

IDAHO DEPARTMENT OF FISH AND GAME

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Surveys and Inventories

**Statewide Report
2018 Seasons**



MULE DEER

July 1, 2018 to June 30, 2019

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STATEWIDE REPORT SURVEYS AND INVENTORY

JOB TITLE: Mule Deer Surveys and Inventories

STUDY NAME: Big Game Population Status, Trends, Use, and Associated Habitat Studies

PERIOD COVERED: July 1, 2018 to June 30, 2019

STATEWIDE

Summary

Mule deer are Idaho's most abundant and most widely distributed big game animal. They provide more recreational opportunity than any other big game species. Mule deer densities are highest south of the Salmon River. North of the Salmon River, white-tailed deer are the dominant deer species, but mule deer populations are scattered throughout northern Idaho where there is suitable habitat.

The 2008-2017 mule deer management plan represents a statewide change in how we monitor mule deer populations. Historically, harvest parameters and periodic GMU-wide surveys were conducted to assess population status. Beginning with this plan, we established a statewide, uniform approach to monitor mule deer populations on an annual basis, thus being more responsive to population changes. The state has been divided into 15 Population Management Units (PMUs) that contain Game Management Units (GMUs) representing similar habitats, discrete mule deer populations, and/or similar management objectives. Periodic complete population estimates, combined with annual data on fawn production, over-winter fawn survival, and adult doe survival will allow us to track population status annually. Buck:doe:fawn ratios will continue to be collected annually in 11 of 15 PMUs.

Antlerless harvest thresholds have been established for each of the trend areas (with few exceptions). These thresholds represent trend area population "goals." We recognize mule deer populations are primarily a function of the environment rather than any direct Department action. These threshold values have been established to define optimum populations taking into account habitat potential, winter range conditions, harvest opportunity, and depredation concerns. As mule deer populations rise and fall, we will recommend harvest opportunity consistent with these population thresholds.

In addition to monitoring trend area populations, the Department will monitor harvest and the percentage of 4+ points in the harvest relative to minimum criterion established by the Commission (Figure 1). Prior to 1998, the telephone harvest survey provided information for harvest. Beginning in 1998, a statewide mandatory report card system was implemented. Given adequate compliance, more precise data on harvest and antler point class will be available than in the past. However, voluntary compliance with the harvest reporting requirement has been declining.

Antlerless Harvest

General season antlerless harvest is an option that may allow managers to influence deer numbers and provide added hunting opportunity when population levels are high enough to allow. Determining whether to have antlerless seasons and the length of a season often results in controversy among hunters and between hunters and wildlife managers. To help guide decisions about antlerless harvest, the following decision model was developed. As new data become available and knowledge increases regarding deer population, response to harvest, refinements will occur.

Three variables are considered in this decision model: population level relative to antlerless threshold values listed for each PMU, animal physical condition, and winter severity. Population level is determined by annual aerial surveys of trend areas; animal condition is determined at Department check stations and/or through hunter interviews; and winter severity is determined by a severity index or fawn mortality if radio-collared animals are available. Each variable is given a relative score and then these scores are summed and the maximum season framework can then be determined.

This decision model is not designed to dictate when the Department will offer general antlerless opportunity; rather, it is intended to guide discussion amongst all of Idaho's mule deer enthusiasts. Additionally, depredation decisions and subsequent actions are not intended to be influenced by the decision model.

DECISION MODEL	Variable Score		
	Population Level	Below Threshold	At Threshold
	-5	5	15
Animal Condition	Poor	Good	
	0	5	
Winter Severity	Severe, >60% Fawn Mortality	Average, 40-60% Fawn Mortality	Mild, <40% Fawn Mortality
	-5	5	10
TOTAL SCORE		SEASON FRAMEWORK	
<10		No Antlerless Harvest	
10		Controlled Harvest	
15		7 Days	
20		14 Days	

DECISION MODEL EXAMPLES:

1) Antlerless Harvest Threshold Value = 2000
 Population Survey = 3000 deer observed
 Animal Condition = good
 Winter Severity = avg. 50% fawn mortality
 Total Score = 15 + 5 + 5 = 25
 Maximum Antlerless Framework = 21+ days

2) Antlerless Harvest Threshold Value = 2000
 Population Survey = 1500 deer observed
 Animal Condition = poor
 Winter Severity = severe, 75% fawn mortality
 Total Score = -5 + 0 + -5 = -10
 Maximum Antlerless Framework = 0 days

Capture, Radio-mark and or Telemetry

A total of 209 mule deer fawns were captured, radio collared and monitored during this report period. Capture took place during December 2018 and January 2019. A total of 87 fawns survived (42%) until June 1, 2019. Major causes of mortality included malnutrition, coyote and mountain lion predation.

Biologist's monitored 539 adult mule deer does during this report period. A total of 492 survived (91%) until June 1, 2019. The major cause of mortality was mountain lion predation.

The GPS radio collars collect approximately 2 locations a day. The data is used to document seasonal movements, distribution and range use patterns.

Survey and Monitoring

During the month of December 2018, helicopter surveys were conducted across 11 Population Management Units (PMUs) to document age/sex composition data. Fawn doe ratios ranged from 53 to 85 fawns per 100 does. Buck doe ratios ranged from 17 to 47 bucks per 100 does.

A mule deer abundance survey was conducted in the Caribou PMU which includes big game management units 66, 66A, 69, 72 and 76 during the month of February 2019 (Table 1). A population estimate of 19,701 mule deer was slightly fewer than the 2013 population estimate of 21,585. In conjunction with the aerial survey, 150 cameras were deployed across mule deer winter range in the Caribou PMU during the month of November 2018 and left in place until April 2019. The over 3 million photos taken during this time period are being analyzed to generate a comparable population estimate, age and sex composition data and buck quality.

Table 1. Mule deer population monitoring efforts and results conducted between July 1, 2018 and June 30, 2019.

Zone	GMUs	Total Flight Hours	Total Estimated Mule Deer	% Change in Total Estimated Mule Deer from Previous Survey
Caribou	66,66A,69,72,76	125	19,701	-8%

Estimating Harvest

During the 2018 hunting season 95,489 hunters pursued mule deer across the state of Idaho. Hunters spent 488,511 days in the field taking 26,973 mule deer of which 21,467 were antlered and 5,506 antlerless (Table 2).

Regional staff operated 18 check stations with a total of 64 check station days. Staff collected harvest data from 13,074 hunters and 1,506 mule deer (Table 3). CWD samples were taken from 709 animals.

Table 2. Mule deer hunter participation and harvest during the 2018 harvest season.

Statewide	Hunters	Hunter Days	Total Harvest	Antlered	Antlerless	% Change in Total Harvest from Previous Year
2018	95,489	488,511	26,973	21,467	5,506	+6%

Table 3. Check station efforts and results, and mule deer checked, during the 2018 harvest season.

Statewide	Check Stations	Check Station Days	Hunters Checked*	Total Deer Checked¹ (MD)	% Change in Total Deer Checked from Previous Year
2018	18	64	13,074	1,506	+21%

*Includes white-tailed deer hunters and harvest.

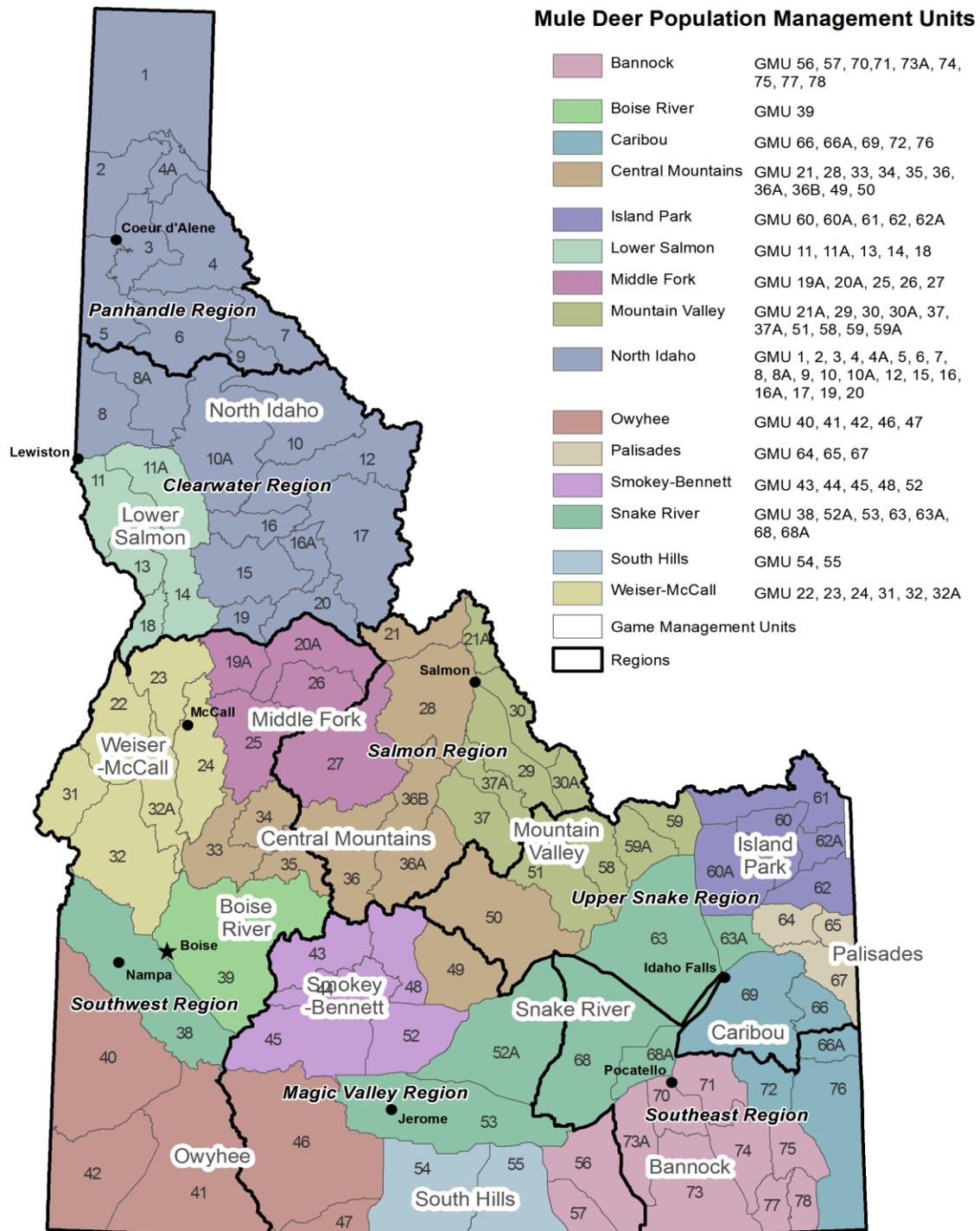


Figure 1. Mule Deer Statewide Population Management Units.

