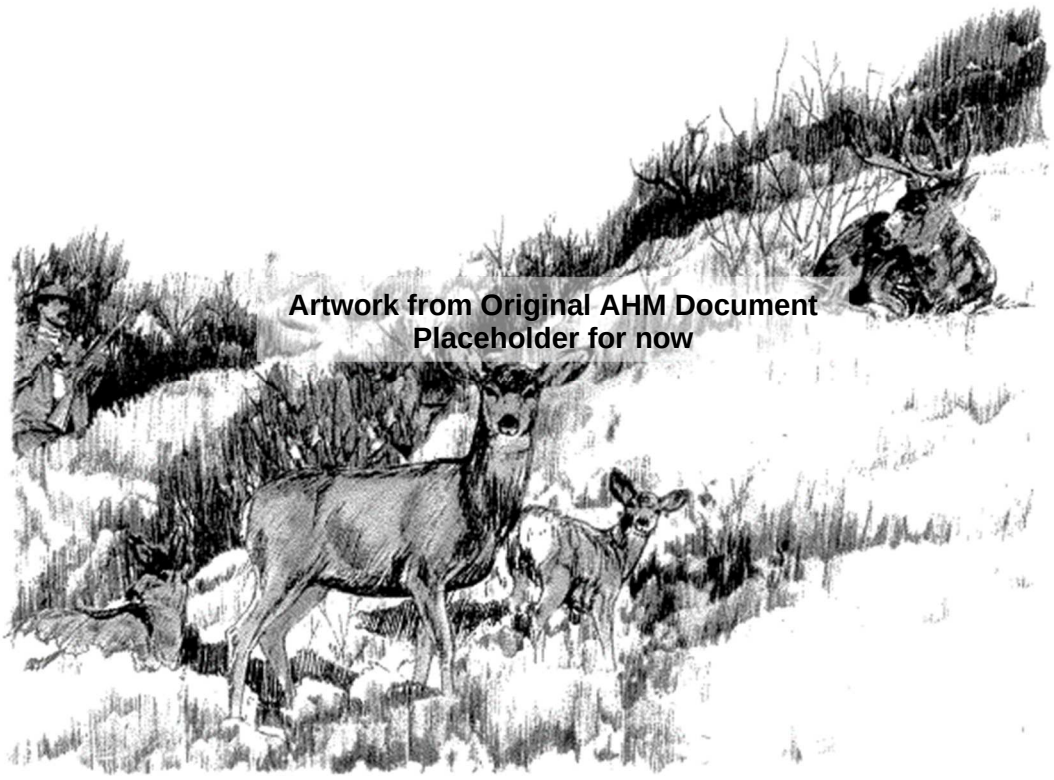
ADAPTIVE HARVEST MANAGEMENT

- MULE DEER POPULATION OBJECTIVES
- HUNTING REGULATION STRATEGIES
- SPECIAL MANAGEMENT HUNTING DISTRICTS
- MONITORING PROGRAM
- CHRONIC WASTING DISEASE MANAGEMENT



MONTANA FISH, WILDLIFE & PARKS

DRAFT July 2021

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ACRONYMS

AHM - Adaptive Harvest Management

ARM - Administrative Rules of Montana

BLM - Bureau of Land Management

CWD - Chronic Wasting Disease

DNRC - Montana Department of Natural Resources and Conservation

FWP - Fish, Wildlife & Parks

GPS - Global Positioning System

HD- Hunting District

LTA - Long-Term Average

MCA - Montana Code Annotated

PMU - Population Management Unit

SMD - Special Management District

TSE - Transmissible Spongiform Encephalopathy

USFS - United States Forest Service

USFWS - United States Fish and Wildlife Service

WMA - Wildlife Management Area

PREFACE

This document is a revision of the original Adaptive Harvest Management (AHM) document published in January 2001 (Montana Fish, Wildlife & Parks 2001). The previous document formalized protocols for harvest management and monitoring of mule deer which have been in place and unchanged since that time. Based on direction from the seven Regional Wildlife Managers, in 2014 a Deer Working Group consisting of one management biologist from each Region, a research biologist, a statistician, and the Game Management Bureau Chief began meeting to discuss Montana's deer harvest management program. This group identified a need for updating the AHM document and began discussing changes in 2015. The intent of this document is to replace the 2001 AHM plan and those portions of a Deer Management Policy adopted in February of 1998 by the Montana Fish, Wildlife, and Parks (FWP) Commission (now Fish & Wildlife Commission) that are inconsistent with or duplicative of the harvest management described in this document. Throughout this revision much of the text appears as it was written in 2001, although necessary changes have been incorporated throughout the document.

Major Changes from the 2001 AHM Document

Fish, Wildlife & Parks has observed both positive and negative aspects of the AHM structure as laid out in the original 2001 document. Five major changes are included in this revision:

1) Changing the definition of long-term average (LTA) as a metric for monitoring mule deer
2) Changing how population triggers are used to move from one mule deer hunting regulation package to another
3) Formally encouraging the alignment of hunting regulations among adjacent hunting districts (HDs)
4) Removing predictive population modelling as one of the four major components of AHM, though work on this aspect remains a priority for research and development
5) Updating correlations between this AHM document and chronic wasting disease (CWD) management

In this revision, LTA is defined as all data in all years for which data are available for the metric being considered, with two exceptions: 1) because of changes in the methods used to gather and calculate harvest information using data from 1986 forward when calculating harvest related LTAs is recommended and 2) when a population has shown a definitive trend upward or downward over time one may want to use a shorter time-frame to calculate LTA. This exception is necessary because in some populations we have observed long-term downward trends suggestive of changing conditions beyond those manageable through hunter harvest. For example, factors such as changes in habitat conditions, competition with other ungulates, and/or predation rates may have greater impacts on populations than hunting season regulations. It may not be feasible to return a population to a higher level through hunting season adjustments without changes to other limiting factors. The same logic applies to populations that have increased over an extended period of time. Therefore, in this revision we define the LTA as either all data available for the metric being measured in relatively stable populations or in populations showing a long-term increase or decrease, the most recent data for a period of at least 10 years.

A second major change is how the population triggers are used to move between hunting regulation packages. The 2001 AHM document used a series of "and/or" statements to suggest

changes in regulation packages. These “and/or” statements placed equal weight on utilizing recruitment data and survey trend area cumulative mule deer counts. In the absence of survey/recruitment data, buck harvest data could be used as a measure of mule deer performance. At times, these metrics did not all point to the same hunting regulation package based on how they were written in AHM. Although use of these specific metrics is not being changed, how they can be used in this process has been altered. When available, recruitment is now emphasized with survey trend count or buck harvest data to be used depending on what information is available. The value of recruitment related to mule deer demographic performance is a significant biological factor. Demographically, trend area mule deer count data and buck harvest estimates are also important, but both rely first and foremost on recruitment, hence placing recruitment data higher in value.

In addition, in this revision, a restrictive or liberal regulation package will be proposed when triggers suggest such. If the triggers do not suggest moving towards a liberal or restrictive season type the default will be the standard regulation package.

A third major revision, which has functionally been in place for many years, is to encourage adjustment of hunting regulations in individual HDs based upon regulations in surrounding districts. In some cases, metrics measured in trend areas in adjacent HDs might indicate different regulation packages. This could result in one HD being placed in one regulation package while the rest of the Region or a larger geographic unit is in another regulation package. A multitude of different hunting regulations in adjacent HDs can lead to hunter confusion and it often makes sense to include the outlier HD in the same regulation package as most the HDs in the larger geographic area.

The fourth key change is formally removing modeling mule deer population dynamics from AHM. The intent of the modeling component was to develop models that could predict, with reasonable certainty, future trends in population numbers. However, since 2001, FWP biologists have had little success in modeling mule deer populations in a reliable and predictive sense. Therefore, the modeling component of AHM has been moved to a research and development function, rather than being integrated into the management program. If useful models are developed in the future, they may be integrated into the management program.

Lastly, and since 2001, CWD has been detected over large geographic areas within Montana. Given the significant influence this disease will have at small- or large-scale levels on deer populations, management of the disease may ultimately take precedence over guidelines outlined within this document. The section in this document dedicated to CWD management outlines in broad fashion the most up to date information related to CWD and how it may generally affect future mule deer management in Montana.

INTRODUCTION

Montana's mule deer management goal:

> ***Manage for the long-term welfare of Montana's mule deer resource and provide recreational opportunities that reflect the dynamic nature of deer populations.***

This goal provides direction in development of mule deer management objectives and regulatory alternatives. Management decisions will be based on the welfare of the mule deer resource first, and recreational opportunities will be provided consistent with the dynamic nature of mule deer populations. In accordance with this goal, Montana's mule deer management program integrates the following elements:

1) Habitat Protection and Enhancement
2) Population Surveys
3) Harvest Management
4) Access Management
5) Research
6) Information & Education
7) Enforcement of Hunting Regulations
8) Minimization of Game Damage Complaints from Private Landowners
9) Hunter and Public Preferences and Attitudes

Habitat is key to any wildlife management program and FWP spends a considerable amount of time and money directed at conserving and managing habitat. Habitat Montana (HB 526) was created by the 1987 legislature (ARM 12.9.508–12.9.512) and has statutes with specific requirements for land acquisitions and conservation easement processes. Through this program, just under one million acres of important habitat for Montana wildlife including deer have been conserved (Montana Fish, Wildlife & Parks 2021). In addition, FWP enrolled over 300,000 acres of private lands into wildlife conservation leases. These figures do not include additional habitat conservation using only federal funds or land which was donated. In addition, FWP wildlife biologists provide wildlife-related technical input and assistance to private landowners and public land managers concerning habitat improvement projects, timber sales, grazing systems, fuels projects (prescribed fire), energy development and subdivision planning. Access management, research, regulation enforcement, public preferences, and all the other elements of Montana's mule deer management program are very important components of the overall program; however, this document focuses primarily on correlations between population surveys and harvest management in development of hunting season regulation packages.

Adaptive Harvest Management

In 1998 the Commission adopted a Deer Management Policy (Montana Fish, Wildlife & Parks Commission 1998) as the basis for establishing deer hunting regulations including season frameworks and license quotas. This policy provided direction for developing deer population objectives and hunting regulations used in the 2001 AHM document. The Commission has full authority under MCA 87-1-301 to determine the final hunting regulations and quotas established each year.

With the adoption of the AHM document in 2001, FWP incorporated AHM concepts into the monitoring of mule deer populations and setting hunting regulations. At the time, FWP considered the AHM document to be dynamic and stated, “One of the benefits of Adaptive Harvest Management is learning as you go.” As information is gathered through the monitoring programs, there may be a need to adjust population parameters, monitoring locations and guidelines. In addition, adjustments or modifications in the suite of hunting regulations may be necessary as we learn more about the results of various harvest rates.

Although, AHM has not “formally” changed since 2001, biologists and game managers across the state have learned more about what works and what doesn’t work when it comes to implementing aspects of AHM and “informal” changes have evolved. This revision updates the AHM document and incorporates some of the “informal” changes that have been made over the past 20 years. It describes how FWP proposes to define mule deer population objectives, monitor population status, and recommend hunting regulations to the Commission from this point forward. This revision is intended to replace the 2001 AHM plan and the harvest management portions of the 1998 Deer Management Policy adopted by the Commission.

This version of the AHM document consists of 3 major components in the Adaptive Harvest Management system:

1) Population objectives
2) Monitoring program
3) Hunting regulation alternatives

First and foremost is establishing population objectives based on measurable criteria that can be monitored with a strong monitoring program, the second component. The third component is to select hunting regulation alternatives that can be implemented when the monitoring program detects a significant change in the population status.

As in 2001, FWP will continue to define mule deer population objectives for groups of HDs known as Population Management Units (PMUs). Hunting Districts within a PMU all share similar habitat and mule deer population dynamics and are logically grouped together. There are five PMUs within the state (Figure 1) with each having unique population indicators and metrics and a corresponding monitoring program.

Long-term research projects in Montana have described the dynamics of mule deer populations in open, complex ecological systems. These studies were conducted at several locations across the diverse spectrum of environments occupied by both mule deer and white-tailed deer. The basis for delineating PMUs was formed by these studies, along with observations and analyses by regional management biologists.

The parameters of vital importance to managing mule deer populations are trends in population size, fawn recruitment, natural mortality of fawns and adults, hunter harvest rates, and age structure. The degree of fluctuation in these parameters varies among the five PMUs. These parameters, which determine population status, will be monitored within representative trend areas (see Mule Deer Monitoring Guidelines, page 53) and thus help to define the population objectives for each PMU.

Post hunting season or spring season trend survey areas will include buck:doe:fawn (post hunting season) or fawn:adult (spring season) ratios and total count data. Additional information used to monitor bucks may include age, number of antler points, antler size of bucks examined

at hunter check stations, and harvest statistics. Evaluation of harvest information and population parameters for each monitoring location will be conducted annually. Given the difficulty in obtaining appropriate mule deer demographic data through traditional methods in some areas, alternative survey techniques may be employed as they are developed. It is not feasible to conduct aerial surveys of mule deer populations in every HD. However, the aerial trend areas are representative of nearly all environments occupied by mule deer statewide. As necessary, HDs that are not surveyed may be grouped with the nearest HD, occupying a similar representative environment (not including special management HDs), that has a trend area for additional mule deer demographic comparison(s).

We have learned since 2001 that total counts on some trend areas vary widely because of factors unrelated to population size (e.g., migratory mule deer that may or may not be on the trend area at the time of survey). Therefore, trends in total counts on some trend areas are unreliable indices of population size and those trend areas are either no longer surveyed or are used to gather classification data only. In those cases, buck harvest data may be a more reliable index of population size and may be used in conjunction with classification data from trend surveys to recommend hunting regulations.

Fish, Wildlife & Parks will recommend hunting regulations to the Fish and Wildlife Commission biennially based upon the status of populations in relation to the established objectives (Table 1). Recommended hunting regulations may also reflect the desired harvest rate and the preferences and concerns of sportspersons and landowners. Comments from bio-economic, hunter attitude, and preference surveys, as well as input from sportspersons and landowners during season setting meetings, are used to measure these preferences and concerns. Because so many factors can influence hunting regulations, this document is intended to provide significant general guidance rather than a finite number of literal prescriptions.

Regulation packages (standard, restrictive, and liberal) are also identified for each PMU, and will guide FWP hunting season recommendations to the Fish and Wildlife Commission (Table 2). Objectives and hunting regulations listed for each PMU are largely determined by characteristics of the population and the potential for hunter harvest. The purpose of each hunting season type is briefly described for each regulation. A specific hunting season type may be liberal in one area and considered restrictive or standard in another. This results from the different mule deer population characteristics associated with the environment of the area, the security provided by the terrain and vegetation, land designations (adjacent preserves, wilderness, etc.), and access. Each regulation includes a description of the general rifle season, availability of antlerless B licenses, and a description of the archery only season.

Most HDs have regulations designed to provide maximum hunting opportunity and harvest of mule deer consistent with the long-term welfare of the mule deer resource. Maximum opportunity is a standard five-week general rifle season for either-sex or antlered bucks ending the Sunday after Thanksgiving. Where buck:doe ratios are measurable and below objective, a five-week general rifle season combined with unlimited or limited permits for bucks may be preferred. Other season types, outside of AHM, where already in place, may be continued or implemented where special circumstances make alternative season types viable. We have learned that at times, regulations suggested by the triggers have not had the desired effect on a specific mule deer population. In cases where populations do not move from a restrictive or liberal season package after 5 years, (third season setting cycle) with the same regulation in place, the local biologist and/or wildlife manager may recommend season types other than those in the restrictive, standard, and liberal packages described in this document. In such instances, developing scientific methods (e.g., hypothesizing the problem(s), experimental

testing, analysis, results, conclusions, etc.) to gain a better understanding of the issue(s) is recommended. By this nature, the local and perhaps statewide knowledge base of mule deer management will be further improved thereby extending the value of an adaptive management approach.

Special Management Districts (SMDs) provide opportunity for a limited number of people to potentially harvest an older aged buck where public access is good. Population indicators and regulations specific to each of those HDs were established. In 2001, 16 of the 159 HDs (10%) were designated as SMDs managed with restrictive hunting regulations designed to significantly limit antlered buck harvest. A detailed description of the criteria used to select those districts and the rationale for this approach is included within this document (see Mule Deer Special Management Districts, page 36).

Since 2001 some HDs, not designated as SMDs, have shifted to more restrictive regulations as per AHM guidelines or for other reasons. Most of those HDs have generally had less than 10 bucks per 100 does which triggered a more restrictive season. Restrictive season types described as exceptions under each PMU may include limited permits, shortened season length, or unlimited permits. Any hunter that applies for an unlimited permit is issued one, but the hunter cannot hunt antlered buck mule deer in any other HD and thus foregoes some hunting opportunity. Not everyone is willing to forego that opportunity, and therefore, the number of hunters who can take an antlered buck in an unlimited permit HD theoretically is less than if the HD allowed harvest of antlered buck on a general deer license. Further discussion related to the effects of limited buck season types is summarized in the SMD section.

When possible, trend area data will be used to determine a population's status, or data from several trend areas might be combined to make decisions on a multi-HD, Regional or PMU scale. These data, along with other information from check stations, harvest statistics, and input from sportspersons and landowners, will determine which hunting regulations are recommended. If survey conditions lead to uncertainty in the survey trend data, or if survey trend data is unavailable, buck harvest data or other information in lieu of trend area data may be used to recommend a season type. The prescribed standard, liberal, and restrictive types are recommendations only, as the Commission has the full authority to set seasons and quotas which may differ from these recommendations.

Weather and timing of aerial surveys can dramatically affect their usefulness in assessing population status. Interpretation of survey information will thus remain an integral step in the monitoring process. To ensure consistency in data collection, guidelines for population monitoring were established in 2001 and have been slightly modified in this document (See Mule Deer Monitoring Guidelines, page 53). In recent years, emerging methodologies show promise for improving population monitoring in areas characterized by dense forest canopy and low-density mule deer populations. As these methodologies develop, FWP may re-evaluate existing monitoring strategies and AHM population triggers within PMUs where aerial surveys are not feasible.

Additional considerations beyond the established population monitoring metrics must be considered when prescribing hunting regulations. Hunter access and habitat security are important in harvest management. Weather during the hunting season can significantly influence hunter success, for better or worse. Conservative hunting seasons are generally, but not always, associated with areas that have ample public access and low habitat security, although some back-country exceptions have been made. Changes in any of these metrics may necessitate modifying hunting seasons and/or objectives.

Lastly, population status may change significantly in a short time because of the dynamic nature of mule deer populations. To respond appropriately, it may be necessary to go from a restrictive regulation to a liberal one, or vice versa, rather than progressing through a standard regulation. Population indicators and public input will dictate the optimum regulation.

The remainder of this document defines PMUs, population indicators, and hunting regulations to be recommended based on population status. As previously stated, AHM is only part, albeit an important part, of Montana's mule deer management program. This program is continually being developed and modified by FWP with the assistance and cooperation of hunters, private landowners, public land managers, and other interested members of the public.

Statewide Hunting Season Opportunities

The following hunting season types are recognized as legal seasons and applied on a statewide level, although are not formally included in AHM given their specific focus. Such seasons are generally considered to have minimal impact from a management perspective but are recognized in various capacities related to AHM. Nonetheless, it is important to continue to track their application and/or impact locally, regionally and/or on a statewide level.

Game Damage

Localized game damage complaints will be addressed using the game damage policy and associated hunt options. As described in Appendix I, by law, FWP is required to respond to all big game damage complaints. General hunting seasons are the primary tool to manage animals (through harvest) causing or having the potential to cause game damage. Landowners who allow public hunting and do not impose restrictions that significantly reduce public hunting qualify for game damage assistance. For further information regarding the game damage policy, see Appendix I.

Two-day Youth Deer Hunting Season

A two-day youth hunt for deer was established by the Montana Legislature in 2011. The dates of the youth deer hunting season occur prior to the opening of the general rifle season, and coincide with Montana's annual two-day teachers' convention, during which there is no school for most public-school students. The two-day youth hunt is open to 1) legally licensed 12-15 year old hunters who have completed hunter education and who are accompanied by a non-hunting adult at least 18 years of age OR 2) properly certified and legally licensed apprentice hunters 10-15 years of age who are accompanied by a non-hunting adult "mentor" at least 21 years of age. This hunt is for deer only and general rifle hunting season regulations apply.

Muzzleloader Season

A special muzzleloader heritage hunting season was established by the Montana Legislature in 2021. The hunting season begins on the second Saturday after the end of the regular season and lasts 9 days. During this season, a person may take a deer or elk with a valid license or permit using a muzzleloading rifle. For further information about this hunting season option, including definitions related to muzzleloaders, refer to provisions outlined in MCA and the Montana Fish and Wildlife commission rule.

Table 1. Indicators of mule deer population status and corresponding regulation categories.

PMU Northwest Montane	Recruitment Fawns:100 adults	Total Mule Deer Counted on Survey Area	Buck Harvest*
Standard	Not Available	Within 25% LTA	Within 25% LTA
Restrictive	Not Available	≥ 25% below the LTA	≥ 25% below LTA
Liberal	Not Available	> 25% above the LTA	> 25% above LTA
Mountain Foothill			
Standard	20-45 fawns:100 adults	Within 25% LTA	Within 25% LTA
Restrictive	< 20 fawns:100 adults	≥ 25% below LTA	≥ 25% below LTA
Liberal	> 45 fawns:100 adults	> 25% above LTA	> 25% above LTA
Prairie/Mountain Foothill			
Standard	30-45 fawns: 100 adults	Within 25% LTA	Within 25% LTA
Restrictive	< 30 fawns:100 adults	≥ 25% below LTA	≥ 25% below LTA
Liberal	> 45 fawns:100 adults	> 25% above LTA	> 25% above LTA
Southern Mountains			
Standard	30-45 fawns:100 adults	Within 30% LTA	Within 25% LTA
Restrictive	< 30 fawns:100 adults	≥ 30% below LTA	≥ 25% below LTA
Liberal	> 45 fawns:100 adults	> 30% above LTA	> 25% above LTA
Prairie/Breaks			
Standard	30-60 fawns:100 adults	Between 30% below and 20% above LTA	Within 25% LTA
Restrictive	< 30 fawns:100 adults	≥ 30% below LTA	≥ 25% below LTA
Liberal	> 60 fawns:100 adults	> 20% above LTA	> 25% above LTA
*** Buck harvest is used in the absence of long-term survey data**			

Table 2. Mule deer hunting regulations for each of five population management units. See individual PMU hunting season sections for exceptions.

