucial role in our ecosystem and rural economies. Historically, mule deer were relatively uncommon in the early 1900s. Due to favorable conditions, populations surged in the 1950s and 1960s and reached historic highs. The most recent population peak occurred in 1991, with around 578,000 mule deer in the state. However, by 2023, this number has declined to an estimated 216,000 animals. Sharp declines in mule deer have occurred throughout western North America, most notably due to habitat loss and degradation along with changing weather patterns.

Mule deer declines highlight the continued need for action. Game and Fish, along with many partners, has long been dedicated to addressing these challenges through implementing large scale habitat projects, working to minimize impacts to habitat, highway crossing projects, research and conservative hunting seasons. It is critical we continue – and even expand – mule deer conservation efforts while ensuring Game and Fish understands current public sentiment toward managing hunting opportunities now and into the future.

## TRENDS IN WYOMING MULE DEER



Population

Harvest



# FACTORS INFLUENCING DECLINE



## Weather/climate

Periodic droughts have reduced the quality and quantity of mule deer habitat in Wyoming resulting in poor body condition of mule deer. In addition, the increased frequency of severe winters has led to population die-offs. Extreme fluctuations in weather act together with other factors affecting mule deer, preventing population recovery.



## Habitat loss

Mule deer need habitats rich in nutrition, especially where they spend the summer and fall, so they can accumulate fat stores to help them survive winter.

Habitat loss has occurred because of:

- Energy and rural development.
- Highways and fences.
- Invasive plants like cheatgrass outcompeting nutritious, native plants.
- Decline in the nutritional quality of shrub communities.



## Predation

Research reveals a wide range of effects that predation can have on mule deer populations. While predation rarely limits thriving mule deer populations, it can suppress recovery when populations are struggling due to drought, poor nutrition or harsh winters.



## Disease

Mule deer are susceptible to diseases that can cause widespread and significant die-offs, including hemorrhagic diseases. However, chronic diseases have more long-term effects on wild populations. Chronic wasting disease (CWD), a 100% fatal, slow-moving disease, is now found in most hunt areas in the state and is affecting many mule deer herds, some significantly.



## Resource access

Mule deer move to follow the most nutritious vegetation in the spring and summer and again for the winter to avoid deep snow and cold temperatures. Difficulty accessing important seasonal habitats due to obstacles like roadways, fences and other infrastructure may reduce the quality of forage mule deer can access.



## Competition

Elk and white-tailed deer often occupy the same habitats as mule deer, which creates competition for food on the landscape. However, many mule deer populations have declined without these other species being present. Game and Fish is committed to understanding the influence of competition on mule deer declines in Wyoming.

# THE WORK OF GAME & FISH

## RESEARCH

### Science, Research and Analytical Support Unit (SRA)

In 2021, Game and Fish established the SRA unit dedicated to improving survey and population estimation techniques, as well as tackling special research projects to support conservation and management efforts. One such effort is the Mule Deer Focal Herd Project, which is resulting in enhanced population monitoring in herds across the state.

### Working with research partners

Game and Fish has funded and collaborated on extensive research projects with the University of Wyoming. These research projects have focused on studying migration, body condition, disease, survival and predation. The research conducted will help inform future management decisions.

## MANAGEMENT

Game and Fish works to provide hunting opportunities while ensuring biologically appropriate levels of harvest. Seasons are reviewed annually to allow changes. When biologists set harvest numbers, they consider:

- What is biologically appropriate for mule deer and their habitats.
- Private property conflicts.
- Hunter attitudes and recreational opportunities.
- Management recommendations outlined in the Wyoming CWD Management Plan.

### Conservative hunting seasons

Wyoming's mule deer hunting seasons have long been conservative, with buck-only harvest allowed in most of the state. Doe survival and fawn production drive population growth.

## CONNECTING MULE DEER TO HEALTHY HABITATS

### Habitat improvements

For decades, Game and Fish has worked alongside numerous partners to conduct a vast array of habitat improvement projects to support mule deer and other wildlife in Wyoming. Identifying and restoring crucial habitat remains a priority for the conservation of Wyoming's mule deer. Game and Fish annually reports on habitat work completed in the Statewide Habitat Plan annual report found on the Game and Fish website.

### Wildlife crossing work

In the last five years, Game and Fish, the Wildlife Fund, WYDOT and various partners have completed three significant wildlife crossing projects on major Wyoming highways. There are four additional crossing projects currently in the planning, fundraising or construction stages. All of these projects will benefit mule deer in the long term, resulting in an 80% or greater reduction in wildlife-vehicle collisions.

Many projects have been completed across the state, which include installing paired gates, removing vegetation to improve sight lines, modifying right-of-way fences and using signage to effectively reduce wildlife-vehicle collisions without the expense of building structures.

