



SPENCER J. COX  
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Lieutenant Governor

# State of Utah

## DEPARTMENT OF NATURAL RESOURCES

JOEL FERRY  
Executive Director

### Division of Wildlife Resources

J. SHIRLEY  
Division Director

## MEMORANDUM

TO: Utah Wildlife Board / Regional Advisory Councils

FROM: Kent Hersey, Big Game Projects Coordinator

DATE: October 20, 2023

**SUBJECT: Deer Hunt Strategies Research Proposal**

In response to public feedback, the Utah Division of Wildlife Resources recommends implementing a research study on various general-season deer hunting units in southern Utah. The purpose of the study is to determine if hunt restrictions based on antler points, weapon technology and/or season length can improve mule deer population performance, hunting opportunity or hunter satisfaction in Utah. A summary of the research proposal is below. The full research proposal is attached.

- 1) We recommend implementing hunt restrictions on the following units:
  - a) Four points or more (on at least one side) antler restrictions on the Pine Valley unit.
  - b) Shortened general-season dates on the Beaver and Southwest Desert units.
    - i) Two-week archery hunt, beginning the first Saturday in September.
    - ii) Five-day muzzleloader hunt, maintaining the current Wednesday opening day.
    - iii) Five-day any legal weapon hunt, maintaining the current Saturday opening day.
  - c) Restricted weapons on the Mt Dutton unit.
    - i) Weapons restrictions will be based on the recently passed definitions.
  - d) All three of the above strategies on the Boulder/Kaiparowits unit.
  - e) Reference units (no treatments/strategies) on the Monroe and Zion units.
- 2) We recommend setting permit numbers on each of the units based on the four-year average of permit numbers from 2020 to 2023. We also recommend maintaining permit numbers on the units at these values for the entire study, unless the buck-to-doe ratio falls below 15 or rises above 24. For those situations, we recommend allowing the DWR director to adjust permits by up to 20% annually in an attempt to maintain stable buck-to-doe ratios.
- 3) We recommend implementing this study for four hunting seasons (2024-2027) to allow sufficient data to assess both the effects on the deer populations and the social acceptance or disapproval of these strategies.

**General-season buck deer permit treatment and control units recommendations**

<b>Unit</b>	<b>Treatment type</b>	<b>Four-year average permits</b>
Pine Valley	Four points or more antler point restrictions	3,150
Beaver	Shortened seasons	1,475
Southwest Desert	Shortened seasons	525
Mt Dutton	Restricted weapons	325
Boulder/Kaiparowits	Combined, all treatments	1,125
Monroe	Reference, no treatment	750
Zion	Reference, no treatment	2,900



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## Hunting Strategies for Buck Mule Deer in Utah: A Research Proposal Investigating Antler Point Restrictions, Shortened Season Dates and Restricted Weapons

### Introduction

Mule deer are of great importance to people who live and hunt in Utah. Both deer hunters in Utah and the Utah Division of Wildlife Resources (DWR) are passionate about mule deer and want productive mule deer populations that offer ample and diverse opportunities for hunting. The DWR manages mule deer populations as a sustainable resource and for the use and benefit of all Utahns. Management recommendations for mule deer are designed to accomplish the goals and objectives outlined in the [Utah Mule Deer Statewide Management Plan](#), and the recommendations for this study are formulated according to the strategies outlined in that plan.

The DWR listens to hunters and is open to feedback and direction. Hunters regularly provide feedback, ask questions and share concerns about mule deer management in Utah. The DWR carefully considers that public feedback and strives to implement science-based and data-driven management. As detailed in the statewide management plan, one strategy is to implement research studies on specific herd units that are chronically below population objective to identify limiting factors and recommend solutions. Often, the research priorities are driven by biologists, but passionate mule deer hunters and advocates also contribute information and request answers to specific questions related to management of mule deer.