PMU	Standard	Restrictive	Liberal
Northwest Montane	5-week general rifle season for antlered bucks. Low to moderate numbers of antlerless B licenses (no more than 50% of the liberal package). 6-week archery-only season for antlered bucks.	5-week general rifle season for antlered bucks. Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs. 6-week archery-only season for antlered bucks.	5-week general rifle season with the first week either -sex and the last four weeks antlered bucks only. Low-Moderate numbers of antlerless B licenses may be issued to provide additional hunting opportunity. 6-week either-sex archery-only season.
Mountain Foothill	5-week general rifle season for antlered bucks OR zero to five weeks for either-sex during rifle season. Low to moderate numbers of antlerless B licenses (no more than 50% of the liberal package). 6-week archery-only season for either-sex.	5-week general rifle season for antlered bucks. Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs. 6-week archery-only season for either-sex.	5-week general rifle season for either-sex. Liberal numbers of antlerless B licenses with option for issuing multiple licenses either through the drawing or over the counter. 6-week archery-only season for either-sex.
Prairie Mountain Foothill	5-week general rifle season for either-sex. Zero to moderate numbers of antlerless B licenses (no more than 50% of the liberal package). 6-week archery-only season for either-sex.	5-week general rifle season for antlered bucks. Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs. 6-week archery-only season for antlered bucks.	5-week general rifle season for either-sex. Liberal numbers of antlerless B licenses with option for issuing multiple licenses either through the drawing or over the counter. 6-week archery-only season for either-sex.
Southern Mountains	5-week general rifle season for antlered bucks. Zero to moderate numbers of antlerless B licenses (no more than 50% of the liberal package). 6-week archery-only season for antlered bucks.	5-week general rifle season for antlered bucks. Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs 6-week archery-only season for antlered bucks	5-week general rifle season with first nine days either-sex, last four weeks antlered bucks. Moderate to liberal number of antlerless B licenses by HD. 6-week archery-only season for either-sex.
Prairie/Breaks	5-week general rifle season for either-sex. Low to moderate numbers of antlerless B licenses. 6-week archery-only season for either-sex.	5-week general rifle season for antlered bucks. Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs. 6-week archery-only season for antlered bucks.	5-week general rifle season for either-sex. Liberal numbers of antlerless B licenses with option for issuing multiple licenses either through the drawing or over the counter. 6-week archery-only season for either-sex.

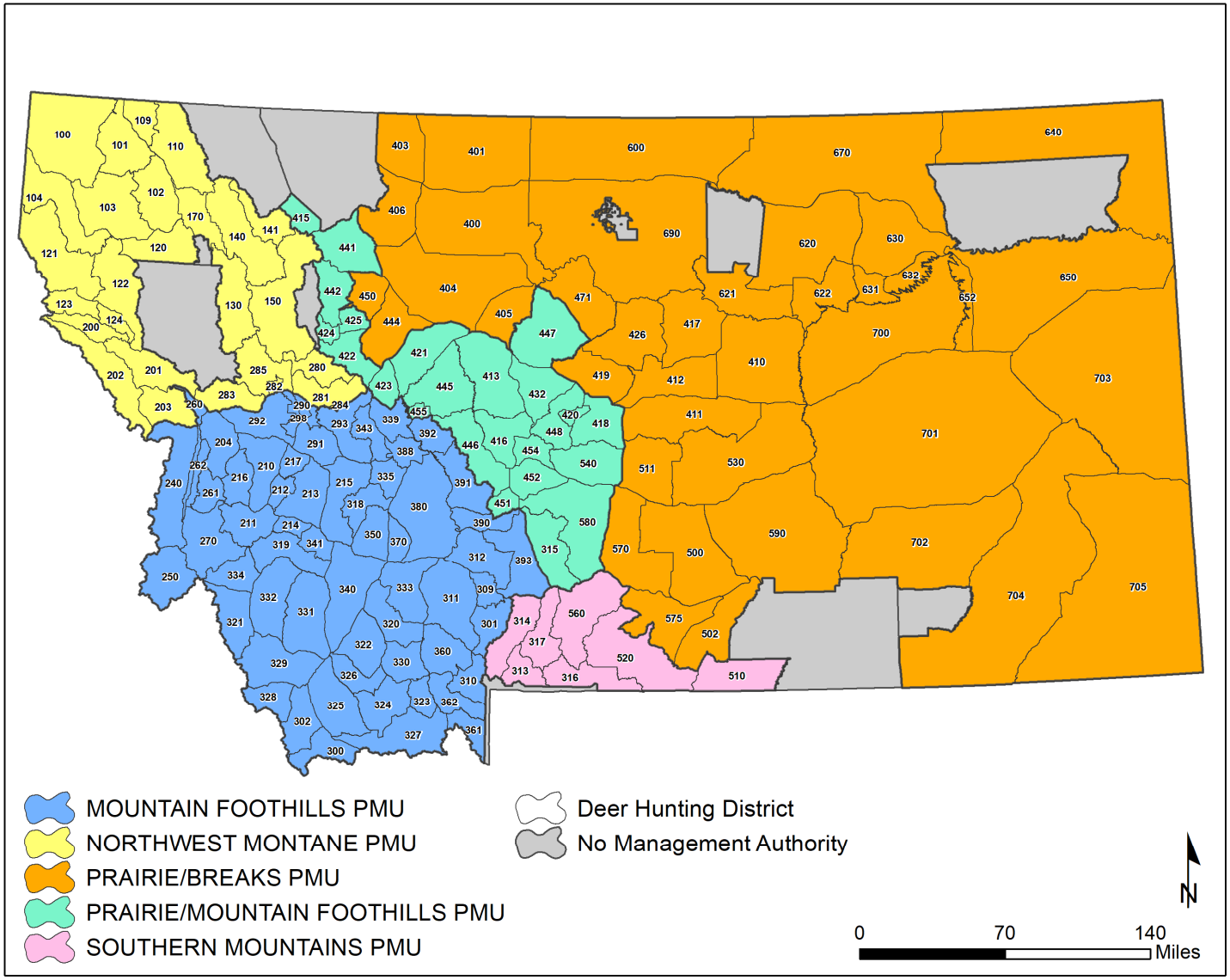


Figure 1. Five mule deer population management units based on broad habitat similarities.

MULE DEER POPULATION MANAGEMENT UNITS:
HARVEST REGULATION PACKAGES AND MONITORING TRIGGERS

NORTHWEST MONTANE POPULATION MANAGEMENT UNIT

OBJECTIVE: Maintain the population within 25% of the long-term average as measured by the total number of bucks harvested (in HDs with unrestricted buck hunting on the general deer license) or the total number of mule deer observed during trend survey efforts.

Hunting Districts: 100, 101, 102, 103, 104, 109, 110, 120, 121, 122, 123, 124, 130, 140, 141, 150, 170, 200, 201, 202, 203, 280, 281, 282, 283, 284, and 285. HD 202 is an SMD. There are currently five survey trend areas in this PMU (Figure 2, Table 1).

This PMU is 14,668 square miles and includes all of Region 1 and the northern tier of HDs in Region 2 (Figure 2). Topography varies from rugged, mountainous terrain along the Continental Divide, including the Flathead, Swan, and Mission ranges to more gentle, smaller ranges such as the Salish Mountains and Nine Mile Divide. Elevations as low as 2,000 feet occur in the northwestern portion of the unit near Troy to over 9,000 feet in the highest peaks of the Mission Mountains. Climate is strongly influenced by the maritime effect of moisture-laden air from the Pacific Ocean. Precipitation generally decreases from west to east with average annual precipitation at most valley locations varying between 20 and 32 inches, more than half falling as snow during winter.

Vegetation is characterized by the greatest continuous cover of coniferous forest of any PMU in the state. Overstory species that occur at lower elevations include ponderosa pine (*Pinus ponderosa*), Douglas fir (*Pseudotsuga menziesii*), and western larch (Larix occidentalis). At higher elevations, dominant species include lodgepole pine (*Pinus contorta*), Engelmann spruce (*Picea engelmannii*), and subalpine fir (*Abies lasiocarpa*). Relic stands of western red cedar (*Thuja plicata*), grand fir (*Abies grandis*), western white pine (*Pinus monticola*), and western hemlock (*Tsuga heterophylla*) are confined to moist microsites. During the summer, mule deer diet consists primarily of shrub and forb species including strawberry (*Fragaria spp.),* snowbrush *(Ceanothus spp.),* raspberry (*Rubus spp.*) and wild rose (*Rosa spp.).* During the winter, conifers, especially Douglas fir, make up a significant proportion the diet, in addition to shrub species including snowbrush, and Oregon grape (*Mahonia spp.*; DeCesare et al. 2020).

Timber-related industries, tourism, mining, outdoor recreation, and agriculture are important land uses. While public land accounts for nearly 75% of this PMU, large parcels of corporately owned timber land also provide important mule deer habitat. Since 2001, the demand for residential development has increased dramatically, resulting in increased subdivision of agricultural lands and the sale and development of some large parcels of corporate timber land.

Forest succession is an important factor influencing mule deer populations within this PMU, and mule deer rely on a variety of successional stages throughout the year to provide forage, security, and winter refuge. Early successional habitats during the spring and summer are especially important because they provide greater amounts of nutritious forage relative to more mature stands (Hayden et al. 2008, Kayes et al. 2010). Relative to the rest of the state, mule deer within the PMU have access to few snow-free wintering areas. To minimize the energetic costs associated with heavy snow accumulations mule deer rely on topographic variation and

mature conifer stands capable of intercepting snowfall.

During the early 20th century, mule deer populations apparently responded favorably to an increase in early successional forage produced through unregulated timber harvest, aggressive predator removal, and large-scale forest fires. Mule deer continued to fluctuate at relatively high abundance through the 1980s, during which time commercial timber harvest peaked within the PMU. Concurrently, elk and whitetail deer populations were increasing in portions of the PMU where few, if any, existed historically.

Large carnivore populations (e.g. grey wolf, mountain lion, grizzly bear) also began to increase as the result of harvest regulation and active restoration. Changes in habitat due to forest succession, development and fire suppression have impacted mule deer numbers in this PMU. The influence of predators on mule deer populations varies as a function of a population's abundance relative to the carrying capacity of the habitat, alternative prey and the abundance and distribution of predator species. Populations are below levels reported in the 1980s and early 1990s and changes in hunting regulations alone will not result in significant increases in population trend.

Improving mule deer monitoring is a priority within this PMU. Since implementation of the 2001 mule deer AHM, obtaining survey information has been difficult as dense forests preclude efficient aerial surveys throughout most of the PMU. Currently there are five trend areas in this PMU (Figure 2, Table 3) that provide important population trend and recruitment information for some of the more robust mule deer populations within the PMU. However, habitat conditions that facilitate aerial surveying in these areas also limit the ability to make broader inferences to more densely forested or mountainous HDs. While trend areas will continue to be flown according to established protocols (page 56), changes to existing boundaries or flight frequency may be considered to improve the inference capabilities of these data.

Population status information is mostly limited to trends in harvest gathered from the statewide harvest survey. Check stations provide additional information, though the number of collected samples is typically too small (< 100) to make inferences at the HD level. Emerging methodologies for monitoring populations in forested systems (e.g., remote camera-based surveys) could potentially improve mule deer population monitoring within the Northwest Montane PMU. As these methodologies develop managers should consider alternative monitoring strategies within the PMU.

Relative to other PMUs, harvest trends indicate that mule deer abundance within the PMU does not fluctuate dramatically in response to short-term variation in environmental conditions and is strongly influenced by large-scale changes in habitat. The advancement of forest succession throughout much of the PMU, and relatively low mule deer abundance predicates a conservative harvest strategy to avoid potential additive impacts of doe harvest and facilitate population stability or recovery. However, it is unlikely that harvest manipulation alone will result in an increase in population trend.

The following regulation packages are designed to maintain populations within 25% of the LTA, as determined through the total number of bucks harvested and/or the total number of mule deer observed during trend survey efforts. When applicable, trend area data may be used to help determine a population's status, or data from several trend areas might be combined to make decisions on a multi-HD, Regional or PMU scale. These data, along with other information

from check stations, harvest statistics, and input from sportspersons and landowners, will determine which hunting regulations are recommended.

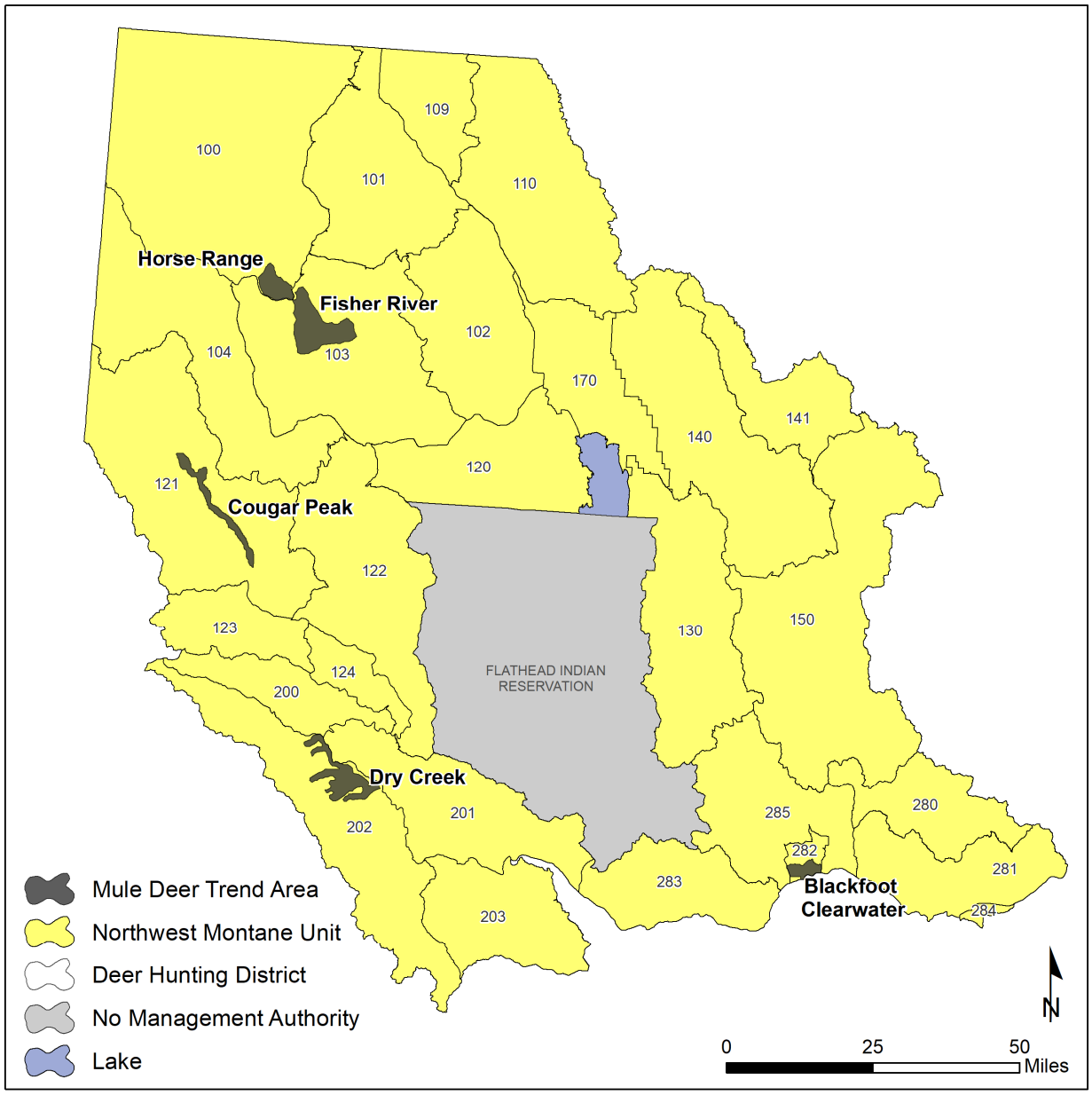


Figure 2. Northwest Montane Population Management Unit showing hunting district boundaries and mule deer trend areas.

Table 3. Post-season and/or spring flight frequency on trend areas in the Northwest Montane Population Management Unit. X's indicate trend survey flights completed during that period and crossed out sections indicate no trend survey flights normally completed during that period.

	Postseason Flight	Spring Flight
Region 1 Trend Areas		
Cougar Peak		X
Fisher River		X
Horse Range		X
Region 2 Trend Areas		
Dry Creek	X	X
Blackfoot Clearwater	X	

Standard Hunting Regulation

The Standard Hunting Regulation may be implemented when the population is within 25% of the LTA as measured through either the total number of bucks harvested, and/or the total number of mule deer observed on trend survey efforts. Minimal antlerless harvest is recommended to maintain population stability or facilitate population recovery.

A Standard Hunting Regulation may be recommended if population triggers do not suggest changing to a restrictive or liberal season type.

Hunting Season (See Exceptions):

- Five-week general rifle season for antlered bucks.
- Low numbers of antlerless B licenses (no more than 50% of the liberal package)
- Six-week archery-only season for antlered bucks.

Restrictive Hunting Regulation

The Restrictive Hunting Regulation may be implemented when the population is >25% below the LTA, as measured through either the total number of bucks harvested and/or the total number of mule deer observed on trend survey efforts. No antlerless harvest is recommended to facilitate population recovery; however, localized game damage may necessitate minimal, focused antlerless harvest.

Hunting Season (See Exceptions):

- Five-week general rifle season for antlered bucks.
- Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs.
- Six-week archery-only season for antlered bucks.

Liberal Hunting Regulation

The Liberal Hunting regulation may be implemented when the population is > 25% above the

LTA, as measured through either the total number of bucks harvested and/or the total number of mule deer observed on trend survey efforts, for at least 5 years. Minimal antlerless harvest is recommended; a short either-sex season and antlerless B licenses provide additional hunting opportunity commensurate with an increasing mule deer population.

Hunting Season (See Exceptions):

- Five-week general rifle season with the first week either-sex and the last four weeks antlered bucks only.
- Low-Moderate numbers of antlerless B licenses.
- Six-week archery only season for either-sex.

Exceptions

HD 103 (North Fisher portion):

- Five-week general rifle season for antlered bucks by limited permit quota.
- Antlerless B licenses may be issued as needed.
- Six-week archery only season by limited permit quota.

HD 109:

- Three-week rifle season for antlered bucks with general deer license followed by two-week rifle season for antlered bucks by limited permit quota.
- Antlerless B licenses may be issued as needed.

HD 130 (Mission Mountains Wilderness portion):

- Rifle season from September 15 through the general rifle season for antlered bucks by limited permit quota.
- Antlerless B licenses may be issued as needed.
- Archery only season for antlered bucks by limited permit quota ends September 14.

HDs 150 & 280:

- Rifle season from September 15 through the general rifle season for antlered bucks with a general deer license.
- Antlerless B licenses may be issued as needed.
- Archery only season for antlered bucks with a general deer license ends September 14.

HD 281:

- Five-week rifle season for antlered bucks with an unlimited permit
- Six-week archery only season for antlered bucks with an unlimited permit

HD 282:

- One-week rifle season (prior to the general rifle season) for antlered mule deer with a general deer license for hunters who hold a 282-00 deer B license.
- Rifle season for antlered mule deer with a general deer license beginning with general rifle season and ending on November 10 for hunters who hold a 282-00 elk B license or 282-10 elk permit.
- Archery only season for antlered bucks with a general deer license beginning with the six-week archery only season and ending two days before the end of the six-week archery only season.

MOUNTAIN FOOTHILL POPULATION MANAGEMENT UNIT

OBJECTIVE: Maintain the total number of mule deer observed on trend areas within 25% of the long-term average.

Hunting Districts: 204, 210, 211, 212, 213, 214, 215, 216, 217 240, 250, 260, 261, 262, 270, 290, 291, 292, 293, 298, 300, 301, 302, 309, 310, 311, 312, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 339, 340, 341, 343, 350, 360, 361, 362, 370, 380, 388, 390, 391, 392, & 393 (Figure 3). HDs 210, 261, 270, 291, 300, 312 (east portion), and 324 are SMDs. The SMD designation in HDs 320 and 333 were eliminated in 2016. There are currently 21 survey trend areas in this PMU (Figure 3, Table 4).

This PMU is 24,167 square miles of southwestern Montana including high to moderate elevation mountain ranges (e.g., Elkhorn, Bridger, west slope of the Big Belts, Tendoy, Bitterroot, Sapphire, and Garnet Mountains) generally isolated from other ranges by large valleys. Topography varies from gently undulating foothills to rugged mountainous terrain with elevations ranging from 4,000–11,000 feet. Topography and elevation cause variation in local climate and weather conditions across this PMU. Most mountain ranges are oriented along a north-south trending axis. More persistent snow cover and a more restricted distribution of winter range generally characterize westerly aspects. Easterly aspects occur in drier rain shadow zones and provide more extensive areas of winter habitat.

Vegetation in the foothills includes a variety of shrub species including big sage (*Artemisia tridentata),* bitterbrush (*Purshia tridentata*), mountain mahogany (*Cercocarpus ledifolius*), and juniper (*Juniperus* spp.) interspersed among bunch-grass communities dominated by bluebunch wheatgrass (*Pseudoroegneria spicata*), and Idaho fescue (Festuca idahoensis). Riparian areas support cottonwood (*Populus* spp.), aspen (*Populus tremuloides*), willow (*Salix* spp.), and hawthorn (*Crataegus* spp.). Conifer forests of Douglas fir, ponderosa pine, lodgepole pine, subalpine fir, and whitebark pine (*Pinus albicaulis*) become prevalent with increasing elevation. Subalpine and alpine vegetation is restricted to elevations above about 8,500 feet.

Cattle grazing and both dryland and irrigated crops are primary uses of private land. In some HDs, private agricultural lands comprise a large portion of the HD. Timber management, livestock grazing, and recreation are major uses of public land.

Mule deer may be migratory or resident within the PMU resulting in habitat use that is seasonal or potentially yearlong. Mule deer in the native habitats of mountain foothills may contend with energy deficits in winter that are generally longer than experienced in other PMUs. However, mule deer associated with private agricultural lands, particularly irrigated alfalfa fields in the PMU, may exist on a much higher plain of nutrition throughout the year.

Fawn recruitment currently averages about 30 fawns:100 adults on winter ranges with severe environments and 40 fawns:100 adults on milder sites. Fawn recruitment has declined across the PMU in more recent times due to competition with elk for resources, historic levels of over browsing, conifer expansion into important habitat and changing land use patterns. Following drought and severe winters, recruitment can reach lows of 5–20 fawns:100 adults while natural mortality of does can vary between 15–25%. Under these conditions, there is minimal opportunity for antlerless harvest. During periods of general population stability compared to LTA, natural losses of does will normally vary between 2–14%. Stabilizing the population will require a doe harvest rate of 1–15%. During periods of high recruitment (greater than 40 fawns:100 adults) and low natural mortality of does (1–3%), doe harvests of 12–20% will be

required to stabilize population increases. Post-season buck:doe ratios have fluctuated around 10:100 in a significant portion of this PMU because of plentiful hunter access to public lands and vulnerability of bucks late in the season.

There are 21 trend areas in the Mountain Foothill PMU (Figure 3; Table 4). Post-season and spring survey trend areas in the Lima Peaks and East Pioneers cover different, but nearby areas because mule deer move between the post-season and spring surveys (Figure 3).

In 2016 the Fish and Wildlife Commission adopted general antlerless regulations in HD 300 which is an SMD, and 329 which at the time was an unlimited buck permit district, and either-sex regulations in HD 302, 320, 322, 325, 326, 328, 330,331 and 333. The original AHM document (2001) did not contemplate applying antlerless harvest on the general deer license, while this updated version provides new prescriptions allowing it. Mule deer harvest and population responses in these 11 HD's are monitored annually and rigorously compared with other harvest prescriptions in the Mountain Foothill PMU.