### Migration corridors

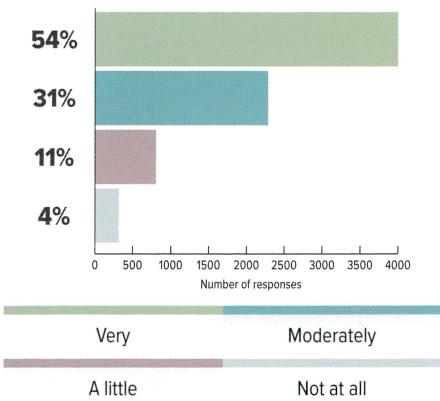
Game and Fish is a nationwide leader in the science of migration with a wealth of GPS collar data and the longest-documented mule deer migration in the world. We work with partners to prioritize the conservation of migration corridors and implement projects to enhance forage and maintain connectivity for these migrations to persist.



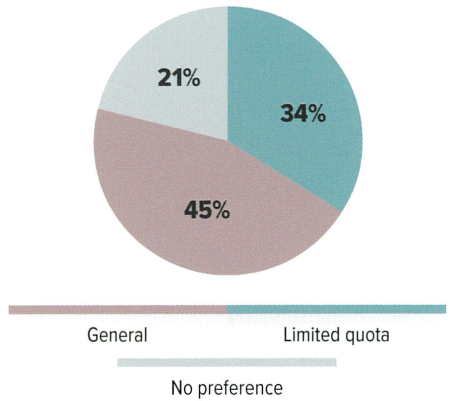
# HUNTER ATTITUDE SURVEY

Hunter attitude surveys help Game and Fish understand the desires of hunters. In 2023, Game and Fish surveyed Wyoming resident hunters to better understand their perspectives on mule deer management and their opinions about current and future mule deer hunting opportunities. All Wyoming residents who held a mule deer license in the past three years received the survey; more than 77,000 people, with over 10,000 hunters responding. Game and Fish manages mule deer hunting opportunities based on what is biologically appropriate for populations while balancing public sentiment. Conservative buck-only hunting seasons do not affect the overall health of mule deer populations, although differences between season structures do affect hunter opportunity and hunting quality.

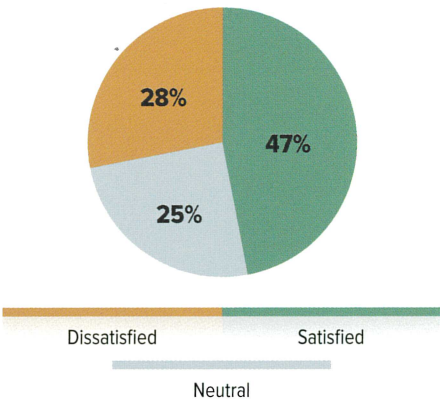
## How important is it to you to hunt mule deer every year?



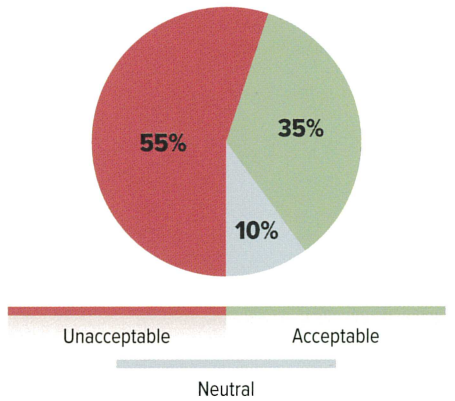
## Do you prefer general license seasons or limited quota seasons?



## How satisfied are you with current hunting opportunities, using a combination of general and limited quota hunt areas?



## How acceptable or unacceptable would limited quota seasons in all hunt areas in Wyoming be to you?



## BY THE NUMBERS

**216,000**

Estimated size of Wyoming's mule deer population in 2023, 50% lower than the 40-year average.

**66**

Fawns per 100 does are required to sustain mule deer populations, otherwise, populations generally decline. Statewide fawn ratios met or exceeded 66 per 100 females in only seven years since 2000.

**83%**

Of Wyoming's deer hunt areas now have CWD present. Many herds across the state now experience high CWD prevalence, which can lead to population impacts.

**5,500**

Mule deer are reported to have been hit in highway collisions in Wyoming on average each year.

**\$91 MILLION**

Has been raised for wildlife highway crossing projects through partnerships with WYDOT and other funding sources.

**\$29 MILLION**

Funding leveraged through Game and Fish and partners for habitat improvement projects for mule deer over the last ten years, with 147 habitat projects completed in 2023 alone.

**3,000+**

Number of mule deer collared for 37 extensive, multi-year research projects over the past 25 years to learn more about ecology, movements and factors affecting mule deer.

**57%**

Of hunters surveyed in 2023 supported (with 25% neutral and 19% opposed) seasons designed to reduce CWD levels through harvesting deer at greater rates to reduce density.

**\$861 MILLION**

Estimated economic value of Wyoming's mule deer.

Calculated by the Haub School's Knobloch Conservation Economics and MacMillan Private Lands Stewardship programs.



## GET INVOLVED

- Engage in public meetings and the season-setting process.
- Reach out and have conversations with local Game and Fish staff.
- Volunteer or support conservation organizations and projects.
- Install wildlife-friendly fencing on your property.
- Follow Game and Fish on social platforms and subscribe to news releases.

Scan the QR code to learn more about mule deer in Wyoming and events to engage with your local biologists and managers.



Scan the QR code or visit [bit.ly/muledeerinwyoming](https://bit.ly/muledeerinwyoming) for mule deer updates.