Mule Deer Statewide

Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase	Increase
Hunter Days	>350,000	>450,000

Square Miles =	84,437	3-Year Averages
% Public Land =	69%	Hunters per square mile = 1.15
Major Land Type =	Various	Harvest per square mile = 0.50
		Success Rate = 31%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer	269,628	280,144	249,903	257,904	281,502	303,197	318,357	331,091	317,847	267,039

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	61	55	63	67	71	75	64	62	66	
Buck:Doe	21	24	22	21	20	19	26	20	15	
Fawn Survival	0.68	0.32	0.63	0.61	0.78	0.83	0.64	0.30	0.57	0.42
Adult Doe Survival	0.95	0.82	0.94	0.95	0.96	0.97	0.93	0.89	0.94	0.91

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Hunters	Hunter Days	Deer Harvest		
			Antlerless	Antlered	% 4+ Points
2009	90,579	415,999	6,151	17,572	38%
2010	89,590	398,804	6,636	18,534	38%
2011	89,015	402,917	5,776	14,959	36%
2012	85,658	382,851	6,254	18,767	36%
2013	95,761	424,178	5,958	19,922	40%
2014	108,133	471,138	7,597	24,137	41%
2015	114,926	509,041	8,650	29,235	40%
2016	96,728	479,405	7,739	29,331	40%
2017	98,583	506,697	5,223	20,274	42%
2018	95,489	488,511	5,506	21,467	46%

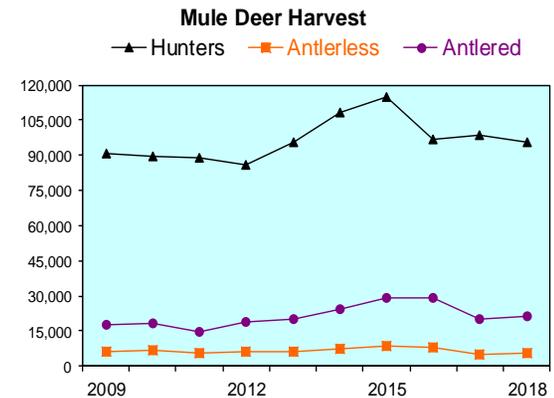
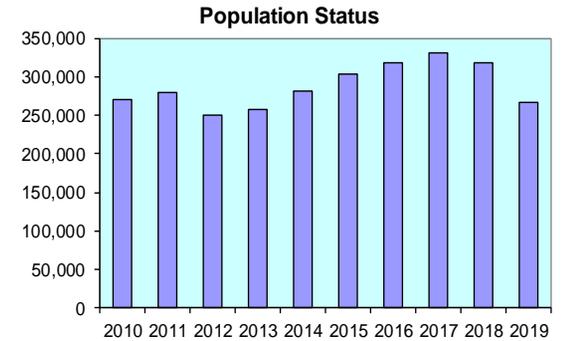


Figure 2. Mule Deer Analysis Statewide.

LOWER SALMON

PMU 1 (GMUs 11, 11A, 13, 14, 18)

Historical Background

Mule deer populations in PMU 1 were historically low. Accounts from Lewis and Clark during the 1800s suggested that very few animals were found throughout Clearwater River country. Populations probably did not change much until the large fires of the early 1900s that converted large expanses of unbroken forest into a mosaic of successional vegetation types, and large numbers of domestic livestock altered grass-dominated habitats into greater amounts of shrub cover. Populations probably peaked during the 1930s-1960s as a result of new, high-quality habitat and lack of competition by other ungulates. As elk and white-tailed deer populations increased and habitat changes including succession, development, and loss of key winter ranges occurred, mule deer populations likely decreased. Information derived from estimates made by Department wildlife managers suggests mule deer numbers in this area declined from around 23,000 in 1960 to about 15,000 in 1990.

Historically, white-tailed deer and mule deer were managed as a “single species” with a single general season harvest framework for both species. In 1973, the Department began to offer some species-specific seasons in Clearwater Region. In 1998, the Clearwater Deer Tag was established to address concerns over trespass complaints. This season framework was continued through the 2004 season. Beginning in 2005, the Clearwater Deer Tag was modified slightly and renamed the White-tailed Deer Tag to provide more flexibility for Idaho hunters while maintaining protection against trespass problems. As part of this new approach, restrictions on the Regular Deer Tag were relaxed, allowing it to again be used in the Clearwater Region through 3 November.

Management Objectives

Management objectives for the Lower Salmon (PMU 1, Figure 3) relate to the total number of deer (both a short-term objective and a long-term objective). PMU 1 has not been surveyed (using new survey protocol identified in this plan) to determine total population size since the latest plan was implemented; therefore, these values are yet to be determined. The second objective pertains to the population goal (increase, maintain, or decrease). Both the short-term and long-term objective for PMU 1 are to increase mule deer populations with the exception of GMU 11A where the goal is to decrease population in the short-term objective and then maintain. This departure from the rest of the PMU is a continued attempt to address chronic depredations caused largely by mule deer does. The third objective is to provide at least 2,500 hunter days in the short-term, and at least 3,500 long-term. This goal is currently being met with an average of 6,471 hunter days over the last 3 years (2016–2018). Additionally, an average of 70% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 54% hunter success rate.

Habitat Management and Monitoring

Habitat productivity varies widely throughout the PMU with steep, dry, river-canyon grasslands having low annual precipitation, to higher elevation forests having good habitat productivity and greater precipitation. Late successional forest cover types have become fragmented within the area. Various weeds and non-native grasses such as yellow starthistle and cheatgrass have

disturbed expansive acreages of grassland cover types in this PMU. Road density is moderate and access is restricted in many areas. This results in medium to low vulnerability of big game to hunters, especially within the Snake River corridor and the Salmon River canyon below White Bird.

Historically, sheep and cattle ranchers homesteaded the canyon lands in this PMU, while farmers settled prairie land. Around the turn of the century, northern GMU 11 and the prairie land in GMU 11A was under intensive use for dry-land agriculture, and numerous orchards were planted in the Lewiston area. As settlement increased, the forested portions of the area were intensively logged, especially on private land. The forests were frequently high-graded, and existing forests still show the scars. In addition, intensive-grazing practices degraded many meadow areas and canyons, allowing invasion of noxious weed species, especially in drier areas.

This PMU contains large tracts of both privately and publicly owned lands. GMUs 11 and 11A are mostly private land except for the Craig Mountain Wildlife Management Area (WMA) along the Snake and Salmon rivers in GMU 11. Most of GMU 13 has been under private ownership since settlement and is managed for agriculture and livestock. Historically, sheepherders ran their flocks in the canyons of GMUs 14 and 18, and logging occurred in the forested areas of these GMUs. GMUs 14 and 18 are two-thirds public lands with the remaining private land located at lower elevations along Salmon River. The majority of Hells Canyon Wilderness Area, designated in 1975, is on the Snake River side of GMU 18.

Grazing by cattle is gradually decreasing in the PMU due to reductions in U.S. Forest Service (USFS) and Bureau of Land Management (BLM) allotments, along with land ownership shifting from private to public. Several large ranches remain in private ownership with limited access (especially in GMU 13). Available mule deer winter range is being encroached upon by construction of summer homes and resorts along both the Snake and Salmon rivers.

Landowners registered enough complaints of mule deer causing damage to small grain, legume, and hay crops during the 1980s that a special mule deer season was developed in the Waha and Maloney Creek areas of GMU 11. This season helped reduce damage complaints, and the Maloney Creek portion of the hunt was eliminated in 1997 due to the decline of mule deer in southern GMU 11. This decline was also experienced in agricultural areas of GMUs 11A, 13, 14, 18, and 23. Landowner complaints in GMU 11A relate primarily to damage caused to rapeseed, legumes, bluegrass, and winter wheat. Complaints in GMUs 13, 14, 18, and 23 involve damage to irrigated alfalfa, orchards, standing hay, and stored hay on agricultural land along the Salmon River breaks. Currently, there are only a few depredation concerns involving mule deer in PMU 1. Since 1998, antlerless mule deer have increased in areas surrounding agricultural fields, especially in portions of GMUs 11A and 14.

During 2000, fire burned a large portion of GMU 11 along the Salmon and Snake rivers from Maloney Creek downstream to Dough Creek and all the way to the ridgeline in most places (Maloney Creek Fire). During 2007, much of the Snake River face in GMU 11 was again burned by wildfire (Chimney Creek complex). That same year, wildfires in GMU 13 and 18 also burned large tracts of wildlife habitat primarily on public lands. The southern portion of GMU 11 experienced another large wildfire (Cougar Creek Fire) in August of 2014 caused by a lightning

strike. This fire burned primarily across the canyon grassland habitat in both the Salmon and Snake River drainages. The fire consumed 65,200 acres south of Billy Creek on the Snake River side and south of Eagle Creek on the Salmon River side. These fire alterations on the landscape are continually being analyzed for impacts. Grasses and native vegetation are being replanted and many of the bulldozer lines have recovered. Even so, it will be years before the shrub component fully recovers and decades before conifer regeneration (when and where impacted) provides thermal and hiding cover. The prevalence of cheatgrass and changing climatic conditions appear to be dramatically increasing the fire frequency in these GMUs.