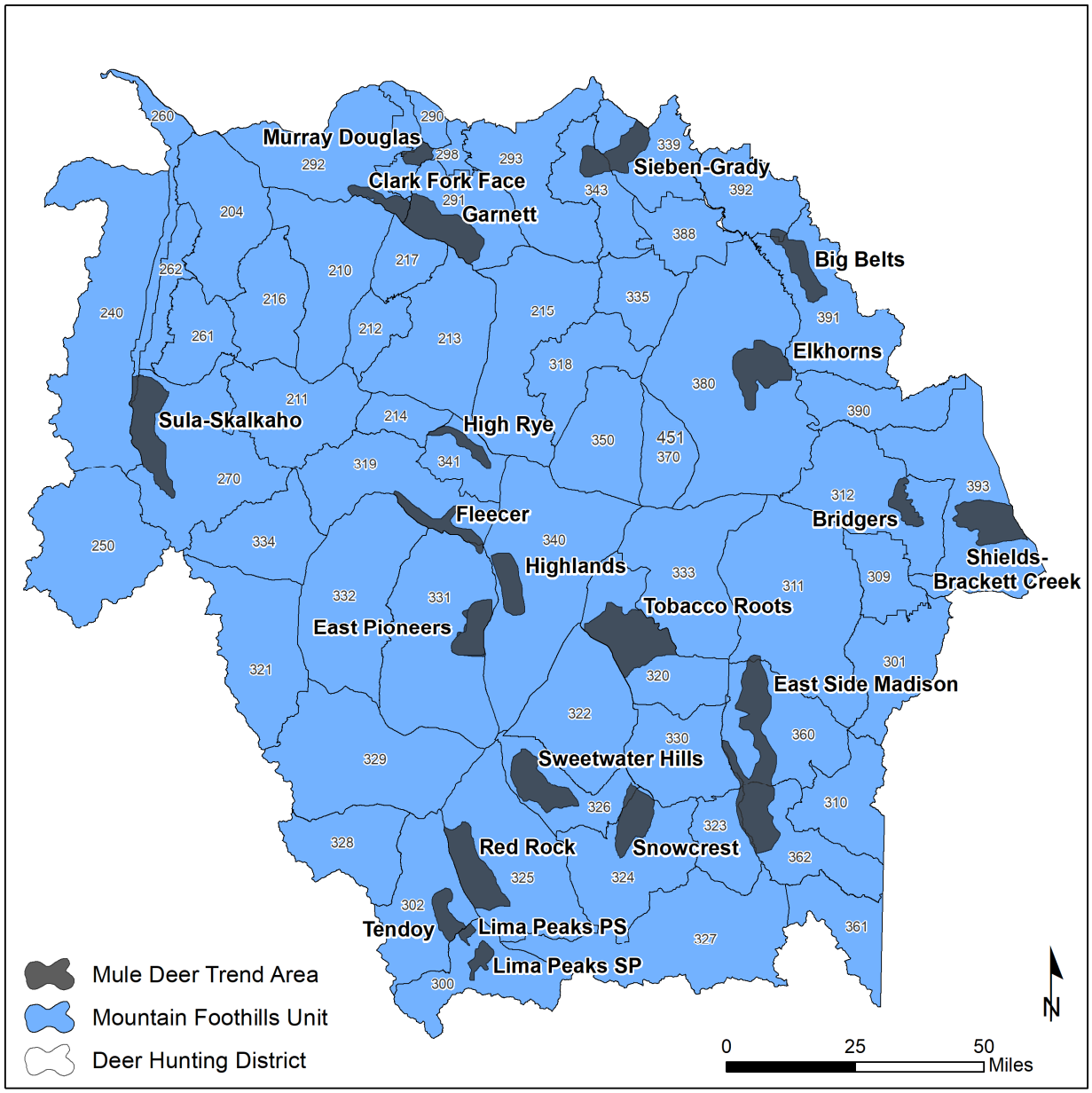


Figure 3. Mountain Foothill Population Management Unit showing hunting district boundaries and mule deer trend areas.

Table 4. Post-season and/or spring flight frequency on trend areas in the Mountain Foothill Population Management Unit. X's indicate trend survey flights completed during that period and crossed out sections indicate no trend survey flights normally completed during that period.

Trend Area	Postseason Flight	Spring Flight	Trend Area	Postseason Flight	Spring Flight
Region 2 Trend Areas			***Region 3 Trend Areas Cont'd***		
Clark Fork Face	X	X	Highlands	X	X
Sula-Skalkaho	X	X	Lima Peaks PS	X	
Murray-Douglas	X		Lima Peaks SP		X
Region 3 Trend Areas			Red Rock	X	X
Big Belts	X	X	Shields-Brackett Creek	X	X
Bridgers	X	X	Sieben-Grady	X	X
East Pioneers	X	X	Snowcrest	X	X
East Side Madison		X	Sweetwater Hills	X	X
Elkhorns	X	X	Tendoy	X	
Fleecer	X	X	Tobacco Roots	X	X
High Rye	X	X			

Standard Hunting Regulation

The Standard Hunting Regulation is implemented during years when the population size is at or near LTA and recruitment is moderate.

A Standard Hunting Regulation may be recommended if population triggers do not suggest changing to a restrictive or liberal season type.

Hunting Season (See Exceptions):

- Five-week general rifle season for antlered bucks OR one to five weeks for either-sex during rifle season.
- Low to moderate numbers of antlerless B licenses (no more than 50% of the liberal package).
- Six-week archery-only season for either-sex.

Restrictive Hunting Regulation

The Restrictive Hunting Regulation is used during periods of unfavorable environmental conditions when the population size is substantially below LTA and recruitment is low. Doe harvest rate will be reduced by limiting antlerless B licenses to localized game damage situations and implementing a general buck-only season. If a HD does not have an established trend survey area, adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by season type, adjacent, representative HD(s) with unlimited buck hunting on the general deer license may be used as another measure of population status.

A Restrictive Hunting Regulation may be recommended if both trigger 1 **AND** trigger 2 (a **OR** b) are met. If aerial surveys are not flown in a HD, recruitment data from nearby HDs where surveys are flown should be used to assess trigger 1.

1. Recruitment is less than 20 fawns:100 adults.

AND

2. a) Total number of mule deer counted on the survey area is at least 25% below the LTA**.**

OR

b) In the absence of long-term survey data: Buck harvest is at least 25% below the LTA. Adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by permits this trigger should be measured in adjacent HDs with unrestricted buck hunting on the general deer license.

Hunting Season (See Exceptions):

- Five-week general rifle season for antlered bucks.
- Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs.
- Six-week archery-only season for either-sex.

Liberal Hunting Regulation

The Liberal Hunting Regulation is used during periods of favorable environmental conditions when the population size is substantially above LTA and recruitment is high. Natural losses of adult does are negligible. Doe harvest rates should be higher in those areas where population reductions are necessary. If a HD does not have an established trend survey area, adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by season type, adjacent, representative HD(s) with unlimited buck hunting on the general deer license may be used as another measure of population status.

A Liberal Hunting Regulation may be recommended if both trigger 1 **AND** trigger 2 (a **OR** b) are met. If aerial surveys are not flown in a HD, recruitment data from nearby HDs where surveys are flown should be used to assess trigger 1.

1. Recruitment is greater than 45 fawns:100 adults.

AND

2. a) Total number of mule deer counted on the survey area is more than 25% above the LTA**.**

OR

b) In the absence of long-term survey data: Buck harvest is more than 25% above the LTA. Adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by permits this trigger should be measured in adjacent

HDs with unrestricted buck hunting on the general deer license.

Hunting Season (See Exceptions):

- Five-week general rifle season for either-sex.
- Liberal numbers of antlerless B licenses with option for issuing multiple licenses either through the drawing or over the counter. Licenses may be valid for an individual HD or group of HDs.
- Six-week archery-only season for either-sex.

Many factors, other than hunting can affect mule deer populations. If a liberal or restrictive season structure is in place for ≥5 years and the population has not moved towards the LTA and back to a standard season type, then a season type other than those suggested by the triggers could be considered.

Exceptions

HD 204:

- Three-week rifle season for antlered bucks with an unlimited permit

HD 240:

- Wilderness portion: Five-week general rifle season for antlered bucks by limited permit quota
- Outside wilderness portion: Three-week rifle season for antlered bucks with an unlimited permit

HDs 250 and 262:

- Five-week general rifle season for antlered bucks by limited permit quota

HDs 212, 213, 214, 215, 217, 292, 298, 319, 380 and 392:

- Five-week general rifle season for antlered bucks with an unlimited permit

PRAIRIE/MOUNTAIN FOOTHILL POPULATION MANAGEMENT UNIT

OBJECTIVE: Maintain the total number of mule deer observed on trend areas within 25% of the long-term average.

Hunting Districts 315, 413, 415, 416, 418, 420, 421, 422, 423, 424, 425, 432, 441, 442, 445, 446, 447, 448, 451, 452, 454, 455, 540, and 580. HDs 441 and 455 are SMDs. There are 10 survey trend areas in this PMU although Basin Creek and Grosfield trend areas are usually combined for data analysis (Figure 4, Table 5).

This PMU is 10,090 square miles of central Montana and includes the Rocky Mountain Front, east slope of the Big Belt Mountains, Little Belt, Judith, Castle, and Crazy Mountains (Figure 4). This PMU represents a transition zone having characteristics of both the mountain foothill and the prairie/breaks units. Topography varies from low rolling hills to steep, rugged mountain canyons. Elevations range from less than 4,000 feet to over 9,000 feet near the Continental Divide. Precipitation is highly variable ranging from 10–12 inches at lower more arid sites to upwards of 40 inches in the mountains.

Native habitat types and associated vegetation varies from shrub grassland, through montane forest with intermountain grassland, to alpine ridge tops. Native grasslands are dominated by western wheatgrass (*Elymus smithii*), thickspike wheatgrass (*Elymus lanceolatus*), slender wheatgrass (*Elymus trachycaulus*), bluebunch wheatgrass (*Elymus spicatus*), Idaho fescue (*Festuca idahoensis*), rough fescue (*Festuca campestris*), green needlegrass (*Stipa viridula*), and an extensive variety of forb species. Some of the more common shrub species found in intermountain grassland transition zone include buffaloberry (*Shepherdia* spp.), chokecherry (*Prunus virginiana*), snowberry (*Symphoricarpos* spp.), serviceberry (*Amelanchier alnifolia*), wild rose (*Rosa woodsii*), and mountain maple (*Acer glabrum*). Douglas fir, lodgepole pine, ponderosa pine and limber pine (*Pinus flexilis*) are the major tree species found within the PMU. Rocky Mountain juniper (*Juniperus scopulorum*), common juniper (*Juniperus communis*) and creeping juniper (*Juniperus horizontalis*) predominate mid-lower elevation areas. Cottonwood, willow spp., and aspen dominate riparian areas.

Landownership is a strong mix of both public and private lands both serving as year-round and seasonal range habitat for mule deer. Public lands are primarily United States Forest Service (USFS), Bureau of Land Management (BLM), Montana Department of Natural Resources and Conservation (DNRC) as well as some Wildlife Management Areas (WMAs) managed by FWP. Agriculture in this PMU is dominated by livestock grazing (primarily cattle) with croplands being irrigated or dry land alfalfa and small grain production. Land open and accessible to the public for hunting is variable.

A high percentage of this PMU supports mule deer during at least a portion of the year. Mule deer are found primarily in lower elevation foothills and riparian areas throughout the year, with emphasis during late fall through spring periods (winter range habitat). Higher elevation areas are inhabited by mule deer primarily during the summer period. Areas where mule deer have access to agricultural crops can support comparatively higher densities of deer. Some mule deer populations in this PMU have long, complex seasonal migrations. Harvest strategies should be designed in such a way as to ensure these migrations are maintained.

During favorable environmental conditions, fawn recruitment rates may be as high as that of the prairie (>50 fawns:100 adults). However, severe winter weather conditions and/or significant periods of drought can cause recruitment to decline to rates nearly as low as mountain foothill

populations (<30 fawns:100 adults). Hunting pressure is typically lower than the Mountain Foothill PMU due to restricted private land access. Therefore, hunting regulations can include more either-sex hunting opportunities than the Mountain Foothill PMU during population increases. Similar to the Mountain Foothill PMU, following drought and severe winters, recruitment can reach lows below 20 fawns:100 adults while natural mortality of does can vary between 15–25%. Under these conditions, there is minimal opportunity for antlerless harvest. During periods of high recruitment (greater than 40 fawns:100 adults) and low natural mortality of does (1–3%), doe harvests of 12–20% may be required to stabilize population increases. Post-season buck:doe ratios generally range from approximately 10 to 35 bucks:100 does.

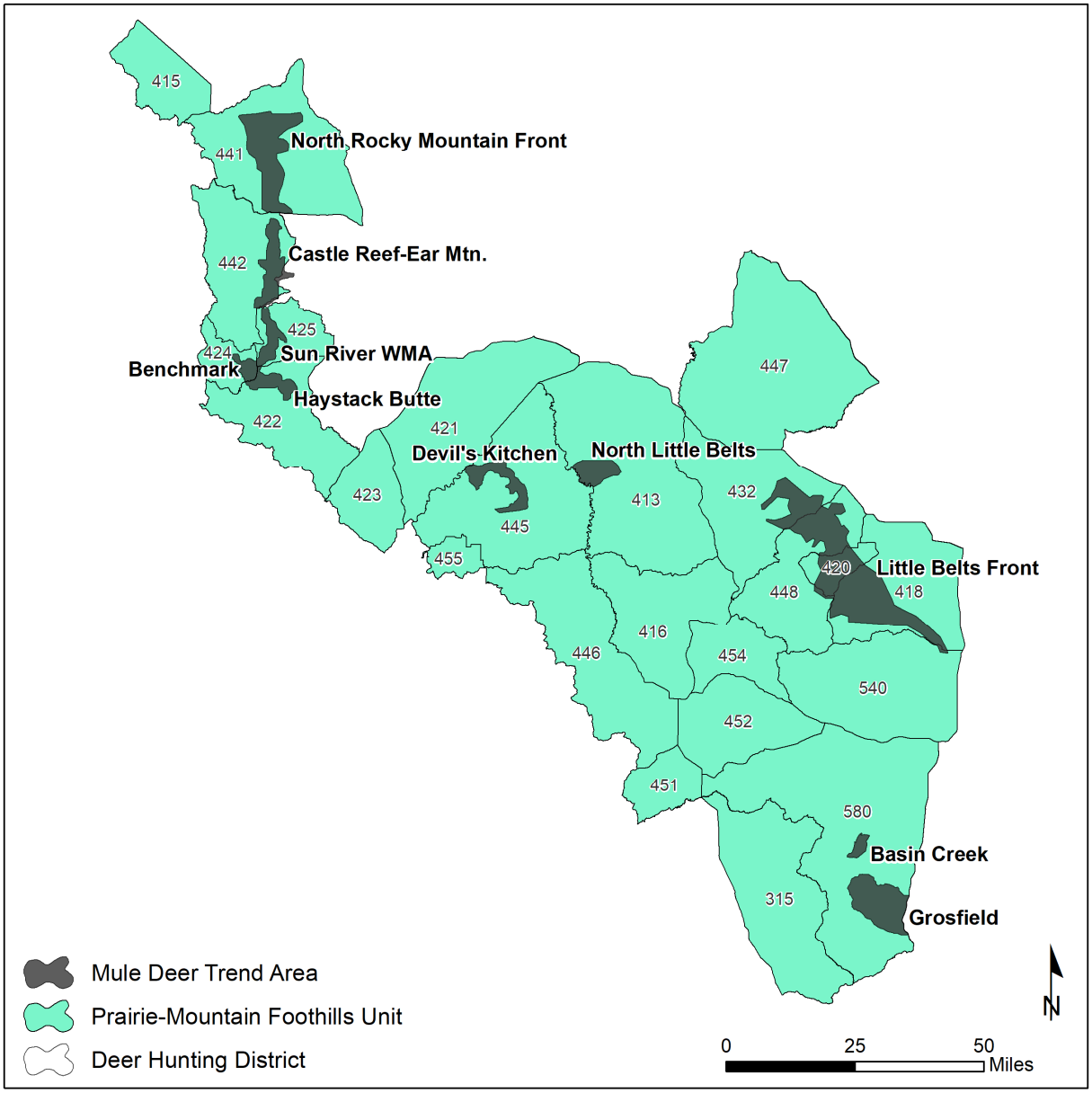


Figure 4. Prairie/Mountain Foothill Population Management Unit showing hunting district boundaries and mule deer trend areas.

Table 5. Post-season and/or spring flight frequency on trend areas in the Prairie/Mountain Foothill Population Management Unit. X's indicate trend survey flights completed during that period and crossed out sections indicate no trend survey flights normally completed during that period.

	Postseason Flight	Spring Flight
Region 4 Trend Areas		
Benchmark	X	X
Castle Reef-Ear Mtn	X	X
Devil's Kitchen	X	X
Haystack Butte	X	X
Little Belts Front		X
N. Little Belts		X
N. Rocky Mtn Front	X	
Sun River WMA	X	X
Region 5 Trend Areas		
Basin Creek		X
Grosfield	X	X

Standard Hunting Regulation

The Standard Hunting Regulation is implemented during years when population size is at or near LTA and recruitment is moderate. It has been documented that average recruitment is higher than in the Mountain Foothill PMU, although it is speculated that natural losses of does are somewhat lower. Correspondingly, the rate of doe harvest required to stabilize the population is higher than in the Mountain Foothill PMU.

A Standard Hunting Regulation may be recommended if triggers do not suggest changing to a restrictive or liberal season type.

Hunting Season:

- Five-week general rifle season for either-sex.
- Zero to moderate numbers of antlerless B licenses (no more than 50% of the liberal package).
- Six-week archery-only season for either-sex.

Restrictive Hunting Regulation

The Restrictive Hunting Regulation is used during periods of unfavorable environmental conditions when population size is substantially below LTA and recruitment is low. The rate of doe harvest will be reduced by limiting the use of antlerless B licenses to localized game damage situations and implementing a general buck-only season. If a HD does not have an established trend survey area, adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by season type, adjacent, representative HD(s)

with unlimited buck hunting on the general deer license may be used as another measure of population status.

A Restrictive Hunting Regulation may be recommended if both trigger 1 **AND** trigger 2 (a **OR** b) are met. If aerial surveys are not conducted in a HD, recruitment data from nearby HDs where surveys are flown should be used to assess trigger 1.

1. Recruitment is less than 30 fawns:100 adults.

AND

2. a) Total number of mule deer counted on the survey area is at least 25% below the LTA**.**

OR

b) In the absence of long-term survey data: Buck harvest is at least 25% below the LTA. Adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by permits this trigger should be measured in adjacent HDs with unrestricted buck hunting on the general deer license.

Hunting Season

- Five-week general rifle season for antlered bucks.
- Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs.
- Six-week archery-only season for antlered bucks.

Liberal Hunting Regulation

The Liberal Hunting Regulation is used during periods of favorable environmental conditions when the population size is substantially above LTA and recruitment is high. Natural losses of adult does are negligible. Doe harvest rates should be higher in those areas where population reductions are necessary. If a HD does not have an established trend survey area, adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by season type, adjacent, representative HD(s) with unlimited buck hunting on the general deer license may be used as another measure of population status.

A Liberal Hunting Regulation may be recommended if both trigger 1 **AND** trigger 2 (a **OR** b) are met. If aerial surveys are not flown in a HD, recruitment data from nearby HDs where surveys are flown should be used to assess trigger 1.

1. Recruitment is greater than 45 fawns:100 adults.

AND

2. a) Total number of mule deer counted on the survey area is more than 25% above the LTA**.**

OR

b) In the absence of long-term survey data: Buck harvest is more than 25% above the LTA. Adjacent, representative HD survey data may be used in addition to buck harvest

data. If buck harvest is limited by permits this trigger should be measured in adjacent HDs with unrestricted buck hunting on the general deer license.

Hunting Season:

- Five-week general rifle season for either-sex.
- Liberal numbers of antlerless B licenses with option for issuing multiple licenses either through the drawing or over the counter. Licenses may be valid for an individual HD or group of HDs.
- Six-week archery-only season for either-sex.

Many factors, other than hunting can affect mule deer populations. If a liberal or restrictive season structure is in place for ≥5 years and the population has not moved towards the LTA and back to a standard season type, then a season type other than those suggested by the triggers could be considered.

SOUTHERN MOUNTAINS POPULATION MANAGEMENT UNIT

OBJECTIVE: Maintain the total number of mule deer observed on trend areas within 30% of the long-term average.

Hunting Districts: 313, 314, 316, 317, 510, 520, and 560. HD 313 is a SMD. There are four survey trend areas in this PMU and flight frequency is typically consistent (Figure 5, Table 6).

This PMU, the smallest in the state, is 4,245 square miles in the Absaroka, Beartooth, and Pryor Mountains and a portion of the Gallatin Range in south-central Montana. Topography varies from rolling hills to sheer mountain canyons thousands of feet deep. Elevations range from 4,500 feet to nearly 13,000 feet. Precipitation varies from less than six inches annual rainfall in the Cottonwood Triangle to more than 40 inches per year in the mountain environments.

Vegetation varies from shrub desert, through montane forest with intermountain grassland, to alpine plateaus. Cottonwood, willow, and aspen dominate riparian areas. Cattle grazing is the primary land use. Cropland is primarily irrigated and dry land alfalfa, though the Clark's Fork valley supports corn and sugar beet production.

Fawn recruitment generally averages less than 40 fawns:100 adults. In poor years it is frequently less than 25 fawns:100 adults, and in good years it seldom exceeds 50:100. Unlike adjacent prairie/breaks and prairie/mountain foothill populations, many southern mountain populations have shown minimal recovery since the declines in the mid-1970s. Given low fawn recruitment and continued low population densities, total harvest should not exceed 15% of the doe population in the best years. Post-season buck:doe ratios seldom exceed 15:100.

Some of these populations have complex, long-range migrations between seasonal habitats therefore harvest strategies should be designed in such a way as to ensure maintenance of these migratory traditions.

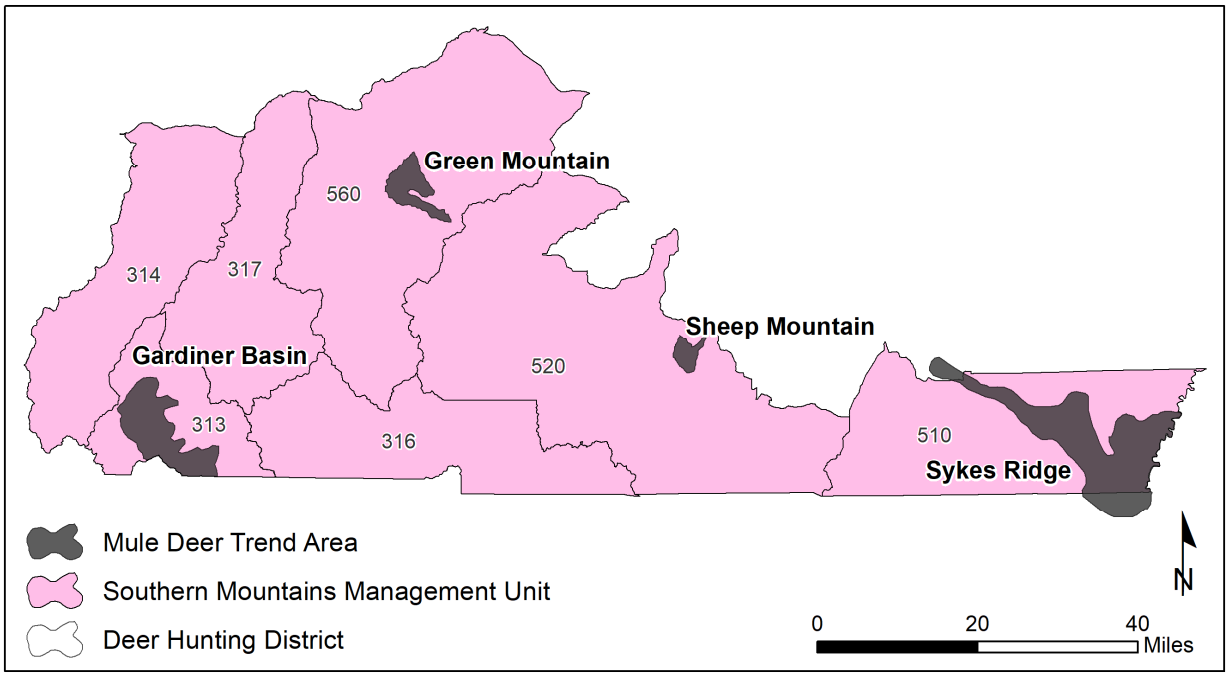


Figure 5. Southern Mountains Population Management Unit showing hunting district boundaries and mule deer trend areas.