Utah has the largest active mule deer research and monitoring program in the West and is constantly seeking to learn and improve mule deer management. Sometimes, the public asks the DWR to test new strategies or to take a fresh look at management practices that may have been implemented and discontinued in the past. Previous research projects conducted by the DWR have shown that new discoveries can be made — particularly given the use of new technologies not available to earlier research efforts.

The mule deer hunting strategies most frequently asked about and requested by hunters include antler point restrictions, shortened season dates and restrictions on hunting weapon technology. (These strategies are often viewed as ways to increase hunting opportunity while also managing for more mature bucks). Many of these strategies have been tested in the past in Utah and other western states with mixed results. However, with new research capabilities in place, along with different hunt structures and an intense and growing demand and interest in mule deer hunting, we are proposing to implement these strategies on a few units in southern Utah on a trial basis. We want to research their impacts on mule deer populations and understand the social implications of these strategies.

### Goals of the Study

The goal of the study is to determine if hunt restrictions based on antler points, season lengths and weapon technology can improve mule deer population performance, hunting opportunity and satisfaction in Utah. Specifically, we aim to determine if implementing these management strategies results in: 1) sustainable increases in overall deer numbers, overall buck numbers, and/or fawn production, 2) maintained or expanded general-season hunting

opportunities, and 3) increased satisfaction with a) deer management practices, b) available opportunities to hunt mule deer or c) the mule deer hunting experience.

### Proposed Methods and Timeline

We propose to implement and test the following mule deer buck hunting strategies: antler point restrictions, shortened season dates and use of restricted weapons. We will test each of these strategies on various hunting units and compare results on those units with the past performance of those units as well as performance on nearby reference units where those strategies will not be implemented. Our proposed test and reference units are located in southern Utah because of public input and demand from hunters in that region for changes to harvest strategies. Moreover, large population fluctuations on northern Utah units after winter 2022-2023 make that part of the state less suited to a research study addressing hunt strategies at this time. We propose these hunt strategies be implemented for four hunting seasons (2024-2027) to allow sufficient data to assess both the effects on the deer populations and the social acceptance or rejection of these strategies. After the testing concludes, we will analyze the results and take the findings into consideration when the next version of the Utah Mule Deer Statewide Management Plan is revised and implemented.

#### Antler point restrictions — Pine Valley unit

Hunters on this unit would only legally be allowed to take a buck with four points or more on at least one antler. A point means a projection longer than one inch, measured from its base to its tip. The eye guard is not counted as a point.

#### Shortened general-season dates — Southwest Desert and Beaver units

Archery — 14 days, opens the first Saturday in September

Muzzleloader — 5 days, Wed.–Sun., maintaining the current opening day

Any Legal Weapon — 5 days, Sat.–Wed., maintaining the current opening day

#### Restricted weapons — Mt. Dutton unit

Restricted archery — current definition with the following additional restrictions:

- (a) must be a single-stringed long bow or recurve bow with no cables, pulleys or cams;
- (b) has no sights; and
- (c) has a draw weight of 40 pounds or more.

Restricted muzzleloader — current definition with the following additional restrictions:

- (a) the ignition system is limited to traditional flintlock, wheellock, matchlock, musket cap, or percussion cap which must be entirely visible when the hammer is drawn back. All other ignition systems, including 209 primers, are prohibited; and
- (b) contains only open sights or peep sights.

Restricted rifle — current definition with the following additional restrictions:

- (a) contains only open sights or peep sights; and

(b) cannot be semi-automatic.

Combined all treatments — Boulder/Kaiparowits unit

In order to test for compounding effects of treatments, we also recommend testing one unit that will receive all three treatments simultaneously, including antler point restrictions, shortened season dates and restricted weapons.

Reference Units — Monroe and Zion units

These units will not have any treatment, in order to provide comparative data.