Biological Objectives

Poor productivity and declining mature buck numbers as reflected in decreasing fawn:doe:buck ratios, a decrease in total numbers, and a 50% decrease in harvest from the late 1980s to the mid-1990s resulted in concerns for the mule deer herds in these GMUs. In 1992, aerial surveys in GMUs 14 and 18 indicated buck:doe ratios at 7:100 and 13:100, respectively. These concerns led to the implementation of antlered-only controlled hunts beginning in 1998 in GMUs 11, 11A, 13, 14, and 18.

A December 1999 sightability survey in GMU 14 resulted in an estimate of 2,622 mule deer with a buck:doe:fawn ratio of 18:100:50. GMU 14 was resurveyed in December 2004. The survey resulted in an estimate of 2,814 total mule deer with a buck:doe:fawn ratio of 34:100:61.

The composition/trend survey conducted in December 1999 indicated a total population of 1,725 mule deer in the White Bird trend area (portions of GMUs 13, 14, and 18). This represented a 26% decrease in total numbers from the same sub-GMUs flown during the early 1990s. Subsequent White Bird trend area surveys conducted during the 2001–2002 and 2002–2003 winters indicated a stable population with increasing buck:doe (22:100 average) and fawn:doe (53:100 average) ratios. The survey conducted in 2003–2004 had similar buck:doe (23:100) and fawn:doe (47:100) ratios. However, the total estimate increased by 54% over the 2002–2003 count to 2,654 mule deer. It is likely that this increase can be attributed primarily to a change in deer distribution (due to a significant snowfall event just prior to the survey) rather than an increase in the deer population. The 2005 survey yielded results similar to pre-2004 levels with a total estimate of 1,937 and a buck:doe:fawn ratio of 20:100:63.

In 1990, controlled hunt permit numbers in GMU 11 were reduced significantly. Since then, buck:doe:fawn ratios have improved along with percent four-point bucks and total buck numbers. Due to declines in mule deer populations, GMUs 11A, 13, 14, and 18 were changed from general hunts to controlled hunts in 1998. GMU 11A was surveyed specifically for mule deer for the first time during winter 2003–2004. A total of 1,798 mule deer were estimated with a buck:doe:fawn ratio of 20:100:52.

In February 2013, a composition survey was conducted in GMU's 11, 13, and 18 in conjunction with the Hells Canyon Zone elk sightability survey. Due to the timing of the survey, sex structure was not determined. Total deer observed appear to be increasing since the early 2000's in GMUs 11 and 18, although are decreasing in GMU 13. Interestingly, fawns per 100 adults showed an opposite trend and were increasing in GMU 13, indicating deer populations in GMU 13 may be rebounding. Total deer observed in 2013 (3,477) exceeded total deer observed in 1991 (1,333) by 2,144 deer, suggesting substantial population growth. In addition, fawns per 100 total deer were 45:100, up from 31:100 in 1991. Total deer observed in GMU 13 decreased from 5,347 in 1989 to 2,712 in 2013, although fawns per 100 adults increased from 30:100 to 53:100. Total deer observed and fawns per 100 adults also increased in GMU 18 from 2,056 in 1990 to 2,805 in 2013 while fawns per 100 adults decreased moderately from 56:100 to 46:100. Although these data are not as useful as a complete aerial survey, they do provide insight into current trends of these management units. These units were re-flown in 2019 in conjunction with the zone's elk sightability survey. Total deer observed declined markedly from numbers tallied in 2013 as described in the Population Surveys and Monitoring section below. Additionally, GMU 14 was surveyed in February 2015 in conjunction with an Elk City Zone elk sightability survey. A total of 2,851 mule deer were tallied. This total was comprised of 1,893 unclassified adults and 959 fawns (51 fawns:100 unclassified adults). The 2,851 mule deer counted in 2015 were within 1% of the 2,814 tallied on the next most recent survey (2005) and the mean of 2,831 from the 3 prior surveys conducted in this GMU (2005, 1999, and 1992).

Capture, Radio-mark and or Telemetry

In December 2008, a total of 21 adult mule deer does were radio-collared in the PMU to evaluate survival rates. A total of 10 were collared in GMU 11, 2 in GMU 13, and 9 were radio-collared GMU 18. As of June 2012, there were a total of 10 mortalities, 6 in GMU 11, 3 in GMU 18, and 1 in GMU 13, in addition to 1 missing collar in GMU 18. No mule deer have been captured or radio-collared since 2008.

Population Surveys and Monitoring

The Lower Salmon PMU has not had a full sightability survey flown since the adoption of the current mule deer plan. Budget constraints and prioritization favoring southern Idaho mule deer survey needs drove this decision. Additionally, PMU 1 mule deer are managed under a relatively conservative controlled hunt season framework and they almost never experience winter die-offs due to the mild low elevation winter ranges utilized, factors which also figured into the decision to temporarily cease flying this PMU.

However, during February 2013, a composition survey was conducted in GMU's 11, 13, and 18 in conjunction with the Hells Canyon Zone elk sightability survey. Due to the timing of the survey, sex structure was not determined. Total deer observed appear to be increasing since the early 2000's in GMUs 11 and 18, although are decreasing in GMU 13. Interestingly, fawns per 100 adults showed an opposite trend and were increasing in GMU 13, indicating deer populations in GMU 13 may be rebounding. Total deer observed in 2013 (3,477) exceeded total deer observed in 1991 (1,333) by 2,144 deer, suggesting substantial population growth. In addition, fawns per 100 total deer were 45:100, up from 31:100 in 1991. Total deer observed in

GMU 13 decreased from 5,347 in 1989 to 2,712 in 2013, although fawns per 100 adults increased from 30:100 to 53:100. Total deer observed and fawns per 100 adults also increased in GMU 18 from 2,056 in 1990 to 2,805 in 2013 while fawns per 100 adults decreased moderately from 56:100 to 46:100. Although these data are not as useful as a complete aerial survey, they do provide insight into current trends of these management units. Additionally, GMU 14 was surveyed in February 2015 in conjunction with an Elk City Zone elk sightability survey. A total of 2,851 mule deer were tallied. This total was comprised of 1,893 unclassified adults and 959 fawns (51 fawns:100 unclassified adults). The 2,851 mule deer counted in 2015 were within 1% of the 2,814 tallied on the next most recent survey (2005) and the mean of 2,831 from the 3 prior surveys conducted in this GMU (2005, 1999, and 1992).

The Hells Canyon Units (11, 13, and 18) were flown again as a composition survey in January 2019 in conjunction with the zone's elk sightability survey. Total deer observed dropped markedly compared to the high counts seen in 2013. Total deer in Unit 11 decreased from 3,477 in 2013 to 2,449 in 2019 although fawn to 100 adult ratios were similar (42 versus 43) to the earlier count. In Unit 13, total deer observed in 2019 (1,255) declined from the 2,712 tallied in 2013. The 2019 survey found 44 fawns per 100 unclassified adults, as compared to 53:100 in 2013. In Unit 18 a total of 1,324 deer were counted in 2019, as compared to 2,805 in 2013. Fawns per 100 unclassified adults declined from 46 in 2013 to 40 in 2019.

Inter-specific Issues

A decline in cattle grazing and successive years of drought during the late 1980s and early 1990s may have contributed to rangeland shifting from forbs to grasses. Intensive logging has created extensive brushy areas on winter ranges. These shifts in vegetation have resulted in increases in white-tailed deer and elk populations, creating competition with mule deer on both winter and summer ranges, although the impacts of these interactions are not well understood or documented.

Predation Issues

Mountain lion harvest has increased slightly in this area during the past several decades and most likely reflects an increase in mountain lion numbers, which may be contributing to lower deer densities. Bear populations and harvest have remained relatively stable in this PMU. The semi-arid climate and sparse timber limit the extent of highly productive bear foods in GMUs 11, 11A, 13, 14, and 18. However, due to extensive old homestead sites in these GMUs, numerous fruit trees and shrubs were planted and remain in the areas today, providing excellent bear foods in autumn. Some of the largest bears in the state annually come from GMU 11. Bears are not thought to have an effect on deer recruitment in this PMU. The addition of wolves will likely have an impact on black bear, mountain lion, and coyote populations. However, wolf numbers have been low in these open habitat dominated units. Packs have been documented only in GMU 14 and the southern portion of GMU 18 to date. At some level, predation could benefit deer herds to the extent that it reduces elk competition and keeps deer herds below carrying capacity where they can be more productive. However, excessive levels of predation can also suppress prey populations to undesirable levels. At this point, it is unclear what net impact predation exerts on these populations.

Winter Feeding and Depredation

Emergency winter feeding of mule deer has not occurred in this PMU in recent history.

Hunting and Harvest Characteristics

Total harvest in PMU 1 in 2018 was estimated at 654 mule deer based on mandatory harvest report cards. This is nearly identical to the 652 harvested in 2017 and is 5% lower than the previous five-year average of 691. Total hunter numbers were estimated at 1,246 for 2018 compared to 1,254 hunters for 2017. An average of 70% of the bucks harvested in these GMUs over the past 3 years (2016-2018) have been 4-point or larger with a 54% hunter success rate (Figure 3).

Disease Monitoring

During the winter of 2009, a species of exotic louse, *Bovicola tibialis*, was documented for the first time in Idaho on a dead mule deer fawn in the city of Riggins. Four city deer sampled later that spring were found to be affected by the lice and had extensive hair loss (self-inflicted) associated with the lice infestation. In early March of 2012, with the help of Wildlife Services, the Department killed 60 deer in an effort to stop the spread of the louse. Test results showed that more than 90% of the deer were infested with *Bovicola tibialis*. Efforts were then made to treat the remaining deer within city limits. In May of 2012, *Bovicola tibialis* was found at lower densities in other Idaho locations at Salmon, Elk Bend, Emmett, and the Andrus Wildlife Management Area indicating that the louse was not confined to Riggins. Monitoring efforts for the presence of this louse are ongoing.

Periodic epizootic hemorrhagic disease and blue tongue outbreaks have occurred in the some lower elevation portions of these units since 2003. While some mule deer mortalities were documented, the outbreaks primarily affected white-tailed deer. There is no evidence that mule deer were impacted at the population level.