Table 6. Post-season and/or spring flight frequency on trend areas in the Southern Mountains Population Management Unit. X's indicate trend survey flights completed during that period and crossed out sections indicate no trend survey flights normally completed during that period.

	Postseason Flight	Spring Flight
Region 3 Trend Areas		
Gardiner Basin	X	X
Region 5 Trend Areas		
Green Mountain	X	X
Sheep Mountain	X	X
Sykes Ridge	X	

Standard Hunting Regulation

The Standard Hunting Regulation is implemented during years when the population size is at or near LTA and recruitment is moderate. It has been documented that recruitment is somewhat lower in the east portion of the southern mountains compared to the mountain foothills, but somewhat higher in the west portion. Some southern mountain populations exhibit long distance migrations and require careful antlerless harvest management to maintain these specialized traditions of habitat use. Some of these populations have remained at low levels since the mid-1970s. Therefore, doe harvest rates should not exceed 10% of the estimated doe population.

A Standard Hunting Regulation may be recommended if triggers do not suggest changing to a restrictive or liberal season type.

Hunting Season (except HD 316):

- Five-week general rifle season for antlered bucks.
- None to moderate numbers of antlerless B licenses (no more than 50% of the liberal package).
- Six-week archery-only season for antlered bucks.

Restrictive Hunting Regulation

The Restrictive Hunting Regulation is used during periods of unfavorable environmental conditions when population size is substantially below LTA, and recruitment is low. Doe harvest will be reduced by limiting the use of antlerless B licenses to localized game damage situations and implementing a general buck-only season. If a HD does not have an established trend survey area, adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by season type, adjacent, representative HD(s) with unlimited buck hunting on the general deer license may be used as another measure of population status.

A Restrictive Hunting Regulation may be recommended if both trigger 1 **AND** trigger 2 (a **OR** b) are met. If aerial surveys are not flown in a HD, recruitment data from nearby HDs where surveys are flown should be used to assess trigger 1.

1. Recruitment is less than 30 fawns:100 adults.

AND

2. a) Total number of mule deer counted on the survey area is at least 30% below the LTA**.**

OR

b) In the absence of long-term survey data: Buck harvest is at least 25% below the LTA. Adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by permits this trigger should be measured in adjacent HDs with unrestricted buck hunting on the general deer license.

Hunting Season (except HD 316):

- Five-week general rifle season for antlered bucks.
- Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs.
- Six-week archery-only season for antlered bucks.

Liberal Hunting Regulation

The Liberal Hunting Regulation is used during periods of favorable environmental conditions when the population size is substantially above LTA and recruitment is high. Natural losses of adult does are negligible. If a HD does not have an established trend survey area, adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by season type, adjacent, representative HD(s) with unlimited buck hunting on the

general deer license may be used as another measure of population status

A Liberal Hunting Regulation may be recommended if both trigger 1 **AND** trigger 2 (a **OR** b) are met. If aerial surveys are not conducted in a HD, recruitment data from nearby HDs where surveys are flown should be used to assess trigger 1.

1. Recruitment is greater than 45 fawns:100 adults.

AND

2. a) Total number of mule deer counted on the survey area is more than 30% above the LTA**.**

OR

b) In the absence of long-term survey data: Buck harvest is more than 25% above the LTA. Adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by permits this trigger should be measured in adjacent HDs with unrestricted buck hunting on the general deer license.

Hunting Season (except HD 316):

- Five-week general rifle season with first nine days either-sex, last four weeks antlered bucks.
- Moderate to liberal number of antlerless B licenses by HD.
- Six-week archery-only season for either-sex.

Many factors, other than hunting can affect mule deer populations. If a liberal or restrictive season structure is in place for ≥5 years and the population has not moved towards the LTA and back to a standard season type, then a season type other than those suggested by the triggers could be considered.

Exception

HD 316:

- Rifle season for antlered bucks September 15 through the general rifle season with a general deer license.
- No archery-only season.

PRAIRIE/BREAKS POPULATION MANAGEMENT UNIT

OBJECTIVE: Maintain the total number of mule deer observed on trend areas within 20% above to 30% below the long-term average.

Hunting Districts: 400, 401, 403, 404, 405, 406, 410, 411, 412, 417, 419, 426, 444, 450, 471, 500, 502, 511, 530, 570, 575, 590, all 600, and 700 series. HDs 530 and 652 are SMDs. There are 48 survey trend areas in this PMU (Figure 6, Table 7).

The Prairie/Breaks PMU is 78,341 square miles in the eastern two thirds of Montana, and includes HDs in Regions 4, 5, 6, and 7. Habitat is flat to rolling benchlands, ponderosa pine savannahs, rugged badlands or breaks adjacent to major rivers, and riparian areas. The semi-arid climate has hot, dry summers and cold, dry winters, but large annual fluctuations in temperature and precipitation during all seasons are common. Dryland grain farming and livestock grazing are the primary agricultural/commercial land uses, except in the major river valleys where irrigated acreage produces alfalfa, sugar beets, corn, and small grains.

Native habitats are primarily grasslands, sagebrush/grasslands, deciduous shrub/grasslands, hardwood draws, ponderosa pine savannahs, breaks, and river bottoms. Native grasslands are dominated by western wheatgrass, thickspike wheatgrass, slender wheatgrass, bluebunch wheatgrass, green needlegrass, little bluestem, and various forbs. Shrubs found in sagebrush/grasslands are big sagebrush, silver sagebrush (*Artemisia cana*), rubber rabbitbrush (*Ericameria nauseosa*), skunkbush sumac (*Rhus trilobata*), and black greasewood (*Sarcobatus vermiculatus*), while deciduous shrub/grasslands include buffaloberry, chokecherry, snowberry, wild rose, and hawthorn. Ponderosa pine and Douglas fir are the major tree species in savannahs and isolated mountain ranges. Ponderosa pine and Douglas fir along with Rocky Mountain and common juniper, predominate breaks habitats. Hardwood draws feature green ash (*Fraxinus pennsylvanica*), boxelder (*Acer negundo*), American plum (*Prunus americana*), and American elm (*Ulmus americana*), while river bottoms are dominated by eastern cottonwood (*Populus deltoides*) and willows.

Seventy six percent of the land is private, with blocks of public land scattered throughout. Public lands are primarily BLM, USFS, or the United States Fish and Wildlife Service (USFWS). State lands accessible to the public include areas managed by FWP or DNRC. Land open and accessible to the public for hunting is highly variable.

More than 85% of the PMU supports mule deer during at least a portion of the year. Mule deer are found primarily in the uplands and in associated riparian areas along smaller streams but may use major river bottom habitats at times. Areas where mule deer have access to agricultural crops generally support comparatively higher densities of deer. In response to weather conditions that often vary greatly from year to year, mule deer populations in this PMU generally have larger fluctuations than those in the mountains. Recruitment can vary widely on an annual basis, and ranges from less than 30 fawns:100 adults in poor years to more than 60 fawns:100 adults in good years.

Similarly, natural losses of adult does may normally range from negligible to 20% depending on environmental conditions. During favorable periods, when natural losses of adult does may be negligible, stabilizing the population may require a doe harvest rate of 25–30% of the estimated doe population. Alternatively, during unfavorable periods, when natural losses of does are higher (10-20%), limited antlerless harvest will be necessary to help population(s) rebound. Post-season buck:doe ratios range from approximately 10 to 50 bucks:100 does.

The majority of HDs in the PMU have an unrestricted five-week general rifle season. The northwest portion of the PMU (HDs 400, 401, 403, and 406) has a shortened three-week general season due to sociological preferences. Beginning in 2020, efforts to manage CWD in these HDs resulted in two additional weeks of limited antlered buck permits for mule deer and white-tailed deer. However, season structure may change in ongoing efforts to manage CWD in response to prevalence and distribution of the disease.

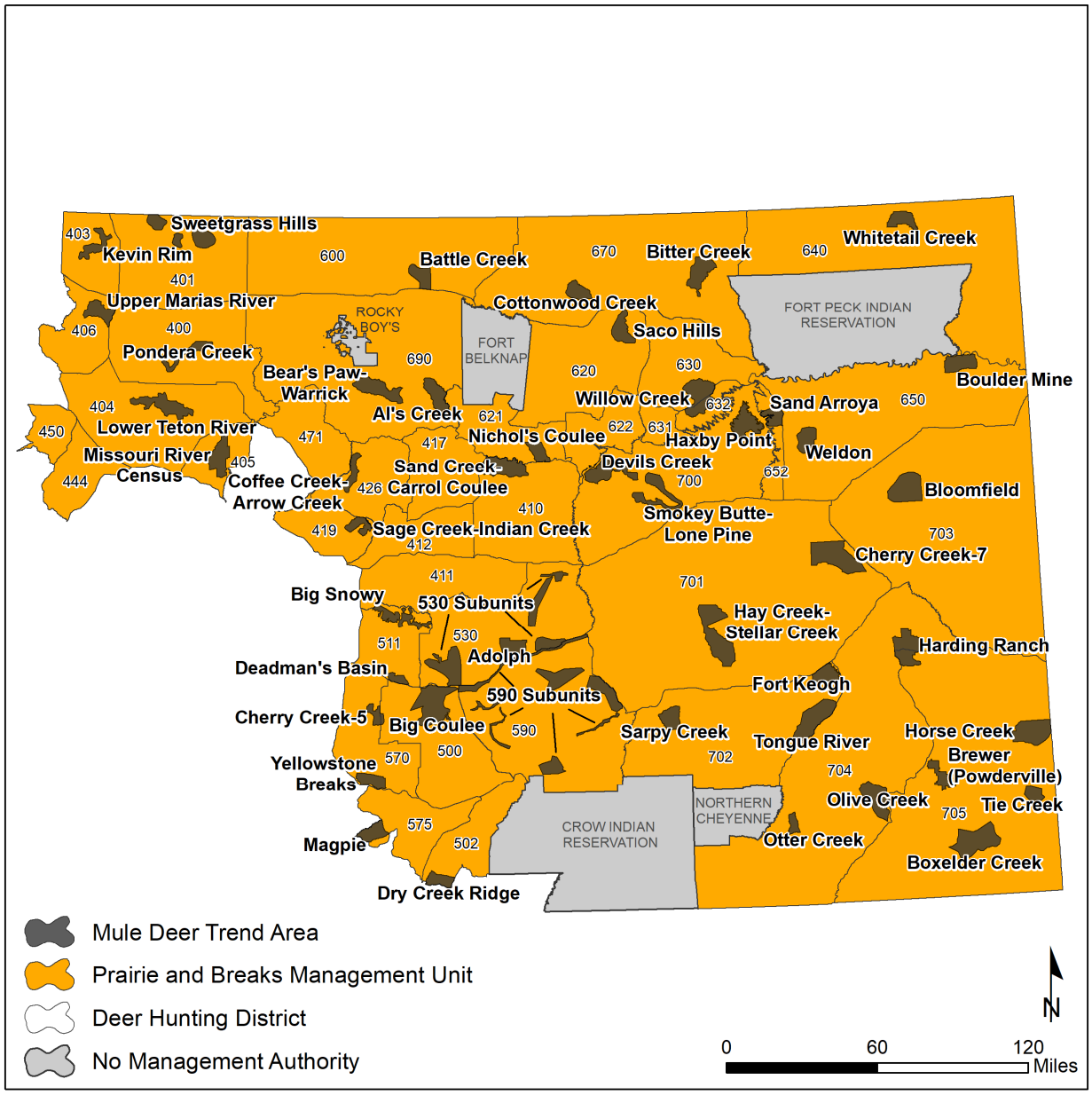


Figure 6. Prairie/Breaks Population Management Unit showing hunting district boundaries and mule deer trend areas.

Table 7. Post-season and/or spring flight frequency on trend areas in the Prairie/Breaks Population Management Unit. X's indicate trend survey flights completed during that period and crossed out sections indicate no trend survey flights normally completed during that period.

Trend Area	Postseason Flight	Spring Flight	Trend Area	Postseason Flight	Spring Flight
Region 4 Trend Areas			***Region 6 Trend Areas***		
Coffee Cr–Arrow Cr	X	X	Al's Creek	X	X
Kevin Rims	X		Battle Creek	X	X
Lower Teton River	X		Warrick	X	X
Missouri River	X	X	Bitter Creek	X	X
Pondera Creek	X		Boulder Mine	X	X
Sage Cr–Indian Cr	X	X	Cottonwood Creek	X	X
Sand Cr-Carroll Coulee	X	X	Nichol's Coulee	X	X
Sweetgrass Hills	X		Saco Hills	X	X
Upper Marias River	X		Sand Arroyo	X	
Region 5 Trend Areas			Weldon	X	X
530 Subunits	X	X	Whitetail Creek	X	X
590 Subunits	X	X	Willow Creek	X	X
Adolph	X	X	***Region 7 Trend Areas***		
Big Coulee	X	X	Bloomfield	X	X
Big Snowy		X	Boxelder Creek		X
Cherry Creek 5	X	X	Brewer (Powderville)	X	X
Deadman's Basin	X	X	Cherry Creek 7	X	X
Dry Creek Ridge	X	X	Devil's Creek	X	X
Magpie	X	X	Fort Keogh	X	X
Yellowstone Breaks	X	X	Harding Ranch	X	X
			Haxby Point	X	X
			Hay Cr–Stellar Cr.	X	X
			Horse Creek	X	X
			Olive Creek	X	X
			Otter Creek	X	X
			Sarpy Creek	X	X
			Smokey Butte–LP	X	X
			Tie Creek	X	X
			Tongue River	X	X

Standard Hunting Regulation

The Standard Hunting Regulation is implemented during those years when population size is at or near LTA and recruitment is moderate.

A Standard Hunting Regulation may be recommended if triggers do not suggest changing to a restrictive or liberal season type.

Hunting Season (See Exceptions):

- Five-week general rifle season for either-sex.
- Low to moderate numbers of antlerless B licenses.
- Six-week archery-only season for either-sex.

Restrictive Hunting Regulation

The Restrictive Hunting Regulation is used during periods of unfavorable environmental conditions when population size is substantially below LTA and recruitment is low. The rate of doe harvest will be reduced by limiting the use of antlerless B licenses to localized game damage situations and implementing a general buck-only season. If a HD does not have an established trend survey area, adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by season type, adjacent, representative HD(s) with unlimited buck hunting on the general deer license may be used as another measure of population status.

A Restrictive Hunting Regulation may be recommended if both trigger 1 **AND** trigger 2 (a **OR** b) are met. If aerial surveys are not conducted in a HD, recruitment data from nearby HDs where surveys are flown should be used for assessing trigger 1.

1. Recruitment is less than 30 fawns:100 adults.

AND

2. a) Total number of mule deer counted on the survey area is at least 30% below the LTA**.**

OR

b) In the absence of long-term survey data: Buck harvest is at least 25% below the LTA. Adjacent, representative HD survey data may be used in addition to buck harvest data.

Hunting Season (See Exceptions):

- Five-week general rifle season for antlered bucks.
- Localized game damage complaints on private land may require limited numbers of antlerless B licenses for specific portions of HDs.
- Six-week archery-only season for antlered bucks.

Liberal Hunting Regulation

The Liberal Hunting Regulation is used during periods of favorable environmental conditions when population size is substantially above LTA and recruitment is high. Doe harvest rates should be higher in those areas where population decreases are necessary. If a HD does not

have an established trend survey area, adjacent, representative HD survey data may be used in addition to buck harvest data. If buck harvest is limited by season type, adjacent, representative HD(s) with unlimited buck hunting on the general deer license may be used as another measure of population status.

A Liberal Hunting Regulation may be recommended if both trigger 1 **AND** trigger 2 (a **OR** b) are met. If aerial surveys are not conducted in a HD, recruitment data from nearby HDs where surveys are flown should be used for assessing trigger 1.

1. Recruitment is greater than 60 fawns:100 adults.

AND

2. a) Total number of mule deer counted on the survey area is more than 20% above the LTA**.**

OR

b) In the absence of long-term survey data: Buck harvest is more than 25% above the LTA. Adjacent, representative HD survey data may be used in addition to buck harvest data.

Hunting Season (See Exceptions):

- Five-week general rifle season for either-sex.
- Liberal numbers of antlerless B licenses with option for issuing multiple licenses either through the drawing or over-the-counter. Licenses may be valid for an individual HD or group of HDs.
- Six-week archery-only season for either-sex.

Many factors, other than hunting can affect mule deer populations. If a liberal or restrictive season structure is in place for ≥5 years and the population has not moved towards LTA and back to a standard season type, then a season type other than those suggested by the triggers could be considered.

<u>Exceptions</u>

HDs 400, 401, 403, & 406:

- Three-week rifle season for either-sex with a general deer license followed by two-week rifle season for antlered bucks by limited permit quota.

MULE DEER SPECIAL MANAGEMENT DISTRICTS

GOAL: Provide hunting opportunity for older aged bucks in a limited number of districts offering reasonable public access.

Hunting Districts: 202, 210, 261, 270, 291, 300, portion of 312, 313, 324, 441, 455, 530, and 652.

In 2001, 16 of the 159 HDs (10%) were designated SMDs. These HDs were managed with restrictive hunting regulations designed to significantly limit antlered buck harvest. As of 2021, there are 13 SMDs with regulations designed to diversify and increase buck age structure by restricting buck harvest (Figure 7). Twelve have a limited buck permit regulation and one has a short three-week season. All have been SMDs since before 1999.

Special management districts are not the same as HDs where the buck regulation has changed to limited or unlimited buck permits due to other deer management/demographic and/or human social interests. SMDs, unlike "regular" HDs that have limited or unlimited buck permits, have more specific buck management objectives and will likely not be changed back to a general buck season regulation. However, the presence and/or prevalence of CWD may influence decisions related to maintaining SMD status. As an example, after detection of CWD and to increase management options for CWD in the future, HD 510 was eliminated as an SMD in 2018. For further information on CWD management refer to the FWP CWD Management Plan.

Buck hunting opportunity in SMDs limit the harvest of antlered bucks to provide some Montana hunters the opportunity to harvest an older aged buck in areas with good access. Over the last 30+ years, FWP has documented the demand for this opportunity through three hunter preference surveys. A 1988 survey of deer hunters found that Montana deer hunters could be categorized into four groups: generalists-enthusiasts (27%), meat hunters (36%), generalists-meat hunters (14%), and trophy hunters (23%; Montana Fish, Wildlife & Parks 1988). In addition, the survey found a general high level of statewide satisfaction (88%) of deer management with more opposition to further restricted seasons than support (59% oppose, 27% support and 14% were indifferent related to season restrictions focused on managing for 'big bucks') (MT Fish, Wildlife & Parks 1988).

A 1995 hunting preference survey measured the acceptability of certain hunting regulations among resident and nonresident hunters and determined what factors influence where a hunter chooses to hunt. That survey found that all hunters, no matter their preferences, want to maintain their hunting opportunity with as few restrictions as possible. In addition, 15–20% of hunters, wanted more hunting restrictions to improve buck numbers and the chance at hunting an older aged buck. Fifteen percent of the respondents rated taking a trophy buck as the second most important reason for hunting, behind enjoyment of the outdoors and the hunting experience. Another 32% ranked taking a trophy as third, with obtaining venison as second behind enjoyment of the outdoors and the hunting experience. Most hunters in these two categories were highly influenced in their choice of hunting area by the number of bucks perceived to be in the hunting area. Although some were after a trophy, all wanted a chance to harvest an older aged buck (Montana Fish, Wildlife & Parks 1995).

Following the 1995 survey FWP concluded that:

> "results from hunting preference surveys, comments received during season setting meetings, and the environmental analysis conducted for the 1997 hunting season do not

support a statewide change toward restrictive hunting regulations to improve opportunity for taking older aged bucks across large geographic areas. Giving up the opportunity to hunt and to shoot a deer to improve buck numbers and age structure was unacceptable to the majority. However, there was support from a minority of hunters to limit hunting opportunity and buck harvest in some HDs where access is currently good. Areas with adequate security still occur throughout the state and provide opportunities for taking larger bucks with post-season buck:doe ratios exceeding 20:100. However, this has not met the demand of those that seek similar opportunities in more accessible public land. Selecting a few HDs to limit hunting opportunity and the harvest of bucks (by permit in most circumstances) has met this minority demand while minimizing the impact to outfitting and hunting opportunity for the majority of hunters. Permit holders will be limited to that HD for mule deer buck hunting."

In a 2011 hunter preference survey, 37% of residents said they would forego buck hunting every year to be able to harvest a mature buck once every several years. Although this appears to be an increase in the number of "trophy" hunters since 1995, most "trophy" hunter respondents said mule deer hunting wasn't very important to them. Overall, 67% of hunters either supported or strongly supported hunting bucks in the rut. Harvesting a trophy was the least important of ten reasons to hunt mule deer among Montana hunters (Lewis et al. 2011).

In 2018 FWP evaluated the effects restrictive season types (limited permits, unlimited permits and shortened seasons) on buck and fawn to doe ratios, harvest and hunter numbers by comparing 45 restrictive-season HDs to all others (Newell and Meredith 2018). This analysis included all HDs with restrictive buck seasons, including SMDs and those exceptions outside of AHM packages. Using buck restrictions to achieve specific buck:doe ratio objectives was effective if the objectives were not too high. Limited permit HDs had the greatest number of years with buck:doe ratios above 20:100, followed by HDs with shortened seasons, HDs with no restrictions, and then HDs with unlimited permits. HDs with limited permits followed by HDs with shortened seasons and then HDs with no restrictions showed the greatest increasing trends in the number of bucks per 100 does while HDs with unlimited permits showed a stable unchanging trend in the number of bucks:100 does. About 80% of the time, objectives of maintaining more than 10 bucks per 100 does, postseason, were met in HDs with unlimited permits, but achieving and sustaining ratios much higher than 20 bucks:100 does is unlikely with this restriction type. In fact, the model for HDs with unlimited permits indicated that the increased buck:doe ratio in unlimited permit areas (as compared to HDs with no restrictions) fluctuated very little over time, compared to increasing buck:doe ratios in HDs with short seasons and no restrictions. Eventually, HDs with shortened seasons or no restrictions would have buck:doe ratios higher than HDs with unlimited permits.

All three restricted regulation types resulted in increased fawn:adult ratios at a time when it was decreasing in HDs with no restrictions.

The different restrictive season types had varying effects on the buck harvest. The proportion of bucks with 4 or more points was highest in HDs with limited permits, and our model predicted an annual increase in this metric. All other HDs showed an annual increase in the proportion of bucks with 4 or more points with shortened season and no restriction HDs having nearly identical proportions. HDs with unlimited permits had the lowest proportion of 4 points in the harvest.

Declines in hunter numbers and hunter days per 100 mi^2 were observed across all HDs statewide, with the greatest declines in HDs with limited permits, followed by HDs with unlimited

permits. HDs with shortened seasons, and HDs with no restrictions also experienced declines in hunter densities, but these declines were not statistically significant. This is one of the significant trade-offs of restrictive seasons. Currently hunters who draw a permit gain the opportunity to hunt in a limited or unlimited permit HD but lose the opportunity to hunt antlered bucks in other general deer license HDs. Hunters who do not have a permit lose opportunity by not being able to hunt in any of the districts with limited or unlimited permits and all hunters lose opportunity when the season length is reduced by two weeks.