Permits Numbers on Experiment Testing and Control Units

The proposed buck harvest strategies will be implemented with the goal of maintaining opportunities for hunters while also having healthy, robust mule deer populations. To control for variation in hunter numbers, we propose maintaining stable numbers of general-season deer permits in the treatment and reference units throughout the study. By maintaining permit numbers, we will be better able to attribute observed responses to changes in hunt strategies rather than fluctuations in permit numbers.

To set permits, we propose using the four-year average of permit numbers from 2020-2023. The DWR will monitor postseason buck-to-doe ratios, but will not recommend annual changes to permit numbers unless ratios deviate drastically from the current objectives (18 to 20 bucks per 100 does). If the buck-to-doe ratio exceeds 24 bucks per 100 does or drops below 15 bucks per 100 does on a given unit, the DWR director may adjust permits up to 20% annually in an attempt to maintain stable buck-to-doe ratios. This adjustment may occur during the first year of the study if any of the study units are found to be outside the buck-to-doe ratio parameters during 2023 postseason classification. The percent adjustments will be determined using the DWR’s proven methodology currently used to achieve buck-to-doe ratio objectives on other general-season units with the target of stabilizing buck-to-doe ratios and getting them within the 15 to 24 range.

**General-season buck deer permit treatment and control units recommendations**

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### Monitoring and Results

The DWR staff and research partners will collect pertinent data to evaluate the effectiveness of the three recommended hunting strategies. On all units, we will collect fall classification data, including the number of fawns per 100 does to evaluate changes in production and 6-month neonate fawn survival. We will also collect data on the number of bucks per 100 does, including the number of mature bucks per 100 does, to assess how the different hunt strategies may influence the male segment of the population. On Boulder/Kaiparowits, Pine Valley, Zion (reference) and Monroe (reference), we will assess adult buck and doe survival and body condition (via ultrasonography), whereas we will assess 6-month fawn survival on Monroe and Pine Valley. On all units with collared mule deer, we will investigate mortalities to determine the likely cause of death for each animal. Combining both classification and survival data will allow us to calculate the population growth rate ( $\lambda$ ) for each population and determine whether it changed during this study and the likely reason for any changes.

Hunter compliance — particularly with the antler point restrictions treatment — will be a major part of assessing the influence of these new hunt strategies. Consequently, we will conduct line transect surveys on each unit to estimate wounding loss (one of the primary arguments against antler point restrictions) and estimate the number of animals shot but abandoned. We will also assess illegal take or abandoned animals and non-compliance with season dates and weapon restrictions based on the number of law enforcement cases.

We will use mandatory harvest reporting to determine success rates for hunters. Mandatory reporting will include collection of data on antler size, estimated ages of harvested bucks, date of harvest, number of and specific days hunted, hunter satisfaction and hunter crowding. We will also examine application data to assess whether hunters increased their selection for units with the different hunt strategies or avoided them. Lastly, we will conduct at least one survey (possibly more) of hunters to get more in-depth information on their opinions about the different hunting strategies.

The DWR will collaborate with research partners to conduct a thorough scientific analysis of data collected to understand the influence of changes in hunt strategies on mule deer populations and hunting in Utah. All results will be evaluated in the context of study goals and will be considered in the statewide deer plan revision that is tentatively scheduled for 2029.

### Additional Strategies and Measures to Enhance Deer Populations

Although this study is focused on testing the impacts and interest of three different hunting strategies in southern Utah, the DWR will continue to do everything we can to enhance and grow deer populations across the state. These efforts include the following:

- Continuing to monitor mule deer survival, body condition and cause-specific mortality on units throughout Utah.
- Conducting other mule deer research studies designed to identify and implement management strategies to address limiting factors for each population.
- Identifying movement corridors and movement barriers across the state in collaboration with the Utah Wildlife Migration Initiative.

- Completing extensive habitat-improvement work through Utah's Watershed Restoration Initiative, with an increased focus on summer range where needed.
- Continuing our aggressive predator-management program to minimize the impacts predators can have on mule deer populations.