Management Discussion

Harvest and aerial survey information for this PMU are limited. Improved estimates are needed for yearly harvest data. Prior to 1994, all harvest data was for mule deer and white-tailed deer combined. Hunter participation data were first split out by deer species pursued in 2005. Data should continue to be separated for both deer species. The initiation of controlled hunts in GMUs 11A, 13, 14, and 18 in 1998 has resulted in improved harvest information and buck numbers. The aerial survey of White Bird trend area was flown during the winters of 2000–2005. This survey has now been discontinued and has been replaced with the statewide mule deer monitoring protocol that calls for a sample of GMUs to be surveyed for composition each year when possible and a complete population survey approximately every 5 years. Budgetary constraints and re-prioritization of statewide surveys have resulted in a lack of implementation of the recently adopted aerial survey schedule in this PMU to date. However, mule deer were surveyed incidentally during elk sightability surveys in 2013 and 2019 (GMUs 11, 13, and 18) and 2015 (GMU 14).

Mule Deer Lower Salmon PMU 1 (GMUs 11, 11A, 13, 14, 18)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase*	Increase*
Hunter Days	>2,500	>3,500

* Except 11A - Decrease-Maintain

Square Miles =	2,788	3-Year Averages	
% Public Land =	37%	Hunters per square mile =	0.44
Major Land Type =	Agriculture/Range	Harvest per square mile =	0.37
		Success Rate =	54%

Population Status

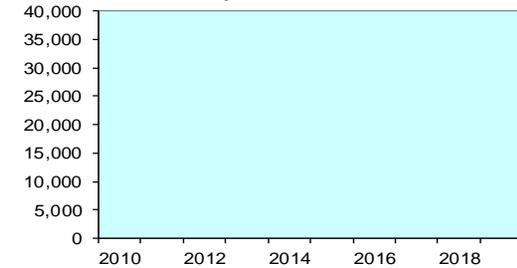
Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer										

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	ND									
Buck:Doe	ND									
Fawn Survival	ND									
Adult Doe Survival	ND									

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Population Status



Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	1,219	6,068	169	572	74%
2010	1,134	5,685	126	586	71%
2011	1,226	6,491	167	493	72%
2012	1,161	5,776	174	511	67%
2013	1,203	6,125	116	525	67%
2014	1,187	5,907	144	586	68%
2015	1,226	6,208	189	532	66%
2016	1,219	6,228	180	533	72%
2017	1,254	6,104	162	490	69%
2018	1,246	7,080	193	461	69%

Previous Trend Area Surveys

GMU	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Various	ND	1,662	ND	1,747	1,722	2,645	1,937	ND	ND	ND

Note: ND = no survey data available

Mule Deer Harvest

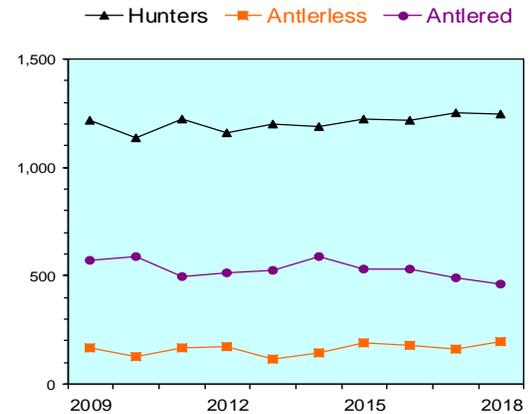


Figure 3. Lower Salmon Mule Deer PMU Status and Objectives.

WEISER-MCCALL

PMU 2 (GMUs 22, 23, 24, 31, 32, 32A)

Historical Background

These GMUs represent a significant portion of the mule deer population and mule deer harvest in the Southwest Region. In the late 1800s, deer herds were reduced by extensive meat hunting throughout the area. Hunting was restricted in the early 1900s. The subsequent increase in deer herds led to periodic high winter mortality and concern for the status of vegetation on deer winter range.

Over one-third of Idaho's human population lives near these GMUs. These GMUs provide deer hunting opportunity to over 16,000 hunters per year, but that opportunity has to be closely monitored to prevent over-harvest. This is particularly true because much of this PMU is dominated by open sagebrush habitats where deer are highly vulnerable.

Management Objectives

Objectives for most the Weiser-McCall (PMU 2, Figure 4) are to maintain buck harvest above 25% ≥ 4 points in GMUs 23, 24, 31, 32, and 32A and maintain buck:doe ratios from herd composition surveys at or above the statewide minimum of 15 bucks per 100 does. Objectives for GMU 22 are to maintain buck:doe ratios at or above 25 bucks per 100 does and to manage for a "quality" controlled hunt with $>40\%$ 4+ bucks in the harvest. Since fall 2008, the general rifle buck harvest in GMU 22 has been restricted to ≤ 2 point bucks to help meet "quality" management objectives.

Habitat Management and Monitoring

Habitats in this PMU vary from the sagebrush-grassland winter ranges to the mountain shrub/forest communities of high elevation summer ranges. The majority of mule deer summer on land administered by USFS. Low-elevation winter ranges consist of private, state, and BLM lands. Logging, grazing, and fires have substantially affected the condition of these ranges. Logging activity has increased shrub fields and provided increased forage for mule deer. The effect of fire on high elevation summer ranges has been positive, improving forage conditions for deer. Conversely, effects of fire on low-elevation winter ranges have been more negative. In many cases, fires have reduced important shrub species such as bitterbrush and sagebrush that deer are dependent on during winter. The proliferation of noxious weeds has reduced the quality of mule deer winter range in portions of this PMU.

Biological Objectives

Population performance in this area is closely associated with winter severity and body condition of deer when entering the winter period. Buck harvest parameters in general any antlered deer seasons tends to vary around the target of 25% 4+ points; in 2018, 26% of antlered animals harvested were 4 points or better. Aerial survey data indicates buck:doe ratios were 17:100 during the winter of 2018–2019. Over-winter fawn survival was 32% and doe survival was 90% during winter 2018–2019. In GMU 22, the December 2018 buck:doe ratio was 20:100. Buck:doe ratios throughout this PMU were low during the winter of 2017–2018, likely a result of the hard winter of 2016–2017. All of the bucks harvested in the GMU 22 controlled hunt were 4+ points.

Capture, Radio-mark and or Telemetry

As part of the Department's mule deer population monitoring program, adult does and 6 month old fawns are captured and fitted with radio collars in this PMU.

During the 2018–2019 reporting period, the Department monitored 78 adult female mule deer and 37 mule deer fawns in the McCall-Weiser PMU. Over winter doe survival was 90% and fawn survival was 32%.

Population Surveys and Monitoring

The survey protocol for monitoring mule deer populations in southern Idaho was most recently revised in 2007–2008. Currently, biologists conduct annual herd composition surveys during December, and periodic (every 5–8 years) PMU-wide sightability surveys during January and February.

During the December 2018 herd composition survey, 1,057 deer were observed. The buck:doe ratio was 17:100, and fawn:doe ratio was 61:100. The most recent sightability survey in this PMU occurred in 2010, resulting in an estimate of 35,269 deer in this PMU.

Inter-specific Issues

Elk densities are currently high in the McCall and Weiser Elk Zones. These high elk densities may be limiting the ability of the area to support mule deer. There are some white-tailed deer in GMUs 22, 23, 24, 32, and 32A. White-tailed deer populations do not seem to be expanding their distribution. Intensive livestock grazing is present on much of the range. The extent of competition among species is largely unknown.

Predation Issues

Bobcats, coyotes, mountain lions, black bears and wolves occur throughout the PMU. The impact of these large predators on mule deer is largely unknown.

Winter Feeding and Depredation

Winter feeding has been fairly uncommon in these GMUs. Winter feeding occurred during the winter of 2016–2017 to alleviate severe mortality. Prior to that, winter feeding last occurred in Weiser and Brownlee Reservoir area during the severe winter of 1992–1993.

Hunting and Harvest Characteristics

Total harvest in PMU 2 in 2018 was estimated at 2,385 mule deer based on mandatory harvest report cards. This represents a 29% increase in harvest from 2017 (1,851) and is 39% lower than the previous five-year average of 3,885. Total hunter numbers were estimated at 10,986 for 2018 compared to 10,750 hunters for 2017. The recent steep decline in harvest is likely attributable to 2 primary factors: the harsh winter of 2016–2017 resulted in high fawn mortality and a lack of yearlings available for harvest in fall 2017; this missing cohort will carry through harvest statistics in years to come. Also, because of the harsh winter, the Department eliminated several controlled antlerless hunts and shortened the youth either-sex season in this area. An average of

32% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger (Figure 4).

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved our CWD Response and Monitoring Plan in 2017. Mule deer PMUs on the west side of the state are sampled on a rotational schedule. The McCall-Weiser PMU was sampled in 2017–2018, and will be sampled again during 2021–2022.

Management Discussion

Herd composition surveys will be conducted annually during December. Radio-collared fawns and adult does will provide estimates of annual survival rates. Mule deer population abundance surveys will be conducted approximately every 5 to 8 years, with modeling providing interim population estimates between population surveys. Information on inter-specific competition is needed.