FWP is concerned that increasing the number of HDs with unlimited or limited permits may cause increased pressure in HDs with any antlered buck regulations thus decreasing buck:doe ratios in those HDs. Also, if the number of HDs with unlimited or limited permits increases, there may be a decrease in hunter participation because hunters have to travel further from home to hunt a mule deer buck in an unrestricted area.

To improve consistent management and application of SMDs across the state, the following criteria have been identified to help steer selection of such opportunities:

1. The HDs should be in a portion of the state where hunting opportunity for bucks and buck age diversity is low. This will reduce the impact to hunting opportunity statewide and still provide at least one or two SMDs reasonably close to a hunter's place of residence.

2. There should be only a few small districts chosen because of the impacts from a restriction on hunting opportunity and the statewide impact of the resulting redistribution of hunters.

3. There should be significant hunter interest in managing for older bucks in the area.

4. The locations should be accessible to hunting; that is, the HD should not be an area with a considerable amount of closed private land. Typically, areas with limited access do not correspond to where the demand for hunting older bucks occurs.

5. The area should not have a naturally high buck:doe ratio because of limited access.

6. SMDs (existing or proposed new) must consider the impact of a hunting season structure related to CWD management.

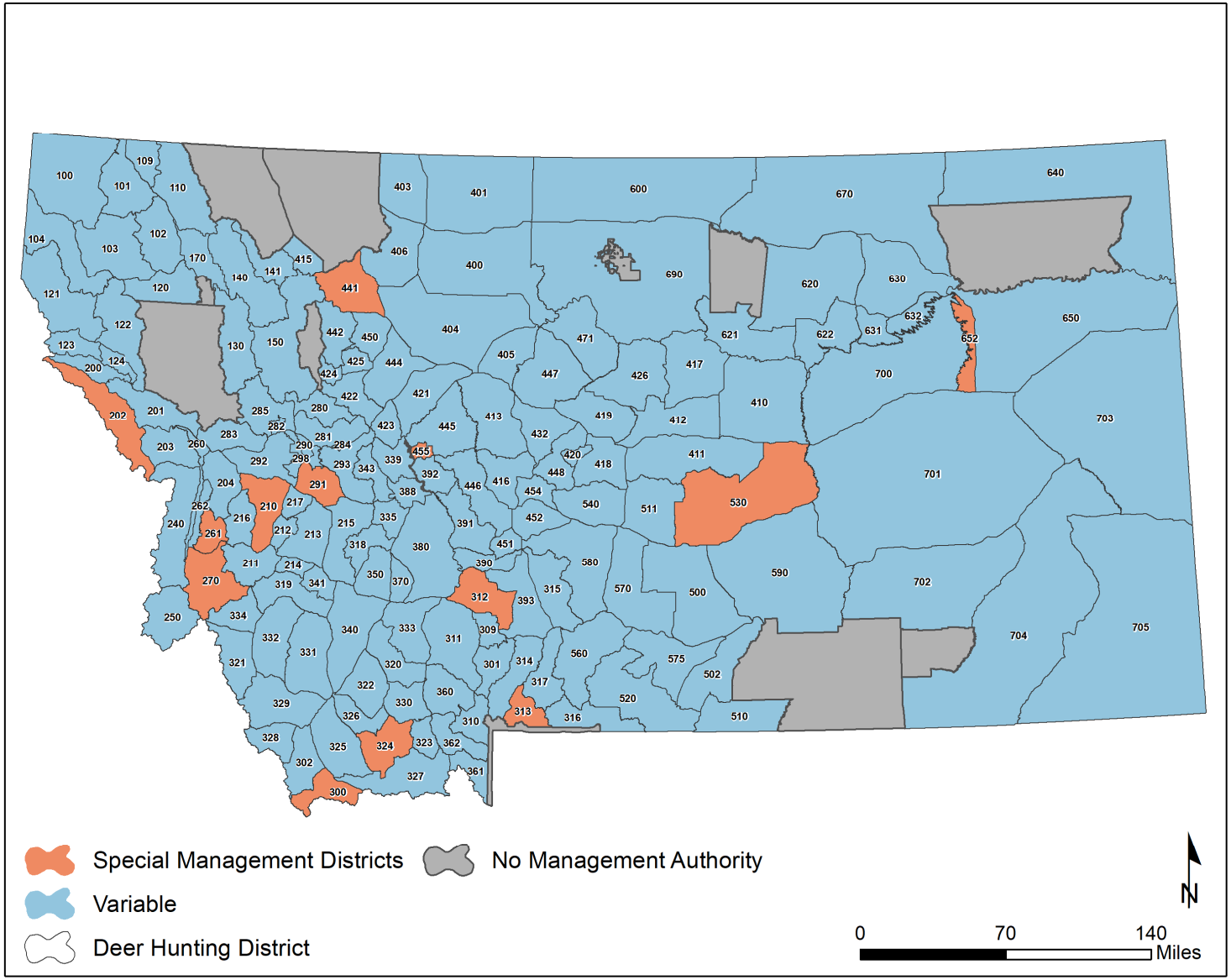
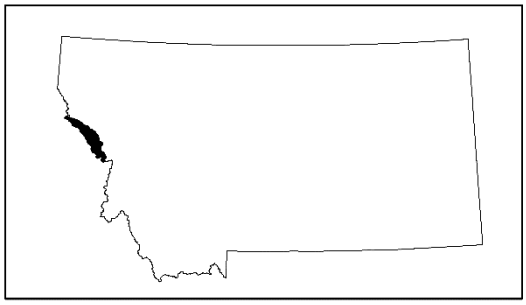


Figure 7. Special buck management districts in Montana.

Hunting District 202



Management Objectives:

- **Post-season buck:doe ratio ≥40:100**

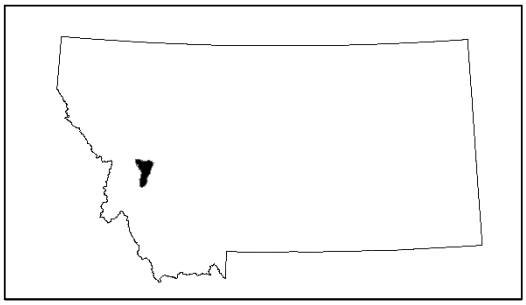
Description: Hunting District 202 is a 724 mi^2 district of rugged mountain terrain in the lower Clark Fork drainage south of Superior and adjacent to Idaho. Ninety-five percent of the HD is in public ownership comprised of USFS (89.5%), FWP (4.2%), and DNRC (0.9%). Most of the district is heavily forested but 82% is within one mile of a road.

Special Management District History: HD 202 has been regulated by limited permit buck harvest since 1998. Historically, the HD had a five-week any-buck season. In the 1990s, there were very low buck:doe ratios and hunters expressed interest in managing for more and older mule deer bucks, resulting in changes to the historical season type. There has been good public support for the opportunity to harvest an older aged buck. Buck:doe ratio objectives have been met when flown but weather, helicopter availability, and sightability have been limiting factors in consistently getting surveys completed. Surrounding HDs 200, 201, and 203 allow buck harvest on the general deer license, so there is still local opportunity to hunt buck mule deer if a permit is not drawn. First choice drawing success for the HD 202 mule deer buck permit in 2020 was 30%.

Antlerless Opportunities: There have been no antlerless harvest opportunities offered in this HD since 1996.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • No antlerless B licenses

Hunting District 210



Management Objectives:

- **Post-season buck:doe ratio ≥40:100**
- **Minimum 30% of harvested bucks ≥ 4.5 years old**

Description: Hunting District 210 is 488 mi^2 and is located between Flint Creek and Rock Creek. Habitat is primarily comprised of forest/woodland and grasslands with a small portion of shrubland. The HD is approximately 41% public land comprised of USFS (36.5%), BLM (2.4%), DNRC (2.4%), and other state lands (0.1%). A large portion of the private lands are owned by a corporate timber company, and a considerable portion of the remaining private land is enrolled in FWP's Block Management Program. The HD contains low security habitat with 82% of the land area within one mile of a road.

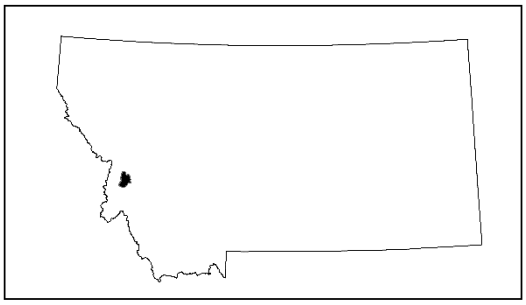
Special Management District History: HD 210 has been managed with limited buck permits since 1998. Buck:doe ratios in the 1990s were consistently <10:100 and although there has been public interest in managing for higher numbers of bucks in this area, the interest hasn't been as strong as in the Bitterroot HDs. Prior to changing to limited permits this HD had a five-week general rifle season for antlered bucks. Following implementation of limited buck permits, Buck:doe ratios improved quickly, ranging from 15–30:100 when more than 100 mule deer were counted during aerial surveys from 1998 to 2008. Annual fawn recruitment also improved after 1998. The fawn:doe ratio ranged from 54–68:100 when more than 100 mule deer were counted during surveys between 1999 and 2008. The HD has not been surveyed for mule deer since 2009 resulting in a lack of more recent data on buck:doe ratios.

Harvested buck age class is difficult to determine due to the small number of HD 210 bucks checked at the Anaconda hunter check station. The Anaconda check station sees a smaller volume of harvested animals compared to other check stations, and interpreting trends in harvested buck age class is done with caution due to small sample size. A trend suggests the age class of bucks has increased since introducing limited permits, though it is unknown if ≥30% of those bucks are ≥ 4 years old each year. Statewide hunter harvest surveys provide better context in overall harvest trends, though these data lack age information for harvested bucks.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have ranged from no opportunity to a limited number of antlerless B licenses. At times, additional youth hunting opportunities have included allowing harvest of antlerless mule deer with a general deer license outside the National Forest boundary and not valid on BLM lands or FWP WMAs.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • Option for limited antlerless B licenses to address population goal for unit or game damage complaints

Hunting District 261



Management Objectives:

- **Post-season buck:doe ratio ≥40:100**
- **Minimum 30% of harvested bucks ≥ 4.5 years old**

Description: Hunting District 261 is 214 mi^2 and the habitat ranges from alpine forest along the Bitterroot-Rock Creek Divide, through pine and fir-dominate montane forest, to intermountain grassland in the Bitterroot Valley, with broad areas of shrubland (primarily sagebrush, antelope bitterbrush, and mountain mahogany). A majority of this HD is in public ownership (62%), consisting of USFS (55.7%), DNRC (4.8%), and FWP lands (1.8%). Access is moderate in this HD with fewer access points and forest roads compared to neighboring HD 270.

Special Management District History: HD 261 has been regulated by limited permit buck harvest since 1998. Prior to limited permit buck hunting, the HD used shortened seasons for buck hunting (1992–1998) in an effort to reduce buck harvest. Post-season buck:doe ratios were consistently <10:100 prior to limited permit buck regulations, but generally had good fawn recruitment. Since the limited permit buck regulation has been implemented, buck:doe ratios and buck ages have increased. The limited permits in HD 261 are highly coveted with 1,408 applicants for 15 permits in 2020.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have ranged from no opportunity to a limited number of antlerless B licenses. When offered, antlerless B licenses are only valid outside the National Forest boundary and are not valid on the Calf Creek WMA.

Additional Information: In 2014, HD 262 was carved out of HDs 204 and 261 in response to game damage by elk and deer in agricultural areas. Management here has focused on antlerless deer to address game damage. Until 2018, limited permits for HD 261 were also valid in HD 262. Permit opportunities were separated in 2018, with more permits allocated in HD 262 where agricultural crops and the high security afforded by private land develop older age class animals (HD 262 is 97% private land). FWP's ability to address game damage problems caused by mule deer bucks has been problematic and management options are still being developed and tested. The existing desire for older age class mule deer in HD 262 is socially driven, however this district is not considered a SMD.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • Option for limited antlerless B licenses to address population goal for unit or game damage complaints

Hunting District 270

Management Objectives:

- **Post-season buck:doe ratio ≥40:100**
- **Minimum 30% of harvested bucks ≥ 4.5 years old**

Description: Hunting District 270 is approximately 664 mi^2 and habitat ranges from alpine forest along the Continental Divide, through pine and fir-dominate montane forest, to intermountain grassland in the valleys, with broad areas of shrubland (primarily sagebrush, antelope bitterbrush, and mountain mahogany). Eighty five percent of the HD is in public ownership by USFS (80.3%) and DNRC (4.3%). Access is excellent in this HD with a high percentage of public land as well as several large private ranches enrolled in FWP's Block Management Program. Seasonal road closures exist on several forest roads with the goal of reducing impacts to big game during migration and fawning/calving.

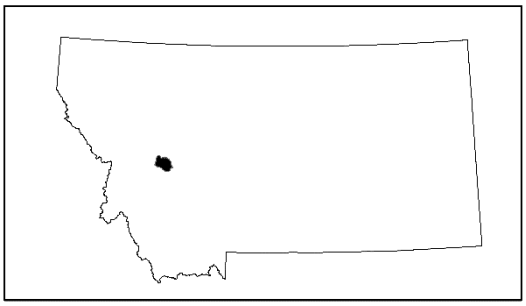
Special Management District History: HD 270 has been regulated by limited permit buck harvest since 1998. Prior to limited permit buck hunting, the HD used shortened seasons for buck hunting (1992–1998) in an effort to reduce buck harvest. There has been considerable interest for many years to manage for more and older bucks in the Bitterroot. Prior to limited-permit buck regulations, post-season buck:doe ratios were consistently <10:100, but generally had good fawn recruitment. Buck:doe ratios have averaged 30-60:100 since implementing limited buck permits, and buck ages have also increased. During the 20 years before implementing limited permits, the average age of mule deer bucks from HD 270 checked through the Darby Check Station was between 2 and 2.5 years old. From 2004–2020, under a limited permit regulation, average buck age was 6 years old (range 4–8). The limited permits in HD 270 are highly coveted. With 8,534 applicants for 45 permits in 2020, it was the hardest deer permit to draw in the state.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have ranged from no opportunity to a limited number of antlerless B licenses.

Additional Information: A new limited permit valid for bucks with 3 antler points or fewer on one side (with mandatory inspection) was adopted beginning in 2020, with the goal of reducing buck:doe ratios to reduce CWD risk while minimizing impacts to trophy quality mule deer; however, this regulation is experimental and may be removed if management goals are not met.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • Option for limited antlerless B licenses to address population goal for unit or game damage complaints

Hunting District 291



Management Objectives:

- **Post-season buck:doe ratio ≥40:100**
- **Minimum 30% of harvested bucks ≥ 4.5 years old**

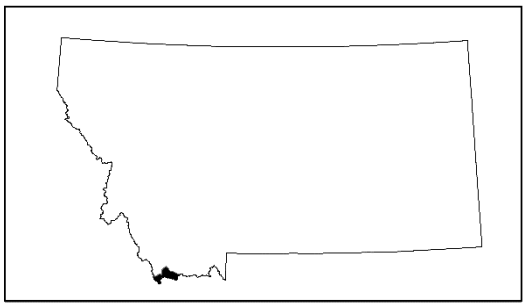
Description: Hunting District 291 is 322 mi^2 and includes the East Garnet Range located between Drummond, Avon and Helmville. The area is relatively dry and contains more open grass/shrub habitat and less heavily timbered areas compared to other HDs in Region 2. Twenty percent of the HD is in public ownership by BLM (14.0%) and DNRC (6.1%). Although this HD has a large amount of private land, much of it is enrolled in FWP's Block Management Program, and access is good. The HD has relatively low habitat security with 89% of the HD within one mile of a road.

Special Management District History: HD 291 has been managed with a restrictive season for bucks since 1986. Prior to the implementation of a limited permit buck regulation, the HD allowed one week of buck hunting on the general deer license and buck:doe ratios were generally 4–5 bucks:100 does. Since 2001 no data have been collected that allow comparison with the stated objectives, though biologists may begin to survey opportunistically as time and budget allows. Beginning in 2004, a designated portion of permits has been allocated for youth hunters.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have ranged from no opportunity to a limited number of antlerless B licenses. At times, antlerless B licenses are only valid on private lands.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • Option for limited antlerless B licenses to address population goal for unit or game damage complaints

Hunting District 300



Management Objectives:

- **Post-season buck:doe ratio ≥ 25:100**
- **Minimum 40% of harvested bucks ≥ 4.5 years old**

Description: Hunting District 300 is 327 mi^2 that encompasses the Lima Peaks Range in southwest Montana. The HD falls within the Mountain Foothill ecotype. Habitat is primarily comprised of shrub/grassland, conifer-dominated forest, and grassland. The HD is 74% public land comprised of USFS (56.2%), BLM (9.1%), and DNRC (8.2%). Opportunity exists for hunters to access a high proportion of the HD.

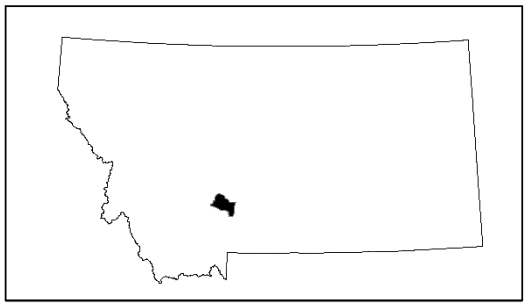
Special Management District History: HD 300 has been regulated by limited permit buck harvest since 1998 to meet the desire for more opportunity to harvest older age class bucks. Buck:doe ratios in post-season surveys have increased over time during limited permit regulations, but the buck:doe ratio objective has been met only 10 of 23 years during that time. Attempts to collect age data from harvested mule deer resulted in low sample sizes which precluded useful estimates of age composition in the harvest. From 1998–2020, the proportion of bucks harvested with four or more antler points has averaged 58% and ranged from 28%-82%, annually.

Antlerless Opportunities: Historically, antlerless mule deer regulations included limited antlerless B licenses (2004–2015). Since 2016, antlerless mule deer harvest with the general deer license has been allowed throughout the six-week archery-only and five-week general rifle season.

Additional Information: Mule deer in HD 300 area are highly migratory. A portion of the population winters in Idaho, with the balance migrating north and wintering along the east side of the Lima Peaks and Tendoy ranges. Spring surveys indicate the population declined since high counts in the early1990's. Trend counts completed during spring 2019 and 2020 were relatively high. However, these counts occurred after the survey area was expanded by approximately 20%, to address shifting distribution of mule deer at spring green-up. Additional years of data are necessary to assess current trends. Winter range browse condition across the HD appears to have declined. It's hypothesized that historic over browsing by ungulates and conifer forest succession has diminished winter browse availability and mule deer carrying capacity has been diminished as a result. Aerial herbicide application, completed during the 1960s and 1970s, also facilitated browse loss across thousands of acres of mule deer habitat. Forest management projects are underway to enhance browse vigor on winter range.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery only season for antlered buck mule deer by limited permit quota • Five-week general rifle season for antlerless mule deer with a general deer license • Six-week archery only season for antlerless mule deer with a general deer license

Hunting District 312 (Portion)



Management Objectives:

- **Post-season buck:doe ratio >25:100**
- **Post-season survey averages >8 four-point bucks:100 does**

Description: Within HD 312, a SMD exists in a 176 mi^2 portion encompassing the west Bridger Mountains and eastern portion of the Gallatin Valley. The HD falls within the Mountain Foothill ecotype. Habitat is primarily forest and woodland, followed by shrubland, steppe, grassland, and human use. The SMD portion is 52% public land, primarily USFS (50%) with the remainder comprised of a combination of other public ownership. FWP holds conservation easements allowing hunting access to some private lands. Much of the buck hunting occurs on public land, so hunter access is reasonable. However, some mature bucks live year-round in private agricultural fields in the mountain foothills where gaining access may be challenging.

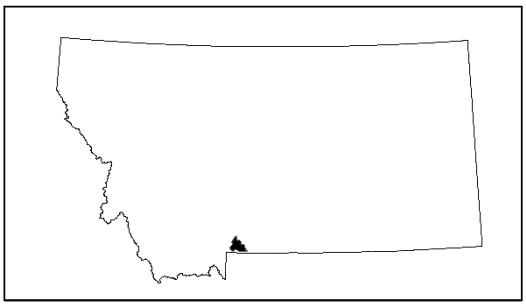
Special Management District History: A portion of HD 312 was designated to be a special buck management district in 1998. The special buck management designation was part of a statewide effort to recognize a portion of mule deer hunters that desired opportunity to periodically pursue larger-antlered buck mule deer (FWP 1995). Original objectives included current objective one and a second objective that a minimum of 40% of bucks harvested were at least 4 years old. However, due to small sample sizes of hunters and the expense of collecting and aging teeth, the age objective was replaced with a new objective that can be more easily measured and potentially less biased. This portion of HD 312 has 26 years of survey data from before it's SMD designation (1971–1997) and 23 years of data after its designation (1998–2020). Based on these data, post-season buck:doe ratios have increased from 21.8 to 38.9 bucks:100 does. Additionally, four-point bucks:does increased from an average of 5.5 to 10.7 bucks:100 does. On average, this HD is close to meeting the overall buck:doe ratio objective. The district has met the four-point buck:doe ratio objective in 8 of the last 10 years (2011–2020).

Antlerless Opportunities: Antlerless opportunities have existed across HD 312 (not just the SMD portion) since before 1983. Antlerless mule deer can be harvested on the general deer license during the archery season and antlerless B licenses have ranged from none to a limited number.

Additional Information: Bridger Mountains mule deer were part of a research effort. The trend area surveyed is one of seven defined winter ranges to which collared female mule deer showed high site fidelity. Vegetation exclosures indicate habitat succession is occurring and that browse is being used but not overused across winter range.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • Six-week archery-only season for antlerless mule deer with a general deer license • Limited antlerless B licenses

Hunting District 313



Management Objectives:

- **Post-season buck:doe ratio ≥ 15:100**
- **≥ 35% of bucks observed post-season ≥ 2.5 years old**

Description: Hunting District 313 is approximately 252 mi^2 and is adjacent to the northern boundary of Yellowstone National Park. Habitat type is primarily conifer-dominated forest followed by shrubland, grassland, and other habitat types. Eighty-one percent of the HD is public land comprised of USFS (75.7%), FWP (3.2%), and other public ownership (1.6%). Much of the district, including areas of high mule deer use, are accessible to hunters.

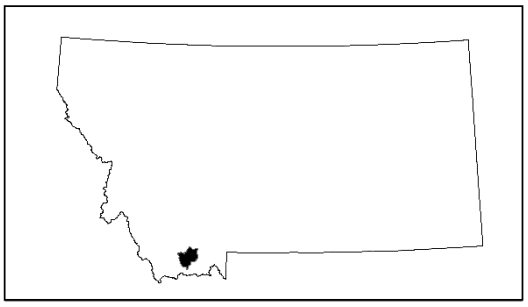
Special Management District History: The current buck management structure in HD 313 was implemented in 1994. Current special management allows harvest of any buck during archery season and the first 3 weeks of the general season, with the final two weeks of general season closed to buck hunting. Before the current structure was adopted, a 2-point restriction was tried for 3 years (1991–1993) to address public dissatisfaction with low buck composition and a young age structure. This regulation restricted buck harvest during the last two weeks of the season to bucks with two or more antler points. It resulted in minor increases in buck ratios but did not meet objectives. From 1995 through 2019, under the current buck regulation, 18 post-season buck composition surveys were completed. The post-season buck:doe ratio objective was met during 15 of 18 years, and the post-season older buck objective has been met during all surveys.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have ranged from no opportunity to a limited set of antlerless B licenses.