Mule Deer Weiser-McCall PMU 2 (GMUs 22, 23, 24, 31, 32, 32A)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	35,000	35,000
Pop. Goal	Maintain	Maintain
Hunter Days	>50,000	>50,000

Square Miles =	5,116	3-Year Averages	
% Public Land =	56%	Hunters per square mile =	2.25
Major Land Type =	Rangeland	Harvest per square mile =	0.87
		Success Rate =	25%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer	35,269									

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	63	49	56	ND	57	58	58	67	61	
Buck:Doe	20	13	15	ND	19	19	19	11	17	
Fawn Survival	0.49	0.16	0.58	0.47	0.64	0.64	0.51	0.03	0.59	0.32
Adult Doe Survival	0.98	0.65	0.91	0.89	0.87	0.90	0.85	0.82	0.94	0.90

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	13,462	58,203	1,356	2,907	27%
2010	14,010	58,499	1,705	2,636	29%
2011	13,160	58,373	1,048	1,862	40%
2012	12,938	55,315	1,173	2,554	31%
2013	14,981	64,854	1,033	2,755	31%
2014	16,244	69,059	1,405	2,968	28%
2015	16,626	73,843	1,520	3,389	30%
2016	12,722	62,694	1,196	3,310	33%
2017	10,750	58,944	498	1,353	35%
2018	10,986	60,594	632	1,753	26%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
22	ND	ND	4,091	4,318	3,725	3,193	4,295	ND	4,809	ND
31	ND	ND	3,826	4,450	3,732	3,207	3,834	ND	ND	ND
32	ND	ND	ND	ND	ND	ND	11,443	ND	ND	ND

Note: ND = no survey data available

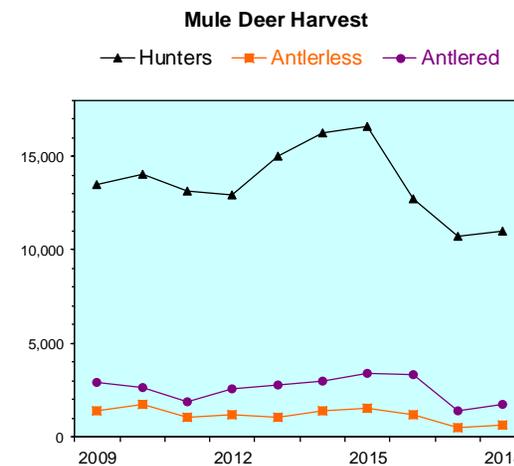
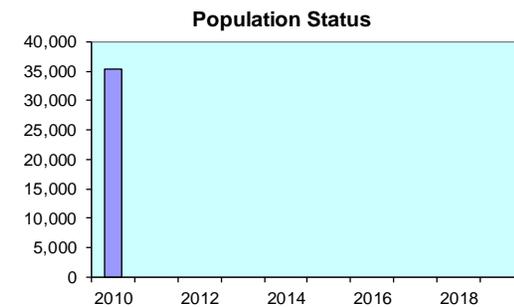


Figure 4. Weiser-McCall Mule Deer PMU Status and Objectives.

MIDDLE FORK

PMU 3 (GMUs 19A, 20A, 25, 26, 27)

Historical Background

These GMUs represent the core of Idaho's backcountry; much of the area is designated wilderness. With the rugged, remote terrain and difficult access, management control of deer herds has been difficult at best. The forces of weather, fire, and plant succession have ultimately played a much larger role in deer populations than efforts of wildlife managers. In the late 1800s, human populations reached their peak in the backcountry as gold seekers poured into the area and established mining boom towns. With the miners came year-round big game hunting for meat, followed shortly by intensive livestock grazing. Depleted game herds plus heavy grazing of grass ranges set the stage for a shrub explosion in the early 1900s. At the same time, the mining boom collapsed and deer management emphasized protection from harvest; large "game preserves" were created.

By the 1930s, managers were recognizing that deer herds had grown to levels that were damaging winter ranges. Management emphasis shifted from protection to trying to achieve enough harvest to maintain winter range condition. Seasons were extended from mid-September through November to mid-December. Second and third deer tags were offered in some areas from the 1940s through the 1960s. A mid-September to late November season (Appendix A) has been standard in the backcountry GMUs since the 1950s. However, historically limited access has prevented harvest from being wide spread across the PMU. Even today, much of the deer harvest is localized around access points such as roads and airstrips.

Ultimately, the shrub winter ranges could not be sustained. More controlled livestock grazing and fire suppression allowed grasses and conifers to out-compete shrub seedlings; shrub ranges began to revert to grasslands and forests. As the habitat went, so went the deer; long-term trend counts in GMU 27 showed a steady decline in deer numbers from the 1920s to the mid-1960s. Since that time, the trend in deer numbers and harvest has been relatively flat. For example, 2,900 deer were counted during a 1968 helicopter deer survey of GMU 27. During helicopter elk surveys in GMU 27 in 1995, 1999, 2002, and 2006 staff counted 2,625–2,911 deer incidental to elk counts.

More recently, fires in the early 2000s contributed to the slow return of a shrub-mosaic in much of the Middle Fork PMU. In the mid-2000s, the Department moved from trend-area counts to unit-wide abundance surveys to better account for annual fluctuations in timing of seasonal habitat use. An abundance survey of the entire PMU in February 2011 yielded a population estimate of 10,248 deer. Over 6,000 deer were counted in GMU 27, with an estimated 3,750 in the same trend area surveyed in 2006, potentially indicating a large increase in abundance. More recently, a 2017 abundance survey yielded a PMU population estimate of 13,357 deer. This again included approximately 6,000 deer in GMU 27, indicating the population may be stabilizing at these higher deer numbers.

Hunting pressure and harvest increased during the early 2000s to reflect the increased mule deer population in this PMU. Hunter success rates also increased during the past several years, from 22% in 2008 to 40% in 2017. For the entire PMU, buck harvest has averaged above 60% 4-

points, well above the 25% minimum. Similarly, buck:doe ratios always exceed the 15:100 minimum.

Management Objectives

Objectives for most GMUs within the Middle Fork (PMU 3, Figure 5) are to maintain >25% 4-points in the buck harvest and maintain buck:doe ratios from herd composition surveys at or above the statewide minimum of 15 bucks per 100 does. In GMU 27, objectives are to maintain >40%, 4-points in the buck harvest and maintain buck:doe ratios from herd composition ratios at or above 25 bucks per 100 does.

Habitat Management and Monitoring

In much of this PMU habitat ultimately determines deer densities and productivity. In these GMUs where hunter harvest has historically been light, particularly for females, deer herds could be expected to exist much of the time at densities approaching carrying capacity (unless suppressed by predators or temporarily set back by severe winters). Deer herds at or near carrying capacity can be expected to be relatively unproductive, recruiting few fawns, thus few bucks into the population, and these herds can be expected to produce bucks with small antlers. GMU 27 does produce relatively small-antlered bucks for their age, but this has not been definitively tied to deer densities or habitat. Recently, fire appears to be benefitting deer throughout the Middle Fork PMU, although the speed of post-fire plant community changes varies with soil types and precipitation. In winter range (low elevation areas, generally southern slopes), fire has resulted in the conversion of shrub slopes to annual invasive grasses, which offer very low nutritional value. Fires that have benefited deer populations are those fires mostly located in higher elevations (summer range) where cheatgrass is not spread post fire. Already established in some areas, the spread of noxious weeds such as knapweed, rush skeletonweed, and leafy spurge could ultimately have significant impacts on winter range productivity.

Biological Objectives

Prior to the mid-2000s, sporadic aerial surveys in portions of the PMU indicated deer numbers were fairly stable from the 1960s through the early 2000s. Since large fires in 2000 in the southern portion of the PMU, some outfitters have reported increased deer numbers and antler development. As indicted above, comprehensive deer surveys began in 2011, and these aerial abundance surveys support this observation that the deer population is increasing. (30% increase in total deer population from 2011–2017).

Capture, Radio-mark and or Telemetry

No mule deer were radio-marked or monitored during this reporting period.

Population Surveys and Monitoring

The survey protocol for monitoring mule deer populations in southern Idaho was most recently revised in 2007–2008. Currently, biologists conduct annual herd composition surveys during December, and periodic (every 5-8 years) PMU-wide sightability surveys during January and February.

During the December 2018 herd composition survey, 1,350 deer were observed. The buck:doe ratio was 23:100, and fawn:doe ratio was 76:100. The most recent sightability survey in this PMU occurred in 2017, resulting in an estimate of 13,357 deer in this PMU.

Inter-specific Issues

In portions of this zone, elk densities may be having some impact on the area's capacity to produce deer. White-tailed deer, a potentially strong competitor, are rare south of Salmon River but occur at greater densities in the more northern GMUs. In some limited areas, mountain goats and mule deer may be competing for the same mountain mahogany winter ranges. Bighorn sheep also share some ranges, but generally overlap little with deer. Livestock rangeland grazing, another potential source of competition, is generally a very minor activity in most of these GMUs.

Predation Issues

Black bear densities appear to be low to moderate in the southern GMUs and increasing toward the north. Mountain lion densities are at least moderate and appear to have leveled off or potentially decreased in recent years, probably at least in part due to competition with a robust wolf population. Coyotes are common and have an unknown impact on deer populations. Bobcats and golden eagles are present, but are not thought to cause significant predation on deer. Wolves reintroduced by USFWS have become well established in these GMUs. The addition of wolves is likely to have an impact on black bear, mountain lion, and coyote populations. At some level, predation could benefit deer herds to the extent that it reduces elk competition and keeps deer herds below carrying capacity where they can be more productive. However, excessive levels of predation can also suppress prey populations to undesirably low levels. At this point, it is unclear what the net impact of predation is with the new mix of large predators.

Winter Feeding and Depredation

Winter feeding has not occurred in these remote GMUs.

Hunting and Harvest Characteristics

Total harvest in PMU 3 in 2018 was estimated at 944 mule deer based on mandatory harvest report cards. This is 18% lower than the previous five-year average of 1143. Total hunter numbers were estimated at 3,239 for 2018 compared to 3,276 hunters for 2017. An average of 67% of the bucks harvested in these GMUs over the past 3 years (2016-2018) have been 4-point or larger.

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved our CWD Response and Monitoring Plan in 2017. Mule deer PMUs on the west side of the state are sampled on a rotational schedule. The Middle Fork PMU will be sampled during 2020–2021.

Management Discussion

Impacts of elk on mule deer production and survival are suspected, but unknown. Competition for shared habitat has been documented in other areas (Johnson et al. 2000). The most productive

deer herds are those maintained at a level well below carrying capacity. Better information is needed to identify appropriate deer densities that will maintain optimum productivity and harvest. The potential impact of the new mix of large predators is unknown. Migratory patterns from limited collar data show that deer in the Middle Fork Canyon have several migration strategies, with most deer traveling to the head waters of the various tributaries of the Middle Fork of the Salmon River.

Herd composition surveys will be conducted annually during December. Mule deer total population abundance surveys will be conducted approximately every 5 years, with modeling providing interim population estimates between population surveys.

Johnson, B. K., J. W. Kern, M. J. Wisdom, S. L. Findholt, and J. G. Kie. 2000. Resource selection and spatial separation of mule deer and elk during spring. *Journal of Wildlife Management* 64:685-697.

Mule Deer Middle Fork PMU 3 (GMUs 19A, 20A, 25, 26, 27)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase	Increase
Hunter Days	>7,500	>7,500

Square Miles =	4,246	3-Year Averages	
% Public Land =	99%	Hunters per square mile =	0.76
Major Land Type =	Forest	Harvest per square mile =	0.32
		Success Rate =	37%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer		10,248						13,357		

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	39	50	38	ND	ND	80	72	47	76	
Buck:Doe	25	27	35	ND	ND	33	27	23	23	
Fawn Survival	ND									
Adult Doe Survival	0.96	0.98	0.80	0.94	ND	ND	ND	ND	ND	ND

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	1,952	11,511	16	523	63%
2010	2,142	12,149	30	581	65%
2011	1,917	11,056	30	462	64%
2012	1,931	10,875	24	543	68%
2013	2,112	11,576	45	708	68%
2014	2,364	12,247	76	941	70%
2015	3,356	17,714	86	1,256	68%
2016	3,182	17,492	107	1,266	67%
2017	3,276	18,957	63	1,169	68%
2018	3,239	19,152	64	880	67%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
27	ND	2,519	2,225	2,468	1,610	2,785	2,154	2,540	2,718	ND

Note: ND = no survey data available

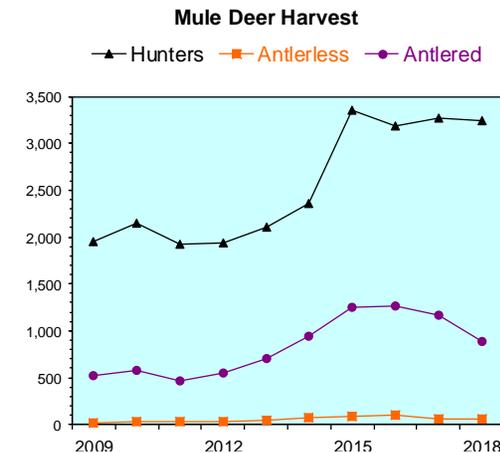
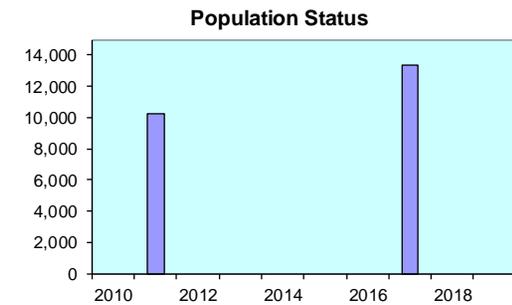


Figure 5. Middle Fork Mule Deer PMU Status and Objectives.

CENTRAL MOUNTAINS

PMU 4 (GMUs 21, 28, 33, 34, 35, 36, 36A, 36B, 49, 50)

Historical Background

Mule deer were scarce and harvests low for much of the early part of the twentieth century. From 1917 until the 1940s, parts of GMUs 28 and 36B were designated as no hunting “game preserves”. By the early 1940s, deer herds had expanded to the point that long, either-sex seasons were being offered (early Oct to mid-Nov). This pattern continued into the 1970s, when the antlerless portion of the season began to be shortened and total season length was shortened to include mid-October to mid-November. In 1991, concerns for mature buck escapement led to shifting the deer season earlier so that it ended in October before the rut began. Since 1991, the deer season framework (Appendix A) has been the most conservative these GMUs have seen in at least 50 years. The 2005 hunting season was shifted to 10-31 October in an attempt to establish a consistent season framework across the state. However, high fawn mortality during winter 2005-2006 and reduced buck ratios after the 2005 season prompted a reduction in season length after 2005 (10-24 Oct) in the northern GMUs. Deer numbers and buck ratios have rebounded recently, but the season length has not been expanded to this point.

Hunter numbers dropped slightly from an average of 11,420 hunters harvesting 2,630 bucks annually during the 1990s to a low of 8,672 hunters harvesting 1,892 bucks in 2012. Hunter numbers have increased steadily since 2012. Buck harvest in 2018 was 2,472; approximately 1,500 less than 2016, but still right at the 10-year average. Increases in hunter numbers and annual harvest will likely remain high as long as fawn production and overwinter survival continue near current levels.

Management Objectives

Objectives for Central Mountains (PMU 4, Figure 6) are to maintain ~15 bucks:100 does in post-season surveys and >25% \geq 4-point bucks in the harvest.

Habitat Management and Monitoring

Cattle ranching, livestock grazing, mining, and recreation are dominant human uses of the landscape in PMU 4. Deer depredations on agricultural crops are minor. Intrusion of human development into winter ranges is accelerating. In recent history, disturbance is mostly lacking in this PMU. Disturbance (natural fires or logging) can benefit forage quality for mule deer, especially in areas with over-stocked or even-aged timber stands. Disturbance where noxious weeds are present can degrade mule deer habitat.

Habitat ultimately determines deer densities and productivity. However, specific limiting factors within the habitat are poorly understood. Deer herds at or near carrying capacity can be expected to be relatively unproductive, recruiting few fawns, thus few bucks into the population; antlers will be relatively small for the age of the buck; and antler drop will occur relatively early in winter. Deer herds in this group of GMUs exhibit all these traits to some degree, but this has not been definitively tied to deer densities or habitat. In some areas, deer winter in mature stands of mountain mahogany that are relatively stagnant and unproductive. Elk may have removed much of the mountain mahogany forage within reach of deer. Forests are slowly encroaching into

shrub and grassland communities. Spread of noxious weeds and invasive annual grasses, such as knapweed, leafy spurge, and cheatgrass, could ultimately have significant impacts on winter range productivity.

Biological Objectives

A trend area in GMU 21 near North Fork was surveyed most years from December 1990–2006 and a similar trend area was surveyed in GMU 36B south of Challis from December 1994–2005. Overall trend data indicate increasing populations of deer following the late 90s, and mostly stable populations through the end of trend count surveys in 2007. A total abundance survey was completed in 2011, yielding an estimate of 33,477 for the entire PMU 4.

Fawn production in PMU 4 had been fairly steady from 2008 to 2016, with an average of 64 fawns per 100 does based on winter flights. The 2 lowest years were 2008 and 2011, with an average of 57 fawns per 100 does. The highest fawn ratio was in 2014, with 72 fawns per 100 does. The most recent winter of 2018 showed fawn ratios were 71 fawns per 100 does. The buck ratios were very high prior to 2017, with 30 and 31 bucks per 100 does in 2014 and 2015 respectfully. The 2018 buck ratio was 18 bucks per 100 does.

Winter fawn survival fluctuates based on severity of winter and fawn body condition. Survival rates are usually high for fawns in good body condition going into winter, and when winter weather conditions are favorable. Fawn survival during winter 2018–2019 was 49%. Adult doe survival was 90% in 2018, which is also 4% lower than the 10 year average.

Capture, Radio-mark and or Telemetry

Adult does and 6-month old fawns have been radio-collared in winter to assess over-winter survival and cause specific mortality since 1998. During winter 2018–2019, 42 fawns and 35 does were radio-marked and monitored.

Population Surveys and Monitoring

No population surveys occurred in the PMU during this reporting period. The last full survey was conducted in 2011 with a population estimate of 33,477 mule deer.

Inter-specific Issues

Parts of GMUs 21 and 36B contain high densities of wintering deer. Current high elk densities may be having some impact on the area's capacity to sustain high densities of deer. This impact may be particularly pronounced during severe winters when deep snow moves elk down onto deer winter ranges. White-tailed deer, a potentially strong competitor, are mostly restricted to private lands along major riparian areas. Pronghorn, bighorn sheep, and mountain goat share some ranges but generally overlap little with mule deer. Livestock rangeland grazing, another potential source of competition, has generally remained constant in recent years.

Predation Issues

Black bear densities appear to be moderate in PMU 4. Mountain lion densities are at least moderate, probably at least in part due to elk densities (elk calves are generally a primary prey

for Mountain lions). Coyotes are common and have an unknown impact on deer populations. Bobcats, red fox, and golden eagles also occur in the area but are not thought to account for significant predation on deer. Gray wolves are well established and believed to be relatively stable in this PMU. The addition of wolves will likely have an impact on black bear, mountain lion, and coyote populations. At some level, predation could benefit deer herds to the extent that it reduces elk competition and keeps deer herds below habitat carrying capacity where they can be more productive. However, excessive levels of predation can also suppress prey populations to undesirably low levels. At this point, the net impact of predation with the new mix of large predators is unclear. Over the past 10 years, the number one cause of mortality on mule deer has been malnutrition, which is a result of harsh winter conditions.

Winter Feeding and Depredation

Winter feeding occurred in winter 2016-2017 in GMU's 33 and 35 along the South Fork Payette River. Twenty-two feed sites were scattered between Garden Valley and Lowman that were used by both deer and elk. A total of 15 tons of alfalfa pellets fed approximately 440 deer and 560 elk between January and April. No winter feeding occurred in the PMU during winter 2018-2019. Prior to 2016-2017, winter feeding had not occurred in the PMU since 2008.

Hunting and Harvest Characteristics

Total harvest in PMU 4 in 2018 was estimated at 2,855 mule deer based on mandatory harvest report cards. This represents a 61% decrease in harvest from 2016 (4,801) and is 6% lower than the previous 10-year average of 2,935. Total hunter numbers were estimated at 11,157 in 2018 compared to 12,054 hunters in 2017. An average of 43% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 30% hunter success rate (Figure 6).

Disease Monitoring

No active disease monitoring occurred in PMU 4 during the reporting period. Lymph node samples may have been collected from mule deer at hunter check stations to test for Chronic Wasting Disease, which is not currently found in Idaho.