Additional Information: Although shortened seasons have been ineffective in other areas, the shortened season in this HD is effective due to the migratory patterns of mule deer utilizing winter range in the district. Mule deer that winter in HD 313 are primarily migratory, arriving to winter range in the Gardiner Basin from many different summer ranges. Susceptibility to harvest on the winter range is high due to open terrain, predominantly public land, and road systems which facilitate hunter access.

Hunting Season
• Three-week rifle season for antlered bucks with a general deer license • Six-week archery-only season for antlered buck mule deer with a general deer license • Six-week archery only season for antlerless mule deer with a general deer license when standard or liberal regulations are in effect • Limited antlerless B licenses

Hunting District 324



Management Objectives:

- **Post-season buck:doe ratio ≥ 25:100**
- **Minimum 40% of harvested bucks ≥4.5 years old**

Description: Hunting District 324 is 463 mi^2 and encompasses portions of the Snowcrest and Gravelly mountain ranges in southwest Montana. The HD falls within the Mountain Foothills ecotype. Habitat is comprised of primarily shrub/grassland, followed by conifer-dominated forest, grassland and riparian. The HD is 88% public land comprised of USFS (58.8%), DNRC (16.7%), FWP (9.2%), and BLM (3.6%). Opportunity exists for hunters to access a high proportion of the HD.

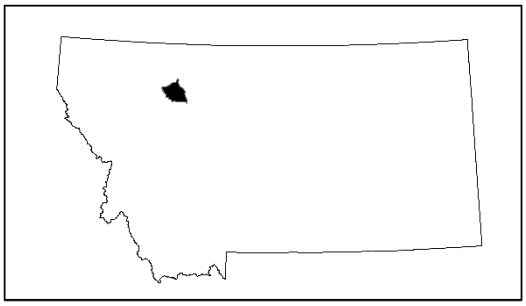
Special Management District History: Special buck management in this HD began in 1998. The special buck management designation was part of a statewide effort to recognize that a portion of mule deer hunters desired opportunity to periodically pursue larger-antlered buck mule deer. That desire was documented as part of a mule deer hunter preference survey completed by FWP in 1995. From 1998 through 2020, post-season buck composition surveys were completed following 22 hunting seasons. The post-season buck composition objective was achieved during 15 of those 22 years. Limited harvest data collected at hunter check-stations indicates the age objective for harvested bucks is achieved annually.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have consisted of combinations of limited antlerless B licenses and antlerless mule deer being valid to harvest with a general deer license only during the archery season. From 2015–2021, the only opportunity to harvest an antlerless mule deer is during the archery season with a general deer license.

Additional Information: Mule deer have experienced substantial long-term population decline across this HD. This decline has continued during the last two decades in-spite of substantial reductions in antlered and antlerless harvest by hunters. Long-term population decline is believed to be due in large part to diminished amounts of available winter browse, resulting from increased competition from growing elk populations and habitat succession from early-succession shrub dominated to late-succession conifer dominated.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • Optional limited antlerless B licenses during standard and liberal regulations

Hunting District 441



Management Objectives:

- **Post season buck:doe ratio ≥ 25:100**
- **≥ 60% of bucks harvested are ≥ 4 point**

Description: Hunting District 441 is just under 600 mi^2 in size. This HD is comprised of predominately grassland habitat with a variety of other landcover types. The Rocky Mountain Front foothills and Bob Marshall Wilderness comprise the western portion of this district giving way to intermountain foothill grassland prairie habitats to the east. Approximately 25% of this district involves agricultural land use (farming/ranching) and over 60% of the HD is privately owned. The HD is 38% public land comprised of USFS (24.2%), DNRC (8.6%), FWP (Blackleaf WMA; 2.8%), and other public ownership (2.0%). Habitat security is good and access is variable depending on ownership.

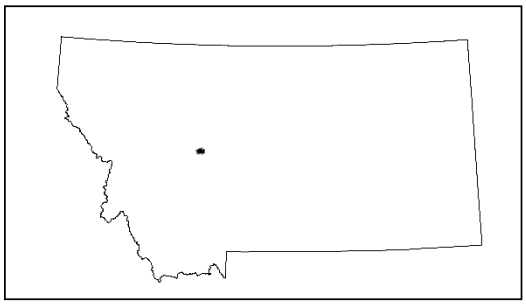
Special Management District History: Special management of mule deer in this HD began in 1988. Presently, the first two weeks of the general rifle hunting season is for antlered buck mule deer on a general deer license, followed by three weeks of antlered buck hunting by limited permit outside the National Forest boundary. Within the National Forest the season is antlered buck mule deer the entire season. Mule deer in this HD make long migrations from the mountains to winter ranges on the prairie edge. The limited permit portion of the season was imposed to address sportsmen and landowner concerns regarding the 'boom or bust' cycle of buck hunting and harvest as it occurred in the district. Years of light buck harvest were periodically followed by a year or two of heavy buck harvest, attributable to weather and snow conditions. Limited permit hunting has served to moderate fluctuations in mule deer buck harvest. There has not been great concern by hunters about the lack of age diversity or buck numbers, except the occasional year of heavy buck harvest. Buck numbers have quickly rebounded each time. Average post-season buck:doe ratios were 32:100 (range 19–48) from 1988–2020. In most years both objectives are met.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have ranged from no opportunity to a limited number of antlerless B licenses. When offered, antlerless B licenses are only valid outside the National Forest boundary.

Additional Information: There is public support for the opportunity to harvest an older mule deer in this HD. Access to private lands with the limited permits can be difficult, however, the permits are readily accepted and coveted by the hunting public.

Hunting Season
• Two-week rifle season for antlered bucks with a general deer license; followed by three-week rifle season for antlered bucks by limited permit quota outside the National Forest boundary • Six-week archery-only season for antlered buck mule deer by limited permit quota • Option for limited antlerless B licenses to address population goal for unit or game damage complaints; antlerless B licenses only valid outside National Forest boundary

Hunting District 455



Management Objectives:

- **Post season buck:doe ratio ≥ 20:100**
- **≥ 50% of bucks harvested are ≥ 4 point**

Description: Hunting District 455 is relatively small at 65 mi^2. The HD is within the Big Belt Mountains, consisting of the FWP owned Beartooth WMA and USFS lands on the north side of the Gates of the Mountains Wilderness. The HD is entirely in public ownership comprised of FWP (74.2%), USFS (23.3%), and other public lands (2.4%). Grassland, forest/woodland, and shrubland make up the majority of habitat types in this district. Wildfires are not uncommon in this district thus affecting habitat variability and security cover during the hunting season. Given public land ownership of this district, access is not an issue.

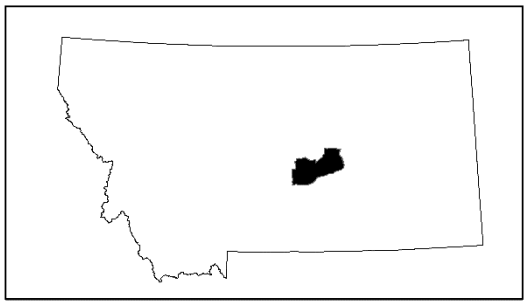
Special Management District History: Limited entry deer permits were implemented in 1992 for both mule and white-tailed deer. The small size of the HD, competition with elk and white-tailed deer, and habitat availability in the area are factors affecting mule deer management in this HD. Permit-only mule deer hunting for the entire general rifle and archery seasons has been driven by the overwhelming presence of elk and numbers of elk hunters in the district. The HD does not support large numbers of mule deer, so the opportunity for substantial harvests of older bucks is minimal. The stated objective of 50% of harvested bucks 4 point or greater is normally met on an annual basis. However, the objective ≥ 20 bucks:100 does post-season is met less frequently mainly due to lack of consistent post season survey data. Harvest success is generally high, with harvest being split between mule and white-tailed deer.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2013 included a limited number of either-sex permits. From 2014–2021, there have been no antlerless harvest opportunities in this HD, but the use of antlerless B licenses remains an option to address population management needs.

Additional Information: There has been considerable hunter interest for many years to manage for a higher number and an older age class of bucks in this district, despite difficult drawing odds.

Hunting Season
• Five-week general rifle season for antlered bucks, either species, by limited permit quota • Six-week archery-only season, antlered buck mule deer by limited permit quota • Option for limited antlerless B licenses to address population goal for unit

Hunting District 530



Management Objectives:

- **Post season buck:doe ratio ≥25:100**
- **Minimum 30% of harvested bucks ≥ 4.5 years old**

Description: Hunting District 530 is 2,049 mi^2 and is predominately rolling sagebrush grassland prairie with sparsely timbered hills along portions of its southern border with the Little Snowy Mountains in the northwest corner. Nearly 82% of the HD is privately owned. Public land includes BLM (9.6%), DNRC (6.5%), and other public ownership (1.9%). Habitat security is low and access is generally good.

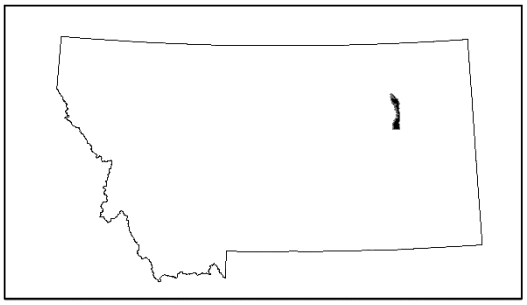
Special Management District History: Limited permit-only buck hunting began in 1987 following landowner and sportsmen dissatisfaction with post-season buck:doe ratios as low as 4:100. From 1987–2020, post-season ratios have averaged 34 bucks:100 does. Post-season buck:doe ratios have been collected every year since 1987, and the objective of 25 bucks:100 does has been met or exceeded in all but two years. In 2020 there were 33 bucks:100 does. In 2019, 65% of bucks taken from HD 530 and checked at hunter check stations were ≥ 4 years old compared to 30% observed in the other Prairie Breaks HDs in Region 5. From 2001–2020, 41% of aged adult bucks from HD 530 have been ≥ 4.5 years old.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have ranged from no opportunity on the general deer license to being valid on the general deer license; both scenarios had moderate antlerless B licenses available.

Additional Information: There is public support for the opportunity to harvest an older mule deer in this HD. Those hunters that remember what mule deer buck hunting was like prior to 1987 see the value in having this type of hunting regulation in a district with low habitat security and good access.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • Option for five-week general rifle season for antlerless mule deer with a general deer license • Option for six-week archery-only season for antlerless mule deer with a general deer license • Option for limited antlerless B licenses to address population goal for unit or game damage complaints

Hunting District 652



Management Objectives:

- **Post-season buck:doe ratio ≥40:100**
- **Minimum post-season population density of 3.0 observed per square mile**
- **Minimum 50% of harvested bucks ≥ 4.5 years old and minimum 30% of harvested bucks ≥ 5.5 years old**

Description: Hunting District 652 is 298 mi^2 and is relatively smaller than other HDs in eastern Montana. The HD runs south from the Fort Peck Dam Spillway, following the east shore of Fort Peck Reservoir. The habitat in this area is sagebrush/grassland in a badland setting. Sixty two percent of the HD is in public ownership comprised of BLM (28.8%), USFWS (28.3%), and DNRC (4.5%). Access is excellent; a majority of the HD is in public ownership with a large portion of the private lands enrolled in FWP's Block Management Program. Travel restrictions exist in the Charles M Russell National Wildlife Refuge portion of the HD.

Special Management District History: HD 652 has been regulated by limited permit buck harvest since 1987. Post-season buck:doe ratios averaged 72:100 between 1992–2020. Buck:doe ratios have ranged from 41 to 153 bucks:100 does from 2011–2020. The number of limited permits issued results in approximately 50% success rate, regardless of number of permits issued. HD 652 post-season surveys started in 1992 and the trend area has been surveyed every year except 1993 and 1996. Since 2004, 79% of the bucks harvested have been ≥4.5 years old and in all but three years, ≥30% (average of 53%) of the bucks have been ≥5.5 years old. Although the population density objectives are being met based on the LTA, the minimum post-season density objective has not been met in 50% of the last 20 years.

Antlerless Opportunities: Antlerless mule deer regulations from 2001–2021 have ranged from no opportunity to a limited number of antlerless B licenses.

Hunting Season
• Five-week general rifle season for antlered bucks by limited permit quota • Six-week archery-only season for antlered buck mule deer by limited permit quota • Option for limited antlerless B licenses to address population goal for unit or game damage complaints

MULE DEER MONITORING GUIDELINES

Montana has traditionally used aerial surveys as the primary means to monitor mule deer populations over time. The following aerial survey guidelines are designed to ensure that accurate data on size and composition of mule deer populations are collected in a consistent and coordinated manner among the major environmental/habitat types in Montana. Status and trend in these data and their relationship to important environmental factors represents the foundation of informed management decisions concerning the effects of hunter harvest.

However, and as previously described, given the difficulty in obtaining appropriate mule deer demographic data through traditional aerial trend area methods in some areas, alternative survey techniques may be employed as they are developed. The 2001 AHM document also differentiated aerial census and trend areas. However, the census areas have been changed to trend areas by eliminating the requirement to formally do three replicate total counts in the spring. A more complete description of survey and inventory protocols can be found in "Survey & Inventory Protocols for Big Game in Montana – Mule Deer (Montana Fish, Wildlife & Parks 2013).

TREND AREAS

In 2001, regional staff selected representative trend areas in their respective Regions (see selection criteria below), which have been updated to reflect changes since 2001 (Tables 3–7). Trend areas are designed to monitor the spatial variation in mule deer population dynamics and hunter opportunity that are both important to regional mule deer management objectives. Trend areas should be stratified among the different environments occupied by mule deer and among public and private lands offering different levels of hunter access.

On many trend areas, a post-season survey will be flown to monitor fawn:doe and buck:doe ratios. Observability of mule deer during the post-season varies considerably depending on environmental conditions. We recommend that a well-distributed classification sample be collected from the various habitats across the trend area. Differential distribution of bucks and does during post-season requires careful consideration by the local biologist in the sampling design. The minimum number of mule deer classified post-season should approach 50% of the number of mule deer seen during the previous spring survey, although this is not always achievable.

The focus of most post-season surveys is gathering classification data (i.e., buck:doe:fawn ratios) rather than total counts. However, biologists have found that on some areas they get better total counts post-season than in the spring, and in those areas total counts to monitor population trend are done post-season. Also, on some trend areas biologists found that it was very difficult to get adequate samples in the post-season flights, and some post-season flights have been eliminated since 2001.

Biologists might determine that mule deer populations on some trend areas are not representative of the entire HD. In this situation, the biologist may choose to use sub-units in the sampling design. Multiple, relatively small, fixed sub-units can be stratified across the entire HD to reflect variation in land ownership and hunting opportunity. Ideally, a required total sample of 240 does (to provide a 95% confidence interval) would be classified with accompanying fawns and bucks in a proportional allocation among the subunits. However, some trend areas understandably may not always be able to reach the latter sample size to obtain a high level of

confidence. Post-season buck:doe and fawn:doe ratios and spring fawn:adult ratios would be calculated from the pooled sample from sub-units across the entire HD.

In most cases, the best total counts are during the spring “green up window”, and timing is critical. Therefore, most trend areas are flown in the spring with full coverage to maximize the count and classification of mule deer. Some guidelines for identifying the appropriate timing of surveys and other details within each PMU are provided in the “Specific Guidelines for Important Environments” section below.

Establishing Size and Boundaries for Trend Areas

Selecting the size and boundaries of trend areas is critical to minimizing the potential for movement of mule deer in and out of the survey area during and between sampling periods. Mule deer display strong fidelity in their use of specific areas including those used during early spring. Populations that have been the subject of telemetry studies of distribution should receive priority in selection of trend areas. Different considerations influence the size and boundaries of survey areas among the major environments. Hunting access and land ownership should mirror, as much as possible, access and ownership in the rest of the HD when new trend areas are being considered in HDs where mule deer are not migratory.

Northwest Montane, Mountain Foothill, Prairie/Mountain Foothill, and Southern Mountains — In these mountain environments, the trend area should represent an ecologically complete unit of winter range occupied by a population of migratory mule deer. Boundaries at upper and lower elevations will vary from year to year, particularly during post-season surveys, depending on snow depth and mule deer distribution. During post-season and spring surveys, we recommend that aerial coverage extend or adjust to “runout” of mule deer at both high and low elevations. This will account for subtle differences in distribution between years and between bucks and does. Lateral boundaries should represent areas that are essentially devoid of mule deer during winter/spring and represent discontinuities between adjacent winter ranges. Biologists may opt to shift trend areas, occasionally to neighboring HDs, as habitats and/or regulations change, to more adequately capture mule deer population dynamics in their areas of management. Size of a trend area in mountain environments will vary in size from 10-50 mi² depending on the above parameters.

Prairie/Breaks — Mule deer occupying prairie or timbered breaks/environments primarily display resident or short-distant migration patterns. These populations are distributed at relatively low density across large expanses of habitat. Therefore, size of the survey area should approximate an area of 50-100 mi² to contain required sample sizes at population lows. When selecting a trend area, it is important to include a large piece of rugged terrain including springs, seeps or other moist sites in the central portion of the survey area. The perimeter should be situated in relatively flat terrain with some creek bottoms that may be used only during peak populations. This arrangement will not only minimize movement of mule deer in and out of the survey area; it will also provide improved detection of population increases and decreases based on differential use of these flatter areas. Inclusion of only rugged terrain in the survey area may indicate changes in population size of a much smaller magnitude than across the broader area.

Flight Patterns

Survey flight data is collected and entered into the Wildlife Information System that provides consistency in data collection and organization and allows for biologists and pilots to become

more efficient with flights on trend areas. This increased efficiency and consistency are due in large part to easily reviewable GPS track logs, waypoints and general information about the survey prior to conducting the annual survey themselves and consistent expectations as to which data should be collected.

The term full-coverage survey means to cover the entire survey area in as complete a manner as possible or necessary, regardless of terrain and cover characteristics. During each full-coverage survey of a trend area, the pilot/observer team should have a goal of counting and/or classifying the maximum number of mule deer possible in relation to the total number that may be present (depending on weather and flight conditions). An enthusiastic and somewhat competitive attitude among the pilot and observer will aid in providing a consistently high-quality data set through time. Optimum observability of mule deer and accurate sex and age classification coincide with time periods when mule deer are most active, usually within three hours after sunrise or within three hours before sunset.

Accurate counting and classification of sex and age classes is most efficient when the pilot presents the observer with a low-level, broadside view of all members of the group. Use of high-resolution digital cameras may be of value to aid in making or confirming classifications post flight. Classification is most difficult when the pilot approaches a fleeing mule deer group from behind and passes directly over the animals. Optimal positioning of the aircraft is more difficult with a fixed-wing aircraft in some habitats and can also be a problem on helicopter surveys in rugged, heavily timbered terrain. After a group is counted and classified, the aircraft should turn the group back toward the area already surveyed to avoid double counting. This is most important on areas with a high density of mule deer.

Some pilot/observer teams will enhance efficiency by dividing the counting and classification workload. Often the pilot can most easily tabulate total numbers in the group while the observer does the classifying. Ideally, post-season surveys are completed with either total snow cover or total bare ground as opposed to patchy snow conditions. Bare ground and the early green-up should prevail during spring surveys. However, by waiting for ideal conditions, the window of opportunity may be lost. Most important is to safely complete the survey in a consistent manner each year.

Helicopter — In mountain environments, helicopters should be used for most post-season and spring surveys on trend areas. However, if pilot and passenger safety is not compromised and data quality is not negatively impacted, a fixed-wing aircraft might be used. The ideal flight pattern is variable depending on conditions and topography but ideally the biologist should be given as thorough look at the pertinent landscape in as efficient and safe manner as possible for the pilot. For example, one option is for the pilot to slowly weave uphill through one aspect of a drainage so that the observer views that entire slope from the bottom to the drainage head. Then, the helicopter should cross to the top of the opposing aspect and weave slowly downhill and enter the bottom of the next drainage and repeat. Such a pattern is better than flying contours across drainages and will reduce the chances of double-counting groups of mule deer. Alternatively, in rugged, steep terrain it may be necessary to partition the survey area into segments including more than one drainage. Then each segment can be flown from top to bottom along contour lines before moving on to the next segment.

Fixed-wing — In prairie environments, small fixed-wing aircraft can be effectively used for post-season and spring surveys. For post-season surveys in timbered breaks, helicopters are recommended for accurate classification of bucks. Fixed-wing aircraft are preferred for spring surveys in timbered breaks because they provide a lower level of disturbance when counting

mule deer on open ridge tops adjacent to timbered areas. An ideal fixed-wing flight pattern over the gentle to moderate relief associated with prairie/breaks environments is to weave uphill through one aspect of the drainage to the drainage head and then weave downhill through the opposing aspect. In some areas of high relief terrain, it may be necessary to fly contours from bottom to top across the drainage in this segment. Care should be taken to avoid the higher probability of double-counting mule deer when using this method.

Sample Size

If trend areas are large enough (50-100 mi^2 for resident mule deer in prairie/breaks, 10-50 mi^2 to include ecologically complete winter range for migratory mule deer) in representative habitats, sample size should not be a problem. However, the survey area should include a minimum of 100 adult females and accompanying fawns and bucks during a population low. During post-season surveys on trend areas, the minimum number classified should approach 50% of the number of mule deer tabulated during the previous spring survey. A 95% confidence interval for ratios in a specific population may require up to 240 does classified with accompanying fawns and bucks, although understandably this number may not always be attainable.

SPECIFIC GUIDELINES FOR ENVIRONMENTS

Northwest Montane

In the northwest montane, west of the Continental Divide, a few trend areas have been selected to monitor mule deer populations (Table 3), although as previously described, due to the difficulty in aerially surveying this habitat, further considerations are ongoing related to alternative methods to obtaining representative mule deer demographic data.

Post-season Survey Time of Year: December 1–January 15. If surveys are conducted closer to January 15, expect that some bucks will have shed antlers possibly causing buck:doe ratios to be lower than they really are. Each trend area receives a classification sample flight.

Aircraft: Helicopter

Time of Day: In northwest montane forests, early morning and evening surveys are recommended to avoid the mid-day bedding period when mule deer use dense timbered cover.

Weather: Optimal is thin overcast skies producing flat, bright light and calm air on moderate-densely timbered winter ranges.

What to Record: Describe survey conditions such as cloud cover, temperature, wind, snow depth/cover, flight time, and mule deer behavior.

Location of mule deer groups by drainage and elevation or preferably a Global Positioning System (GPS) waypoint. For each group, record total number, number of does, number of fawns, number of yearling and older (adult) bucks; antler points by side if possible. From this can be computed: total mule deer observed, fawns:100 does, bucks:100 does and yearling recruitment.

Observations of other species (i.e., other ungulates and predators).

Data Storage: Download waypoints, track logs, and enter classification data into the Wildlife Information System.

Spring Survey Time of Year: March 15–April 30. Timing depends on phenology of early spring plant growth, which varies from year to year. During a relatively short time period, mule deer are more observable when using the first flush of green vegetation. As many flights as possible should be conducted during this narrow window and each trend area will receive one full coverage count/classification flight.

Aircraft: Helicopter

Time of Day: Early morning and evening surveys are recommended to avoid the mid-day bedding period when mule deer use dense timbered cover.

Weather: Optimal is thin overcast skies producing flat, bright light and calm air on moderate-densely timbered winter ranges.

What to Record: Describe survey conditions such as cloud cover, temperature, wind, flight time, and mule deer behavior.