Management Discussion

Annual herd composition surveys are conducted in GMUs 21, 28, 33, 35, 36A, 36B, 49, and 50. Survey methodology was changed in 2008 and population estimates for these GMUs were conducted in 2011 (change from sub-sampled trend counts to complete population counts). The most productive deer herds are those maintained at a level well below carrying capacity. Better information is needed to identify appropriate deer densities that will maintain optimum productivity and harvest. Impacts of elk on mule deer production and survival are suspected, but not quantified. Potential impact of the new mix of large predators is unknown.

Mule Deer

Central Mountains PMU 4 (GMUs 21, 28, 33, 34, 35, 36, 36A, 36B, 49, 50)

Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Maintain	Increase
Hunter Days	>50,000	>50,000

Square Miles =	8,145	3-Year Averages	
% Public Land =	91%	Hunters per square mile =	1.41
Major Land Type =	Forest/Rangeland	Harvest per square mile =	0.52
		Success Rate =	29%



Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer		33,477								

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	62	56	70	ND	72	67	62	48	71	
Buck:Doe	18	21	26	ND	30	31	26	19	18	
Fawn Survival	0.69	0.46	0.55	0.42	0.47	0.56	0.37	0.28	0.53	0.49
Adult Doe Survival	0.91	0.87	0.82	0.81	0.91	0.89	0.84	0.79	0.98	0.90

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
 Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	9,876	46,447	476	1,777	35%
2010	9,406	42,439	517	1,923	30%
2011	8,866	41,937	359	1,783	36%
2012	8,672	39,291	368	1,892	38%
2013	10,024	45,097	353	2,358	39%
2014	11,948	53,973	554	2,742	39%
2015	12,919	58,431	628	3,690	42%
2016	11,193	56,189	556	3,945	42%
2017	12,054	63,009	368	2,399	44%
2018	11,157	57,614	383	2,472	42%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
21	1,226	ND	1,104	1,284	459	1,273	ND	1,218	1,223	1,072
33	2,186	1,971	1,734	ND	ND	ND	1,546	ND	ND	ND
36B	1,840	2,163	1,963	1,568	1,993	2,210	1,721	2,272	2,348	2,344
50	7,063	ND	5,083	5,703	ND	7,983	ND	6,941	ND	ND

Note: ND = no survey data available

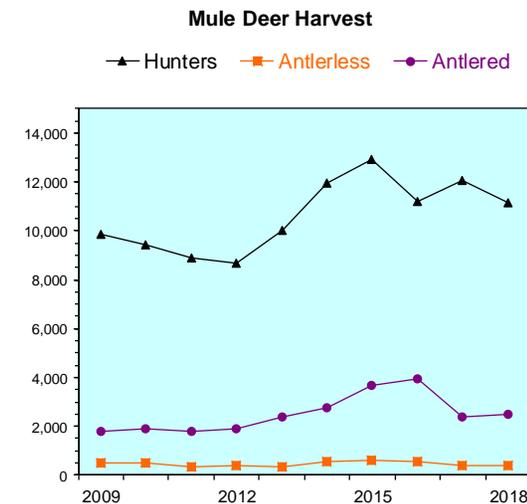
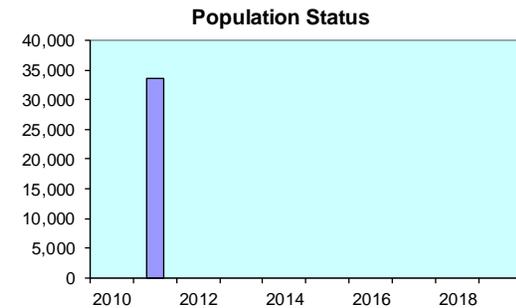


Figure 6. Central Mountains Mule Deer PMU Status and Objectives.

BOISE RIVER

PMU 5 (GMU 39)

Historical Background

This PMU represents one of the major deer PMUs in the State. In the late 1800s, deer herds were reduced by extensive meat hunting throughout the area. Hunting was restricted in the early 1900s. The subsequent increase in deer herds led to large winter mortality and concern for the status of vegetation on deer winter range.

Management Objectives

Objectives for Boise River (PMU 5, Figure 7) are to maintain over 30% of the total buck harvest as mature bucks with ≥ 4 points and maintain buck:doe ratios from herd composition surveys above the statewide minimum of 15 bucks per 100 does.

Habitat Management and Monitoring

Seasonal habitat needed by mule deer encompasses much of the Boise River drainages and tributaries of the Middle Fork Boise River. The majority of mule deer summer on land administered by USFS. Mule deer typically spend summers in forest habitats and move to lower mountain shrub or sagebrush/grass ranges during winter. Logging, grazing, and fires have substantially affected the condition of these ranges. Logging activity has increased shrub fields and provided increased forage for mule deer. The effect of fire on summer ranges has been positive, improving forage conditions for deer. Conversely, effects of fire on low-elevation winter ranges have been more negative. In many cases, fires have reduced important mule deer forage species such as bitterbrush and sagebrush. The proliferation of noxious weeds poses an additional threat to mule deer winter range.

In the Boise area, expansion of home developments onto mule deer winter range has increased markedly since 1990. This urban development is impacting wintering areas of one-third of the mule deer herd in PMU5. More recently, proposals to develop the Danskin Front may impact an additional one-third to one-half of the mule deer winter range in this PMU.

Biological Objectives

Population performance in this area is closely associated with winter severity and body condition of deer when entering the winter period. The percentage of 4+ point bucks was 28% in 2018. Fawn:Doe ratios in December 2018 was 67:100, 18% lower than 2017. Fawn survival in 2018–2019 was 41% and doe survival was 89%. There was some concern about carrying capacity due to an increasing population. However, it is difficult to measure carrying capacity as it can change annually. Fawn survival was only 34% during 2016–2017 due to cold, snowy winter, nearly 50% below the 10-year average, but was followed by high fawn:doe ratios in December 2017 (82:100) followed by lower fawn:doe ratios in 2018 (67:100). Fawn monitoring information for the winter of 2018-2019 indicated fawn survival was 41%. Fawn survival usually fluctuates due to body condition going into winter and winter weather conditions.

Capture, Radio-mark and or Telemetry

Fawns have been captured and radio-collared on BRWMA since 1998 to ascertain over winter survival, cause-specific mortality, recruitment, and general seasonal movements. In 2006, does were also radio-collared to ascertain survival. During winter 2013, we increased our total sample size to determine overwinter fawn survival from 25 to 50 fawns following the Pony/Elk fires. Twenty-five fawns were captured on Boise River WMA (BRWMA) and 25 fawns at Black's Creek portion of BRWMA in 2014, 2015, and 2016. From 2017 through 2019, we spread between 30 and 50 collars amongst BRWMA, Blacks Creek, and along the Danskin Front. In 2014, we switched from using primarily VHF collars to GPS collars. The information gathered has helped improve our overall knowledge of mule deer migration patterns across GMU 39. The majority of deer captured at Blacks Creek and along the Danskin Range spend their summer in GMU 43 along the South Fork Boise River, whereas mule deer captured at BRWMA spend summers between Sunset Lookout, Graham, and Atlanta in GMU 39.

Population Surveys and Monitoring

Sightability surveys were conducted in winter 2018 with a population estimate of 28,600 mule deer. This is 19% higher compared to 2010 and well above the population threshold of 20,000 deer to issue antlerless tags. This population estimate in conjunction with herd composition data, survival data, and harvest data will be used in an Integrated Population Model (IPM) to predict future population fluctuations.

Inter-specific Issues

Elk densities are relatively high throughout the area. However, they do not appear high enough to limit mule deer numbers as over-winter survival of mule deer fawns has generally been high. Instead, it appears there may be carrying capacity issues as mule deer fawn survival was <50% during the very mild winter of 2007 and only 67% during winter 2011 when the first snow did not fall until late January 2012. More recent information suggests that previous year's summer and fall precipitation affects over-winter fawn survival. Lower fawn survival in 2006-2007 and 2010-2011 may have been a result of poor body condition due to inadequate late summer and fall forage. Intensive livestock grazing is present on much of the range. Competition among species is largely unknown.

Predation Issues

Bobcats, coyotes, mountain lions, black bears, and wolves occur throughout the PMU. There are ≥ 5 wolf packs in PMU 5. Several years of regulated wolf harvest has reduced the overall wolf population in the PMU. The impact of these large predators on mule deer is largely unknown but under investigation.

Winter Feeding and Depredation

Winter feeding is relatively uncommon in this PMU. Winter feeding last occurred during winter 1992-1993.

Hunting and Harvest Characteristics

Total harvest in PMU 5 in 2018 was estimated at 3,608 mule deer based on mandatory harvest report cards. This represents a 4% decrease in harvest from 2017 (3,757), and 6% lower than the previous five-year average of 3,784. Total hunter numbers were estimated at 14,058 in 2018 compared to 15,099 hunters in 2017. During 2016–2018, an average of 35% of the bucks harvested have been 4-point or larger with a 30% hunter success rate (Figure 7).

Disease Monitoring

Periodic testing for Chronic Wasting Disease has occurred at the Mores Creek Check Station during the past 5 years. In 2017, a focused effort to test for CWD occurred in West Central Idaho, including GMU 39. No CWD sampling occurred in GMU 39 during this reporting period.

Management Discussion

Herd composition counts are conducted annually in GMU 39. Sightability surveys occurred every 2–3 years until 2005. A full survey occurred in winter 2018. Information on over-winter fawn survival has been collected since 1998 and annual adult doe survival since 2006. Accurate harvest information, annual herd composition counts (especially fawn:doe ratios) and annual doe and fawn survival data will continue to be important information required to effectively manage this deer herd.