Location of mule deer groups by drainage and elevation or preferably a GPS waypoint.

For each group, record total numbers, number of adults, number of fawns. From this can be computed: total mule deer observed, fawns:100 adults.

Observation of other species (other ungulates and predators).

Data Storage: Download waypoints, track logs, and enter classification data into the Wildlife Information System.

Mountain Foothill, Prairie/Mountain Foothill and Southern Mountains

In the mountain foothill, prairie/mountain foothill and southern mountain environments located east and west of the continental divide, trend areas have been selected to monitor variation in mule deer population dynamics (Tables 4, 5 & 6).

Post-season Survey Time of Year: December 10–January 15. Avoiding a 10-day period after the end of the hunting season provides an opportunity for mule deer to move onto winter ranges. If surveys are conducted closer to January 15, expect that some bucks will have shed antlers possibly causing buck:doe ratios to be lower than they really are. Each trend area receives a classification sample flight, and potentially a full coverage count if experience indicates full coverage counts are more effective in the post-season period.

Aircraft: Helicopter is preferred; however, many areas have been flown with a fixed-wing aircraft due to concerns about costs and/or availability of helicopters.

Time of Day: Optimal timing is within ~3 hours after sunrise and ~3 hours before sunset. Later or earlier survey work, especially via helicopter, may be completed, if weather allows.

Weather: Optimal is clear skies, minimal wind on open non-timbered winter ranges. Thin overcast skies producing flat, bright light, and calm air are optimal on moderately timbered winter ranges.

What to Record: Describe survey conditions such as cloud cover, temperature, wind, snow depth/cover, flight time, and mule deer behavior.

Location of mule deer groups by drainage and elevation or preferably a GPS waypoint.

For each group, record total number, number of does, number of fawns, number of yearling and older (adult) bucks; antler points by side if possible. From this can be computed: total mule deer observed, fawns:100 does, bucks:100 does and yearling recruitment.

Observations of other species (other ungulates and predators).

Data Storage: Download waypoints, track logs, and enter classification data into the Wildlife Information System.

Spring Survey Time of Year: March 15–April 30. Timing depends on phenology of early spring plant growth which varies from year to year. A relatively short time is available when mule deer are readily observable when using the first flush of green vegetation; after which groups scatter as mule deer begin using more timbered habitats at higher elevations. As many flights as possible should be conducted during this narrow window and each trend area will receive one full coverage count/classification flight.

Aircraft: Helicopter is preferred; however, many areas have been flown with a fixed-wing aircraft due to concerns about costs and/or availability of helicopters.

Time of Day: For fixed-wing aircraft, daylight until mule deer begin bedding down or depending upon ambient air temperature, evening flights can usually begin ~3 hours before sunset. Surveys completed outside of the early morning/late afternoon period may be optional if weather allows and especially if a helicopter is used.

Weather: Optimal is clear skies, minimal wind on open, non-timbered winter ranges. Thin overcast skies producing flat, bright light and calm air are optimal on moderately timbered winter ranges.

What to Record: Describe survey conditions, such as cloud cover, temperature, wind, flight time, and mule deer behavior.

Location of mule deer groups by drainage and elevation or preferably a GPS waypoint.

For each group, record total numbers, number of adults, number of fawns. From this can be computed: total mule deer observed, fawns:100 adults.

Observations of other species (other ungulates and predators).

Data Storage: Download waypoints, track logs, and enter classification data into the Wildlife Information System.

Prairie/Breaks

The Prairie/Breaks PMU is the largest in geographic size and also contains significant spatial and temporal variation in mule deer population dynamics and environmental characteristics. For these reasons, the number of trend areas in this habitat type is high compared to the other PMUs (Table 7).

Post-season Survey Time of Year: December 1–January 15. After hunting season and before antler shedding, each trend area receives a classification sample flight. However, if experience indicates full coverage counts are more effective in the post-season period than in the spring, one should complete the full-coverage survey.

Aircraft: Fixed-wing, with the exception that a helicopter may be necessary in the timbered breaks to accurately classify antlered bucks. (In most cases a fixed-wing aircraft is used in part because of the expenses associated with helicopter use rates).

Time of Day: Optimal timing is within ~3 hours after sunrise and ~3 hours before sunset. Later or earlier survey work, especially via helicopter, may be completed if weather allows.

Weather: Optimal is clear skies and minimal wind.

What to Record: Describe survey conditions such as cloud cover, temperature, wind, snow depth/coverage, flight time, and mule deer behavior.

Location of mule deer groups by drainage and elevation or preferably a GPS waypoint.

For each group, record total number, number of does, number of fawns, number of yearling and older (adult) bucks; antler points by side if desired. From this can be computed: total mule deer observed, fawns:100 does, bucks:100 does and yearling recruitment.

Observation of other species (other ungulates and predators).

Data Storage: Download waypoints, track logs and enter classification data into the Wildlife Information System.

Spring Survey Time of Year: March 15–April 30. Timing depends on phenology of early spring plant growth which varies from year to year. A relatively short time period is available when mule deer are readily observable when using the first flush of green vegetation, after which groups scatter as mule deer begin using more timbered habitats. As many trend area flights as possible should be conducted during this narrow window, and each area will receive one full coverage count/classification flight unless data indicates that a full coverage count is more effective post-season.

Aircraft:	Fixed-wing, except that a helicopter is advantageous in some habitat types.
Time of Day:	For fixed-wing aircraft, daylight until mule deer begin bedding down or depending upon ambient air temperature, evening flights can usually begin ~3 hours before sunset. Surveys completed outside of the early morning/late afternoon period may be optional, if weather allows, and especially if a helicopter is used.
Weather:	Optimal is clear skies, minimal wind, and cool temperatures.
What to Record:	Describe survey conditions such as cloud cover, temperature, wind, flight time, and mule deer behavior. Location of mule deer groups by drainages and elevation or preferably a GPS waypoint. For each group, record total numbers, number of adults, number of fawns. From this can be computed: total mule deer observed, fawns:100 adults. Observation of other species (other ungulates and predators).
Data Storage:	Download waypoints, track logs and enter classification data into the Wildlife Information System.

CHRONIC WASTING DISEASE AND MULE DEER MANAGEMENT

This section gives a broad overview of CWD and subsequent management guidance in the context of AHM. Some of the following is direct and summarized information taken from the Montana Chronic Wasting Disease Management Plan (Montanan Fish, Wildlife & Parks 2020). For further detailed information refer to the Montana CWD Management Plan.

Biology, Distribution, and Population Impacts

Chronic Wasting Disease is a fatal neurologic disease of elk, deer, moose, and caribou for which there is no known cure. It belongs to a group of diseases called transmissible spongiform encephalopathies (TSEs), a group which also includes bovine spongiform encephalopathy ("mad cow disease") in cattle, scrapie in sheep, and Creutzfeldt-Jakob disease in humans. The causative agent in TSEs is an abnormally folded prion protein (referred to as a "prion") that causes normal cellular prion proteins found in the body to mis-fold into disease-causing forms (Prusiner 1998). Mis-folded prions accumulate in infected animals and cause neuronal cell death that eventually leads to fatal nerve and brain damage. CWD prions have been detected throughout the body of infected individuals, including the brain and central nervous system (Williams 2005), tonsils and lymph nodes (Sigurdson et al. 1999, O'Rourke et al. 2003), saliva and blood (Mathiason et al. 2006, Haley et al. 2011), the intestinal tract, bladder, urine, and feces (Tamgüney et al. 2009), muscle (Angers et al. 2006), fat (Race et al. 2009), antler velvet (Angers et al. 2009), and semen (Kramm et al. 2019).

Chronic Wasting Disease can be transmitted through animal-to-animal contact, in-utero from mother to offspring (Selariu et al. 2015), and through contact with a prion-contaminated environment, such as grass and soil. Infected animals shed prions in saliva, feces, and urine during most of their infection and via bodily tissues and fluids upon death. These prions may remain infectious in the environment for at least 2 years (Miller et al. 2004). CWD has an average incubation period from infection to clinical signs of approximately 16 months, and the clinical phase may last an additional 4–9 months, culminating in death (Williams and Miller 2002, Williams et al. 2002, Tamgüney et al. 2009). There are no documented recoveries from infection.

As of adoption of this AHM plan, CWD has been detected in captive or free-ranging wildlife populations in 26 US states, the Canadian provinces of Alberta and Saskatchewan, as well as Norway, Sweden, Finland and South Korea. In October 2017, CWD was first detected in free-ranging deer in Montana. It was detected in captive game farms in Montana in 1999 and again in 2020. Many US states and Canadian provinces have documented the gradual spread of CWD despite attempts at managing it.

Where CWD has been detected in wild deer populations, mortality rates have been variable. Documented CWD-related, herd-level declines in mule deer include a 21% annual decline in Wyoming (at 21–27% CWD prevalence; DeVivo 2015, DeVivo et al. 2017) and a 45% decline in Colorado (from 1987–2007 given prevalence of up to 41% in males and 20% in females; Miller et al. 2008). Among white-tailed deer in Wyoming, Edmunds et al. (2016) found a 10% annual decline in population size where prevalence was 33%, and a corresponding decline in buck age structure. While uncertainty remains over the size and extent of CWD-associated impacts, high prevalence and increased spatial spread of the disease are likely to correspond to population-level declines, especially if left unchecked.

Management Tools and Evidence for Their Efficacy

Once CWD is present in a wild population, it is extremely difficult, if not impossible, to eliminate. New York may be the only state to have eliminated a CWD outbreak after its detection by responding aggressively to an apparently early and small outbreak (Miller and Fischer 2016). Typically, CWD is discovered after it has been established for some time. The approximately 16-month incubation period, during much of which an animal is infectious and shedding potentially long-surviving prions into the environment, makes it difficult to detect an emerging epidemic before it is well established.

There are currently no effective treatments or vaccines for CWD. Prevention is critical to the control of CWD over large landscapes. Preventative tools include restricting the transport of carcasses from CWD-infected areas or states, banning the transport or translocation of wild cervids, and requiring the responsible disposal (e.g. incineration or disposal in certified landfills) of carcasses from infected regions. Many states also restrict the baiting and feeding of wild cervids to help limit artificial aggregations that might facilitate more rapid disease transmission. In addition, some states and provinces have moved to regulate the use of cervid lures to prevent hunters from inadvertently spreading CWD-contaminated materials on the landscape.

Despite the low likelihood of eliminating CWD from a wild population, to date, many states have attempted management options such as population density reduction, disease “hot-spot” culling, and reducing large aggregations of cervids while trying to slow or control the disease’s spread and prevalence. Contact rate, and hence transmission rate, is often thought to be positively related to population density, however, due to cervid social behavior and the potential for transmission of CWD via the environment, this may not always be the case (Storm et al. 2013, Potapov et al. 2013). Thus, population density reductions alone may have only modest impacts on maintaining or reducing CWD prevalence.

In Montana, as well as other states, there has been little public support for large-scale population reductions. “Hot-spot” culling, the strategic removal of animals from a local area, uses public hunting and/or agency staff to dramatically reduce cervids in a restricted portion of a population or geographic region centered around known CWD infections. The goal is to remove a cluster of infected animals and thereby reduce prevalence in the larger population. Reducing large groups of deer and elk either by eliminating food attractants (e.g. fencing haystacks, removing mineral licks), changing habitat structure, or through hunting pressure may also help reduce contact rates and transmission.

Several computer-simulation studies predict that increasing male harvest and reducing male to female sex ratios in cervids may be one of the most effective tools for reducing CWD prevalence (Jennelle et al. 2014, Potapov et al. 2016). In most study systems, male deer are two to three times more likely to be infected than females (Miller and Conner 2005, Heisey et al. 2010, DeVivo 2015, Samuel and Storm 2016; but see Edmunds et al. 2016), presumably due to behavioral differences. Data collected in Montana (2017–2019) indicated that among mule deer, adult males had 3.8 times the risk of infection as adult females (Montana Fish, Wildlife & Parks 2021). Targeting males may thus be an efficient way to reduce overall transmission. Furthermore, it has been suggested that increasing male harvest during or after the breeding season may remove infected males at higher rates than during the early fall and may be another tool for reducing prevalence (WAFWA 2017).

Male (antlered buck) harvest, targeted hot-spot removal, and reducing artificial aggregations of deer have been officially recommended by the Western Association of Fish and Wildlife

Agencies (2017) for standardized implementation and evaluation measures for CWD management. Where possible, western states and provinces have been asked to implement these tools and evaluate their ability to reduce CWD prevalence using a before-after-control-impact experimental design and standardized monitoring guidelines.

Management of CWD in the Context of AHM

The Montana Chronic Wasting Disease Management Plan (2020) or most current version/CWD management direction, will serve as the guiding principles and strategies in management of the disease within affected areas. Regardless of prevalence, any detection of CWD needs to be addressed through active management. Given the implications of CWD on both white-tailed and mule deer, efforts to understand prevalence and manage the disease within a single species or within a combination of both species will be necessary.

Mule deer population size and demographic triggers within PMU's will continue to guide mule deer management (e.g., hunting regulation packages) in CWD positive areas. However, managing for CWD, short- and long-term, may differ or even conflict with AHM prescriptions in some circumstances. Due to the long-term impacts CWD will have on mule deer populations, CWD management may take precedence over AHM guidelines to conserve the affected population (and/or adjacent populations) long term. This may also include revising population and demographic objectives for a given HD or PMU, pending disease prevalence and distribution.

CWD prevalence rates within CWD positive areas (i.e. CWD management zone) may influence the need to develop additional liberalized season types to meet the overall CWD management objective. When CWD has been detected, all or a portion of the HD should begin implementing CWD management actions. Given prevention is critical to the control of CWD over large landscapes, this shall not preclude managers from applying CWD management in broader fashion when migration corridors, seasonal ranges, or other evidence suggests interchange.

Implemented management actions over a defined time may consist of one or more of the following alternatives:

- Increasing harvest of antlered deer to include post rut hunting options
- Hot spot culling/targeted removal in focused areas around CWD detections
- Carcass transport restrictions and carcass disposal requirements
- Reducing cervid aggregations within the management zone by removing or fencing highly localized attractants, hazing, dispersal hunts or by other means
- Decreasing overall deer densities
- Other alternatives showing potential for decreasing CWD prevalence and/or spread

Note: When using CWD management alternatives, demographic objectives such as population size relative to LTA, buck:doe ratios and buck harvest may be re-defined for specific areas HDs or populations.

To improve our understanding of management action effects on CWD prevalence and/or distribution, short- or long-term CWD management treatment types may be designed with an experimental approach. As previously described, experimental before-after-control efforts will further refine the collective knowledge base and aid in standardizing monitoring guidelines for CWD management for western states and Canadian provinces (WAFWA 2017).

Special buck management areas (limited permits, unlimited permits, shortened seasons, etc.) pose additional issues for disease management if CWD is detected in such an area. It is known that older bucks are more likely to become infected with and spread CWD. Instituting a special CWD hunt to determine prevalence and distribution and any long-term change in management in these areas (i.e., liberalized buck harvest opportunity) will be met with some public opposition. However, if CWD is detected in a special buck management area, it is just as important, if not more important, to institute management action due to the increased likelihood of older bucks acting as vectors within the immediate area and beyond. In such instances, any potential CWD management hunt would be managed in cooperation with current (and perhaps future) permit holders (i.e., CWD sample submission, timing of special hunt, future changes in management direction, etc.). It will be important to increase public education and outreach regarding the risks involved with an unmanaged CWD-infected population.

Preemptive management in HDs with limited buck permits adjacent to CWD positive areas may also take place. Depending on distribution of CWD detections and deer movements between HDs, proposing these special buck management areas move into an antlered only or either-sex season on a general deer license will be evaluated.

LITERATURE CITED

Angers, R. C., S. R. Browning, T. S. Seward, C. J. Sigurdson, M. W. Miller, E. A. Hoover, and G. C. Telling. 2006. Prions in skeletal muscles of deer with chronic wasting disease. Science 311:1117–1117.

Angers, R. C., T. S. Seward, D. Napier, M. Green, E. Hoover, T. Spraker, K. O'Rourke, A. Balachandran, and G. C. Telling. 2009. Chronic wasting disease prions in elk antler velvet. Emerging Infectious Diseases 15:696–703.

DeVivo, M. T. 2015. Chronic wasting disease ecology and epidemiology of mule deer in Wyoming. Dissertation, University of Wyoming, Laramie, USA.

DeVivo, M. T., D. R. Edmunds, M. J. Kauffman, B. A. Schumaker, J. Binfet, T. J. Kreeger, B. J. Richards, H. M. Schätzl, and T. E. Cornish. 2017. Endemic chronic wasting disease causes mule deer population decline in Wyoming. PLoS ONE 12(10):e0186512.

DeCesare, N., T. Hayes, C. Peterson, C. Anton, D. Messmer, T. Chilton-Radandt, B. Lonner, E. Lula, T. Thier, C. Bishop, and M. Mitchell. 2020. Integrating statewide research and monitoring data for mule deer in Montana. 2020 Annual Report, Federal Aid in Wildlife Restoration Grant W-167-R.

Edmunds, D., M. Kauffman, B. Schumaker, F. Lindzey, W. Cook, T. Kreeger, R. Grogan, and T. Cornish. 2016. Chronic Wasting Disease Drives Population Decline of White-Tailed Deer. PLoS ONE 11(8):e0161127.

Haley, N. J., C. K. Mathiason, S. Carver, M. Zabel, G. C. Telling, and E. A. Hoover. 2011. Detection of chronic wasting disease prions in salivary, urinary, and intestinal tissues of deer: potential mechanisms of prion shedding and transmission. Journal of Virology 85:6309–6318.

Hayden, J., G. Ardt, M. Fleming, T. W. Keegan, J. Peek, T. O. Smith, and A. Wood. 2008. Habitat guidelines for mule deer: Northern Forest Ecoregion. Mule Deer Working Group, Western Association of Fish and Wildlife Agencies.

Heisey, D. M., E. E. Osnas, P. C. Cross, D. O. Joly, J. A. Langenberg, and M. W. Miller. 2010. Linking process to pattern: estimating spatiotemporal dynamics of a wildlife epidemic from cross-sectional data. Ecological Monographs 80:221–240.

Jennelle, C. S., V. Henaux, G. Wasserberg, B. Thiagarajan, R. E. Rolley, and M. D. Samuel. 2014. Transmission of chronic wasting disease in Wisconsin white-tailed deer: implications for disease spread and management. PloS ONE 9(3):e91043.

Kramm, C., R. Gomez-Gutierrez, C. Soto, G. Telling, T. Nichols and R. Morales. 2019. In vitro detection of chronic wasting disease (CWD) prions in semen and reproductive tissues of white-tailed deer bucks (Odocoileus virginianus). PLoS ONE 14(12):e0226560.

Kayes, L. J., P. D. Anderson, and K. J. Puettmann. 2010. Vegetation succession among and within structural layers following wildfire in managed forests. Journal of Vegetation Science 21:233-247.

Lewis, M. S., Q. Kujala, J. Gude, and Z. King. 2011. Selected results from a 2011 resident mule deer hunter preference survey conducted by FWP. Montana Fish, Wildlife & Parks HD Unit Research Summary No. 32. Montana Fish, Wildlife & Parks, Helena, MT, USA.

Mathiason, C. K., J. G. Powers, S. J. Dahmes, D. A. Osborn, K. V. Miller, R. J. Warren, G. L. Mason, S. A. Hays, J. Hayes-Klug, D. M. Seelig, and M. A. Wild. 2006. Infectious prions in the saliva and blood of deer with chronic wasting disease. Science 314:133–136.

Miller, M. W., E. S. Williams, N. T. Hobbs, and L. L. Wolfe. 2004. Environmental Sources of Prion Transmission in Mule Deer. Emerging Infectious Diseases 10:1003–1006.

Miller, M. W., and M. M. Conner. 2005. Epidemiology of chronic wasting disease in free-ranging mule deer: spatial, temporal, and demographic influences on observed prevalence patterns. Journal of Wildlife Diseases 41:275–290.

Miller, M. W., H. M. Swanson, L. L. Wolfe, F. G. Quartarone, S. L. Huwer, C. H. Southwick, and P. M. Lukacs. 2008. Lions and prions and deer demise. PLoS ONE 3(12):e4019.

Miller, M. W., and J. R. Fischer. 2016. The First Five (or More) Decades of Chronic Wasting Disease: Lessons for the Five Decades to Come. Transactions of the North American Wildlife and Natural Resources Conference 81: in press.

Montana Fish, Wildlife & Parks. 1988. Deer Preference Survey. Montana Fish, Wildlife and Parks, Helena, MT, USA.

Montana Fish, Wildlife & Parks. 1995. Deer Hunting Preferences Survey. Montana Fish, Wildlife and Parks, Helena, MT, USA.

Montana Fish, Wildlife & Parks. 2001. Adaptive harvest management: mule deer population objectives, hunting regulation strategies, special management districts, monitoring programs, population modeling, and deer management policies. Montana Department of Fish, Wildlife & Parks, Helena, USA.

Montana Fish, Wildlife & Parks. 2013. Survey & Inventory Protocols for Big Game in Montana – Mule Deer. Montana Department of Fish, Wildlife & Parks, Helena, MT, USA.

Montana Fish, Wildlife & Parks. 2021. Montana Fish, Wildlife & Parks 2020 Chronic Wasting Disease Surveillance and Monitoring Report. Federal Aid in Wildlife Restoration Grant W-171-M Annual report. Helena, MT, USA.

Montana Fish, Wildlife & Parks. 2020. Montana Chronic Wasting Disease Management Plan. Helena, MT, USA.

Montana Fish, Wildlife & Parks. 2021. Habitat Montana, January 2021. Report to the 67th Montana Legislature. Helena, MT, USA.

Montana Fish, Wildlife & Parks Commission. 1998. Deer Management Policy. Helena, MT, USA.

Newell, J. A. and E. Meredith. 2018. The Effects of Special Mule Deer Buck Regulations on Mule Deer Populations and Harvest, 2018. MT Fish, Wildlife & Parks. Helena, MT, USA.

O'Rourke, K. I., D. Zhuang, A. Lyda, G. Gomez, E. S. Williams, W. Tuo, and M. W. Miller. 2003. Abundant PrPCWD in tonsil from mule deer with preclinical chronic wasting disease. Journal of Veterinary Diagnostic Investigation 15:320–323.

Potapov, A., E. Merrill, M. Pybus, D. Coltman, and M. A. Lewis. 2013. Chronic wasting disease: Possible transmission mechanisms in deer. Ecological Modelling 250:244–257.

Potapov, A., E. Merrill, M. Pybus, and M. A. Lewis. 2016. Chronic wasting disease: Transmission mechanisms and the possibility of harvest management. PloS ONE 11(3):e0151039.

Prusiner, S.B. 1998. Prions. Proceedings of the National Academy of Sciences, 95:13363–13383.

Race, B., K. Meade-White, R. Race, and B. Chesebro. 2009. Prion infectivity in fat of deer with chronic wasting disease. Journal of Virology 83:9608–9610.

Samuel, M.D. and D. J. Storm. 2016. Chronic wasting disease in white-tailed deer: infection, mortality, and implications for heterogeneous transmission. Ecology 97:3195–3205.

Selariu, A., J. G. Powers, A. Nalls, M. Brandhuber, A. Mayfield, S. Fullaway, C. A. Wyckoff, W. Goldmann, M. M. Zabel, M. A. Wild, and E. A. Hoover. 2015. In utero transmission and tissue distribution of chronic wasting disease-associated prions in free-ranging Rocky Mountain elk. The Journal of General Virology 96:3444–3455.

Sigurdson, C.J., E. S. Williams, M. W. Miller, T. R. Spraker, K. I. O'Rourke, and E. A. Hoover. 1999. Oral transmission and early lymphoid tropism of chronic wasting: disease PrPres in mule deer fawns (Odocoileus hemionus). Journal of General Virology 80:2757–2764.

Storm, D.J., M. D. Samuel, R. E. Rolley, P. Shelton, N. S. Keuler, B. J. Richards, and T. R. Van Deelen. 2013. Deer density and disease prevalence influence transmission of chronic wasting disease in white-tailed deer. Ecosphere 4:1–14.

Tamgüney, G., M. W. Miller, L. L. Wolfe, T. M. Sirochman, D. V. Glidden, C. Palmer, A. Lemus, S. J. DeArmond, and S. B. Prusiner. 2009. Asymptomatic deer excrete infectious prions in faeces. Nature 461:529–532.

Williams, E.S. 2005. Chronic wasting disease. Veterinary Pathology 42:530–549.

Williams, E.S. and M. W. Miller. 2002. Chronic wasting disease in deer and elk in North America. Revue Scientifique et Technique (International Office of Epizootics) 21:305–316.

Williams, E.S., M. W. Miller, T. J. Kreeger, R. H. Kahn, and E. T. Thorne. 2002. Chronic wasting disease of deer and elk: a review with recommendations for management. The Journal of Wildlife Management 66:551–563.

Western Association of Fish and Wildlife Agencies. 2017. Recommendations for Adaptive Management of Chronic Wasting Disease in the West. WAFWA Wildlife Health Committee and Mule Deer Working Group. Edmonton, Canada and Fort Collins, USA.

DEFINITIONS

ANTLERED BUCK: A deer with an antler or antlers at least four inches in length measured from the top of the skull.

ANTLERLESS: A deer without antlers or with antlers less than four inches in length measured from the top of the skull.

ARCHERY ONLY SEASON: The six-week season beginning the first Saturday in September and ending the Sunday prior to the general rifle season opening day, wherein only archery equipment as defined in the deer/elk/antelope regulations may be used.

BUCK:DOE RATIO: The number of adult bucks and adult does classified during post-season surveys expressed as a ratio of number adult bucks:100 adult does. Adults are considered all deer classified as ≥ yearlings.

GENERAL DEER LICENSE: Hunters may purchase one general deer license each year. The license is valid for the species time-period and sex of deer applicable to the season type (rifle or archery-only). The archery-only season also requires a prerequisite of purchasing a bow and arrow license.

GENERAL RIFLE SEASON: The five-week (37 day) season ending on the Sunday after Thanksgiving wherein any legal weapon may be used to harvest a deer.

DEER B LICENSE: A class of license usually designated as valid for antlerless deer (either mule deer or whitetail or both). A hunter may hold more than one B license and it is usually held as an additional license to the general deer license.

EITHER SPECIES: Mule deer or white-tailed deer.

FOUR POINT BUCK: Any deer having at least one antler with four or more points not counting the brow point or tine. A point is an antler projection that is at least one-inch long. Hunter harvest survey statistics record all points of an antler. Therefore, a buck with four points on one antler and a brow tine will be recorded as having five points in the hunter harvest survey statistics.

FWP GAME DAMAGE POLICY: A policy which describes those actions taken by FWP in response to a complaint of game damage by a landowner or property owner (Appendix 1).

HUNTER HARVEST SURVEY STATISTICS: A survey (typically via telephone) of purchasers of Montana hunting licenses (resident and nonresident), conducted by FWP on an annual basis. Questions are designed to determine sex and age composition of the harvest, total number of animals harvested, numbers of hunters afield, number of days of hunting recreation provided, hunter success, and distribution of the harvest by HD or region during the hunting season.

HUNTING OPPORTUNITY: A combination of circumstances and options that makes the experience of hunting readily available. Opportunity is commensurate with the ability of an individual to participate and to choose situations that are personally rewarding.

LONG TERM (at least 10 years of data): Some survey locations have been monitored for a period of ten years or more, while others have shorter data sets. The intent of long term is to

define a range in population size that corresponds to expected variation in numbers of deer. Optimum population size in relation to habitat capability and landowner tolerance can then be determined.

MULTIPLE B LICENSES: A hunter may hold (purchase) more than one B license in a license year.

OVER-THE-COUNTER LICENSES: B licenses (may be limited or not limited in number) that can be purchased from a license agent or FWP without a drawing.

POPULATION MANAGEMENT UNIT: A group of HDs with similar environments and deer population characteristics.

POST-SEASON SURVEY: Refers to a survey conducted after the hunting season and before deer shed their antlers (December – early January).

RECRUITMENT: Fawns that survive the first year and enter the adult segment of the population; expressed as the ratio of fawns per 100 adults observed in spring (March and April).

APPENDIX 1. GAME DAMAGE POLICY

12.9.802 GAME DAMAGE

(1) By law, the Department of Fish, Wildlife and Parks is required to respond to all big game damage complaints. General hunting seasons are the primary tool to deal with animals causing or having the potential to cause game damage. Landowners who allow public hunting and do not impose restrictions that significantly reduce public hunting qualify for game damage assistance.

(2) The department investigates damage complaints and arranges to study the situation as soon as possible, and within 48 hours of the filing of the complaint. If the department person who received the complaint is unable to respond within 48 hours, he will immediately refer the complaint to the nearest department employee who can respond within a 48-hour period. Exceptions may be made if complainant is agreeable to a longer waiting period.

(3) The department investigates all damage complaints under this policy with the exception of (4). A phone call or on-site visit constitutes an immediate response under this provision.

(4) Damage caused by nongame, furbearing, or federally listed threatened and endangered species is not covered by this policy,but is addressed on a case-by-case basis.

(5) In response to damage complaints qualifying for assistance under 87-1-225 , MCA, and ARM 12.9.803, a regional supervisor may address the problem in the following ways:

(a) by herding as a temporary measure;

(b) by employing a variety of animal dispersal methods, such as airplanes, snowmobiles, cracker shells, and scareguns;

(c) by using repellents as temporary solutions;

(d) by using fencing options if the problem is chronic and involves haystacks and other stored crops;

(e) by authorizing kill permits;

(f) the department, through the regional supervisor or designated staff, has the discretion to issue supplemental game damage licenses for antlerless animals to hunters as an alternative to a kill permit being issued to a landowner. Supplemental game damage licenses administrative procedures are outlined in ARM 12.9.805;

(g) damage hunts may be used to address site-specific damage problems in accordance with ARM 12.9.804;

(h) netting or mechanical devices may be used to reduce tree damage; and

(i) archery, shotgun, muzzle loader weapons, or other weapons may be used as an alternative hunting method when rifle hunting poses a threat to the safety and welfare of persons or property.

(6) Assistance may be denied or discontinued to a landowner who:

(a) creates or further contributes to game damage problems by not providing sufficient public hunting to aid in reduction of game populations;

(b) imposes other restrictions which prevent adequate harvests; or

(c) refuses reasonable suggestions, actions or remedies offered by the department. The decision to deny or terminate assistance will be made by the regional supervisor. Denial or discontinuance of assistance will be documented with the reasons, history and other pertinent information used to make that decision. A copy of the written decision will be provided to the landowner. The written decision will explain appeal rights.

(7) A landowner may appeal the denial or discontinuance of assistance to the director of the department. The appeal must be in writing and must contain specific reasons why the regional supervisor's decision is felt to be erroneous. The appeal must be filed within ten days following receipt of a denial or discontinuance determination from the regional supervisor.

(a) The director of the department will review the information used by the regional supervisor in making the initial determination and the reasons cited by the landowner for appealing the

decision. At the director's discretion, the commission may be asked to review the appeal and make recommendations for the decision. Following the review, a final decision will be rendered by the director.

History: 87-1-225, MCA; IMP, 87-1-225, MCA; NEW, 1991 MAR p. 815, Eff. 5/31/91; AMD, 2002 MAR p. 1306, Eff. 4/26/02; AMD, 2006 MAR p. 1867, Eff. 7/28/06

12.9.803 PUBLIC HUNTING ELIGIBILITY REQUIREMENT

(1) To qualify for game damage assistance in accordance with 87-1-225 , MCA, a landowner must allow public hunting or not significantly reduce public hunting through imposed restrictions during established hunting seasons, including the general big game season. The department shall make determinations of eligibility based on the criteria set out in this rule. For eligibility, public hunting must be allowed at levels and in ways sufficient to effectively aid in management of area game populations. Restrictions that may significantly restrict public hunting include:

(a) species or sex of animals hunters are allowed to hunt;

(b) portion of land open to hunting;

(c) time period land is open to hunting;

(d) fees charged; or

(e) other restrictions that render harvestable animals inaccessible.

(2) The department may provide game damage assistance when unique or special circumstances render public hunting inappropriate.

History: 87-1-225, MCA; IMP, 87-1-225, MCA; NEW, 2006 MAR p. 1867, Eff. 7/28/06

12.9.804 GAME DAMAGE HUNTS

(1) Damage hunts are carried out according to the following policies and procedures:

(a) during the season-setting process, the department requests that the commission tentatively approve a specified number of antlerless deer, antlerless elk, and doe/fawn antelope licenses for potential game damage occurring between August 15 and February 15; and

(b) if the regional supervisor determines that a damage hunt is necessary before, during, or after the general hunting season, the regional supervisor must obtain approval of the commissioner in whose district the game damage hunt is proposed prior to implementing the hunt. If the commissioner is not available, then the regional supervisor must obtain approval from the chair of the commission or, in the chair's absence, any other commissioner.

(2) The following conditions apply to game damage hunts:

(a) damage hunts may only occur between August 15 and February 15;

(b) damage hunts may be authorized when there are enough animals involved on the landowner's property to justify the use of public hunting, but numbers of animals and size of affected area does not qualify for implementation of a management hunt, as outlined in ARM 12.9.1101;

(c) damage hunts may be authorized when hunting will occur only on property where public hunting during the general season qualifies the property for game damage assistance under 87-1-225, MCA, and ARM 12.9.803 and on approved adjacent or nearby legally-accessible state or federal land;

(d) damage hunts may be authorized when the game damage is a recurring problem and animals causing the problem are normally unavailable during the general hunting season;

(e) a game damage hunt roster must be established in accordance with ARM 12.9.804A for use in identifying some or all of the hunters eligible to participate in game damage hunts. Eligible hunters may be identified through the game damage hunt roster, or the department may identify eligible hunters through other established means of hunter selection, including first-come, first-served advertised opportunities, unsuccessful special license or permit applicant lists, or lists of names supplied by landowners;

(f) if the department determines that it may be effective in helping achieve the objectives of the hunt, the department may request a list of names supplied by a landowner to use in addition to selecting hunters from the hunt roster or other established means of hunter selection;

(g) if the department chooses to use a list of names supplied by a landowner, no more than 25% of the total number of hunters authorized to participate in the hunt may come from the list;

(h) unless stated otherwise, participants in a damage hunt shall possess a valid unused license, permit, or damage hunt license or permit for the species being hunted;

(i) a person who is contacted by the department for the purpose of a damage hunt may waive the opportunity to participate, but may not be considered again until all other interested persons have been contacted;

(j) any weapons restrictions or area closures that apply during general hunting seasons to areas included in game damage hunts will also apply to hunting conducted during game damage hunts in those same areas;

(k) damage hunts may include the harvest of male and female game animals; and

(l) if harvest of antlered animals is authorized, lists of names supplied by landowners shall not be an authorized means of hunter selection.

History: 87-1-225, MCA; IMP, 87-1-225, MCA; NEW, 2006 MAR p. 1867, Eff. 7/28/06; AMD, 2015 MAR p. 2138, Eff. 12/11/15.

12.9.804A GAME DAMAGE HUNT ROSTER

(1) A game damage hunt roster will be used to provide a list of some or all of the hunters available to participate in game damage hunts and management hunts, according to the following procedures:

(a) hunters interested in participating in game damage hunts and management hunts will apply through the department web site between dates specified by the department annually. Hunters without internet access may apply at any department regional or Helena office. A roster will be established through a computerized random selection of applicant names, with roster results being made available online by a date specified by the department annually. If necessary, the department may establish additional sign-up periods;

(b) hunters may apply only for one antelope hunting district, one deer hunting district, and one elk hunting district;

(c) resident and nonresident hunters must possess a valid unused antelope, deer, or elk license or permit specific to the species being hunted to participate in a game damage hunt or management hunt; and

(d) nonresident hunters who possess a valid unused antelope, deer, or elk license may comprise up to 10% of the total game damage hunt roster pool of hunters for a specific game damage hunt or management hunt.

(2) If sufficient numbers of hunters to participate in a game damage hunt or management hunt for a hunting district cannot be identified from that district's game damage hunt roster, hunters on the roster from an adjacent hunting district may be selected.

(3) The department may also identify eligible hunters through other established means of hunter selection, including first-come, first-served advertised opportunities, unsuccessful special license or permit applicant lists, or lists of names supplied by landowners.

History: 87-1-225, MCA; IMP, 87-1-225, MCA; NEW, 2006 MAR p. 1867, Eff. 7/28/06; AMD, 2016 MAR p. 138, Eff. 12/11/15

12.9.805 SUPPLEMENTAL GAME DAMAGE LICENSES

(1) To assist landowners who qualify for game damage assistance under the provisions of 87-1-225, MCA, the department, through the regional supervisor or designated staff, has the discretion to issue supplemental game damage licenses for antlerless animals to hunters as an alternative to a kill permit being issued to a landowner. Criteria used to determine when to issue a supplemental game damage license will include, but are not limited to, the following:

(a) the number of animals to be killed does not exceed 12;

(b) the animals causing the damage are present on the property during legal hunting hours;

(c) the circumstances make a game damage hunt under ARM 12.9.801 impractical;

(d) hunting is likely to be an effective way to remove animals causing damage;

(e) damage to be addressed occurs between August 15 and February 15, in accordance with ARM 12.9.801(1);

(f) each hunter will have sufficient opportunity to utilize licenses; and

(g) proposed harvest is consistent with regional wildlife management objectives.

(2) The department will specify the number of licenses to be issued, the species to be hunted, the time period in which the license may be lawfully used, and the property where the licenses may be used. The time period for which a supplemental game damage license is issued may be extended by the department. If continued damage requires harvest of additional animals, the department may issue additional supplemental game damage licenses upon approval by the regional supervisor.

(3) When the department authorizes the use of a supplemental game damage license, the landowner experiencing the game damage, subject to the provisions of 87-2-520, MCA, may designate some or all of the resident hunters to receive the supplemental game damage licenses by mailing or delivering in person a list of names with associated mailing addresses and phone numbers on a signed form provided by the department, to the department regional office, local biologist, or local game warden in the region where the game damage is occurring.

(4) When the department must designate resident or nonresident supplemental game damage license recipients, selection will be made using procedures defined in ARM 12.9.804A.

(5) Hunters hunting with supplemental game damage licenses are subject to Montana hunting laws and regulations.

(6) Regional supervisor will notify the commissioner in whose district damage is occurring whenever supplemental game damage licenses are authorized for issuance.

History: 87-2-520, MCA; IMP, 87-2-520, MCA; NEW, 2002 MAR p. 1306, Eff. 4/26/02; AMD, 2015 MAR p. 2138, Eff. 12/11/15

12.9.1101 MANAGEMENT HUNTS

(1) A management hunt may be implemented on lands eligible for assistance. A management hunt is a proactive measure to prevent or reduce potential damage caused by large concentrations of game animals resulting from seasonal migrations, extreme weather conditions, restrictive public hunting access on adjacent or nearby properties, or other factors. The department shall make determinations of eligibility based on the criteria set out in this rule. To qualify for a management hunt, a landowner must allow public hunting or not significantly reduce public hunting through imposed restrictions during established hunting seasons, including the general big game season. For eligibility, public hunting must be allowed at levels and in ways sufficient to effectively aid in management of area game populations. Restrictions that may significantly restrict public hunting include:

(a) species or sex of animals hunters are allowed to hunt;

(b) portion of land open to hunting;

(c) time period land is open to hunting;

(d) fees charged; and

(e) other restrictions that render harvestable animals inaccessible.

(2) If the regional supervisor determines that a management hunt is necessary before, during, or after the general hunting season, the regional supervisor must obtain the approval of the commissioner in whose district the management hunt is proposed prior to implementing the hunt. If the commissioner is not available, then the regional supervisor must obtain approval from the chair of the commission, or in the chair's absence, any other commissioner.

(3) Management hunts may be implemented under the following conditions:

(a) hunting occurs during the time period August 15 through February 15;

(b) the hunt will provide for dispersal and limited harvest of animals;

(c) hunting may include opportunities for specified numbers of hunters to harvest either-sex and antlerless game animals;

(d) size of affected area and number of animals exceeds that which can be more appropriately addressed through game damage measures outlined in ARM 12.9.802;

(e) hunting will occur only on lands eligible for assistance under (1) and approved legally-accessible state or federal land; and

(f) any weapons restrictions and area closures that apply during general hunting seasons to areas included in management hunts will also apply to hunting conducted during management hunts in those same areas.

(4) Some or all hunters eligible to hunt during a management hunt may be selected from the game damage hunt roster under procedures outlined in ARM 12.9.804A. The department may also use other established means of hunter selection, including first-come, first-served advertised opportunities, unsuccessful special license or permit applicant lists, or lists of names supplied by landowners.

(5) If the department determines that it may be effective in helping achieve the objectives of the hunt, the department may request a list of names supplied by a landowner to use in addition to selecting hunters from the hunt roster or other established means of hunter selection.

(6) If the department chooses to use a list of names supplied by a landowner, no more than 25% of the total number of hunters authorized to participate in the hunt may come from the list.

(7) If antlered animals are authorized for harvest, lists of names supplied by landowners shall not be an authorized means of hunter selection.

History: 87-1-225, MCA; IMP, 87-1-225, MCA; NEW, 2006 MAR p. 1867, Eff. 7/28/06; AMD, 2015 MAR p. 2138, Eff. 12/11/15

12.9.1105 HUNTING SEASONS EXTENSIONS

(1) The commission may determine that the extension of a hunting season may be an acceptable strategy to achieve deer or elk management objectives under the following conditions:

(a) a liberal general season deer or elk management package has been in place for two consecutive years, including the year in which the extension is proposed. A liberal season package is established when populations observed in department surveys exceed management objectives. Season packages for deer and elk are numerically described in the department's current Deer and Elk Plans;

(b) elk populations are 20% or more over the current department Elk Plan population objectives as determined by department survey, or deer populations are 20%–30% over the current department Deer Plan population objectives as determined by department survey and as specifically identified in the five ecotypes described in the Deer Plan;

(c) public hunting access during the five-week general hunting season was at levels necessary to accomplish harvest management objectives, but management objectives were still not achieved; and

(d) weather conditions during the fall hunting season result in a harvest that was substantially below the desired level in districts that are over objective. Evaluation of harvest may include, but is not limited to, field observations, check stations, weather conditions, or public comments.

(2) Additionally, the commission may consider season extensions in the event of severe winter weather conditions, and these conditions create a situation where game damage complaints occur across multiple hunting districts or represent real opportunity to secure additional needed harvest in districts that are over objective.

(3) A hunting season extension may begin the day after the close of the general fall hunting season and shall close no later than February 15. If direct harvest reaches levels that are projected to bring the deer and elk populations near population objectives, as indicated by one or more game checking stations located in the area of the hunting season extension, the commission shall close a season that it has extended.

(4) When the commission determines that a season extension is appropriate, the extension must be applied on an aggregate of hunting districts or regional basis, and the hunt area must be large enough to prevent hunter overcrowding. Season extensions may not be applied in situations where individual properties or small portions of hunting districts are involved and where existing game damage procedures more appropriately apply.

(5) The commission shall extend hunting seasons according to the following procedures:

(a) at the end of the fourth week of the general big game hunting season, a regional committee, located within the pertinent administrative region and appointed by the respective regional supervisor, shall consider the criteria listed in (1)(a) through (1)(d) or (2) to determine whether or not season extensions are warranted;

(b) the committee shall present its recommendation to the regional supervisor for approval; and

(c) if the regional supervisor and director approve the hunting extension, the department shall present the recommendation to the local commissioner representing the area where the season extension is proposed for review and final approval. In the absence of the local commissioner, the department shall present the recommendation to the commission chair for review and final approval.

History: 87-1-301, MCA; IMP, 87-1-301, MCA; NEW, 2004 MAR p. 2911, Eff. 12/3/04; TRANS, from ARM 12.9.810, 2006 MAR p. 1867, Eff. 7/28/06; AMD, 2007 MAR p. 1442, Eff. 9/21/07.

87-1-225 Regulation of wild animals damaging property -- public hunting requirements.

(1) Subject to the provisions of subsection (2), a landowner is eligible for game damage assistance under subsection (3) if the landowner:

(a) allows public hunting during established hunting seasons; or

(b) does not significantly reduce public hunting through imposed restrictions.

(2) The department may provide game damage assistance when public hunting on a landowner's property has been denied because of unique or special circumstances that have rendered public hunting inappropriate.

(3) Within 48 hours after receiving a request or complaint from any landholder or person in possession and having charge of any land in the state that wild animals of the state, protected by the fish and game laws and regulations, are doing damage to the property or crops on the property, the department shall investigate and arrange to study the situation with respect to damage and depredation. The department may then decide to open a special season on the game or, if the special season method is not feasible, the department may destroy the animals causing the damage. The department may authorize and grant the holders of the property permission to kill or destroy a specified number of the animals causing the damage. A wild, ferocious animal damaging property or endangering life is not covered by this section.

History: En. Sec. 1, Ch. 60, L. 1957; amd. Sec. 13, Ch. 417, L. 1977; R.C.M. 1947, 26-135; amd. Sec. 1, Ch. 569, L. 1987; amd. Sec. 1, Ch. 568, L. 1989; amd. Sec. 2835, Ch. 56, L. 2009.

87-2-520 Supplemental game damage license -- terms and conditions. (1) If at any time the department determines, in conjunction with a landowner or a designated lessee acting as an agent for a landowner, that game animals on the property are causing a level of damage to crops or other vegetation that merits removal of a specific number of game animals or that the taking of

a specific number of game animals is advisable for game management purposes, the department may issue nontransferable resident and nonresident supplemental game damage hunting licenses for game management purposes on the property.

(2) Supplemental game damage hunting licenses may be issued only for antlerless animals and may be issued only for use on lands eligible for game damage assistance pursuant to **87-1-225**. A landowner may not charge a fee to a hunter using a license obtained pursuant to this section.

(3) Supplemental game damage licenses may be issued to hunters as an alternative to issuing a kill permit to a landowner.

(4) (a) In a hunting district with unlimited license quotas, a landowner may designate the resident supplemental game damage license recipient upon approval of issuance, including a recipient who has obtained an apprentice hunting certificate pursuant to **87-2-810**.

(b) In a hunting district with limited permit quotas, a landowner may designate up to 75% of the resident supplemental game damage license recipients, with the remainder of the licenses offered to hunters in a manner prescribed by the department.

(5) If additional supplemental game damage licenses are available, the department may issue those licenses to resident and nonresident hunters.

(6) A licensee shall pay the regular license price or an adjusted price set by the commission for any supplemental game management license issued pursuant to subsection (1). Issuance of a supplemental game damage license authorizes the licensee to hunt, take, and possess the game animal designated on the license. All hunting under a supplemental game damage license must be conducted on the property designated on the license and in accordance with department regulations.

History: En. Sec. 1, Ch. 590, L. 2001; amd. Sec. 21, Ch. 449, L. 2015.