Mule Deer Boise River PMU 5 (GMU 39)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal		
Hunter Days	>40,000	>40,000

Square Miles =	2,444	3-Year Averages	
% Public Land =	76%	Hunters per square mile =	5.81
Major Land Type =	Forest/Rangeland	Harvest per square mile =	2.50
		Success Rate =	29%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer	23,039								28,599	

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	86	76	62	60	64	65	45	82	67	
Buck:Doe	25	17	16	13	19	21	23	7	19	
Fawn Survival	0.69	0.47	0.60	0.60	0.68	0.65	0.53	0.34	0.61	0.41
Adult Doe Survival	0.86	0.86	0.89	0.92	0.91	0.95	0.92	0.93	0.93	0.89

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	11,587	49,594	1,146	1,787	29%
2010	11,438	50,612	910	1,526	28%
2011	11,785	52,199	697	1,210	35%
2012	10,660	44,701	968	1,788	38%
2013	11,655	47,780	718	1,649	32%
2014	13,141	51,960	808	1,865	36%
2015	14,015	59,561	1,268	2,808	37%
2016	13,426	56,595	1,195	3,614	41%
2017	15,099	65,730	930	2,827	35%
2018	14,058	63,388	941	2,667	28%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
39	22,840	ND	ND	26,058	ND	27,800	ND	26,569	ND	ND

Note: ND = no survey data available

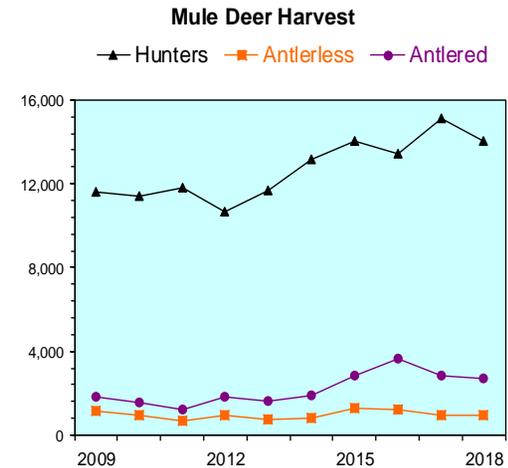
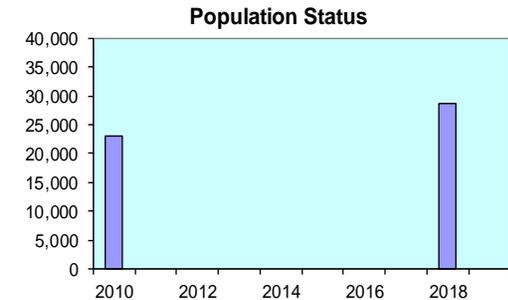


Figure 7. Boise River Mule Deer PMU Status and Objectives.

SMOKY-BENNETT

PMU 6 (GMUs 43, 44, 45, 48, 52)

Historical Background

During the late 1800s and early 1900s, mule deer populations in the Smoky-Bennett PMU were reduced to very low levels by unregulated harvest. Miners, market hunters, and other inhabitants of the area relied heavily on deer and elk meat. Mule deer habitat was also greatly altered during this period by livestock use. Dense shrub fields dominated by sagebrush and bitterbrush, replaced plant communities dominated by grasses. This pronounced change in habitat, combined with restrictions on deer hunting, prompted increases in deer numbers. Hunting seasons were closed or very conservative through 1940. At that time, winter ranges were considered to be over-browsed and of diminishing value for mule deer. In response to high deer densities, hunting seasons were designed to reduce deer numbers. Deer population levels remained strong through the 1950s and 1960s, but by the mid-1970s the number of deer had begun to decline significantly. Following a prolonged period of mild winters, deer numbers rebounded during the late 1980s. The severe winter of 1992-1993, compounded by deer entering the winter in poor physiological condition due to extreme drought on summer ranges, resulted in high overwinter mortality of fawns and bucks, with the population subsequently declining by approximately 50%. Since 1993, deer numbers have increased in this area, and aside from a few dips in the population due to harsh winters, have recently begun to attain numbers similar to those seen in the late 1980s and early 1990s.

Harvest management includes both general (GMUs 43 and 48) and controlled (GMUs 44, 45, and 52) hunting seasons. The controlled hunts are very popular with sportsmen desiring quality bucks, high hunter success, low hunter density, and the opportunity to observe many deer. The Bennett Hills (GMU 45) has had controlled hunting seasons since 1972 and has some of the most highly sought-after mule deer permits in Idaho. After the 1993 population decline, liberal antlerless hunts were maintained in GMUs 43, 44, and 45 to slow deer population growth and allow recovery of deteriorated winter ranges in GMU 45.

Prior to 2008, the management objective was to maintain about 8,000 deer in the King Hill trend area. At this population level, which is less than the expected maximum biological carrying capacity, depredations are minimal, winter range use is appropriate, and reproductive performance is higher than many other southern Idaho deer herds. Despite relatively liberal antlerless harvest, the estimated population in the King Hill trend area increased by 80% from 1994–1999. From 2000–2007, trend area deer numbers were stable and averaged 7,684 deer. After a severe winter in 2008 the estimated number of deer in the trend area declined to approximately 6,000, and antlerless permits were reduced by 48% from 2,500 to 1,300. In recent years, harvest management has been designed to slow the rate of growth near the Blair Fire area to benefit recovery of the habitat and maintain the overall health of the deer herd. In 2017, 1,250 antlerless permits were authorized in the PMU, in addition to a few either-sex permits and either-sex youth hunts during general seasons.

Management Objectives

Deer populations in Smoky Bennett (PMU 6, Figure 8) will be managed to maintain or exceed 20 bucks per 100 does in the pre-winter population and >45% four-point or larger bucks in the October harvest.

Habitat Management and Monitoring

This PMU encompasses about 5,487 mi² of which 24% is managed by USFS, 49% by BLM, 5% by Idaho Department of Lands (IDL), and 22% is private land.

Most of GMU 52 and the southern portion of GMU 45 is arid semi-desert dominated by sagebrush-grass. The Mount Bennett Hills in GMU 45 is a low range of mountains or high plateaus consisting of sagebrush-grass and mixed mountain shrub communities with small pockets of aspen and Douglas fir on northern exposures and more mesic sites. The Bennett Front from Bliss Point to Teapot Dome in GMU 45 provides nearly all of the winter range in this PMU. The number of wintering deer using the Picabo Hills and Black Butte Hills in GMU 52 has declined in recent years. These declines could be a result of a shift in deer migration patterns caused by wildfires in the early 1990s that burned the Picabo Hills and Thorn Creek. These fires were followed by high mortality of wintering deer after the winter of 1992–1993. Additionally, anecdotal evidence suggests that human disturbance (i.e., shed hunting) of the winter range has increased.

The remained portions of the PMU (GMUs 43, 44, and 48) include the Soldier, Boulder, and Smoky Mountains. Mountain shrub and mountain big sagebrush communities are common on south-facing exposures while northern exposures are timbered.

Grazing by cattle and domestic sheep is the primary land use on public and private lands. Conflicts tend to be localized rather than widespread and include excessive use of forage on winter ranges and riparian area degradation. Additionally, outdoor recreation, including hiking, backpacking, mountain biking, snowmobiling, backcountry skiing, and shed hunting are increasing in popularity in the area, leading to year-round activity throughout mule deer ranges. Working with land management agencies to minimize disturbance to wintering mule deer will be important as human populations and recreational use continue to grow in the area.

Overall, habitat security for deer during hunting season is good in GMUs 43 and 48. Seasonal road closures implemented primarily for elk security also benefit mule deer. Conversely, cover is relatively open and road densities are higher in GMUs 44, 45, and 52, necessitating controlled hunts to maintain the desired buck age structure. Motorized access to Bennett Hills winter ranges is presently unregulated and may be affecting deer use of available habitat. Motorized use can displace deer from preferred areas and can cause deer to expend critical energy reserves needed to survive the winter and produce healthy fawns.

Habitat conversion is an overarching concern in this PMU on both summer and winter ranges. Fire suppression and in some cases livestock use, has caused a general decline in the health of aspen communities as stands become more decadent and/or are being replaced by conifers. Winter ranges, primarily in GMUs 45 and 52, were once dominated by sagebrush-grass communities with a moderate bitterbrush component. Decreasing quality of winter ranges due to

establishment of invasive plant species that are of little to no forage value for mule deer, and increasingly common, high intensity fires that propagate the spread of invasive plant species, particularly medusahead rye and cheatgrass, present a serious concern to the future health of the habitat. Rehabilitation and protection of these very important winter ranges will require careful long-term planning that will maintain adequate browse for wintering deer and improve understory vegetation. Conservation easements and/or acquisition of private lands in strategic locations would also help increase or maintain winter carrying capacity for deer. Currently, private interests own or control access to important summer and fall habitats in GMUs 44 and 45. This has been a subject of much concern by hunters unable to gain access to areas they wish to hunt. On the other hand, timber harvest and associated road-building activities was historically prevalent in portions of GMU 43. Access regulation will continue to be an important issue for deer and elk management, with increased access frequently leading to more conservative and restricted hunting season frameworks.

In 2011, the Blair Fire burned nearly 40,000 acres of important winter range that supports 5,000-6,000 deer in most winters. Although rehabilitation efforts have been substantial, the observed increases in medusahead rye and cheatgrass are a serious concern for the long-term health of the habitat. Human access to winter ranges was limited to foot traffic only during the first 2 years following the fire to reduce disturbance to deer and protect rehabilitation efforts. In addition, agreements were signed with several nearby farmers to allow deer unlimited access to winter wheat fields. Anecdotal reports suggested heavy deer use in the areas closed to motorized access with subsequent abandonment of the areas after they were reopened, supporting the premise that winter access management would benefit wintering deer in this area.

Biological Objectives

Prior to the decline in deer in 1993, deer populations exceeded winter range carrying capacity, and damage to private property was extreme in some years. The short-term management goal has been to maintain deer populations lower than 1988-1992 levels using antlerless harvest.

Population Surveys and Monitoring

Complete aerial surveys of winter ranges in PMU 6 were conducted during 6–14 February 2008, 6–12 February 2012 and most recently, 17 January–5 February 2018, to obtain a total mule deer population estimate. The estimated population in 2018 was 16,358; 24% higher than the 2012 estimate of 13,251.

Herd composition survey data suggested a decline in reproductive performance measured in December from 78 fawns:100 does (1973–1992) to 65 fawns:100 does (1993–2012) to 60 fawns:100 does (2012–2016). This ratio increased in 2016 and 2017. In December 2016, a ratio of 64 fawns:100 does was observed, and in December 2017, a ratio of 74 fawns:100 does was observed. The observed December 2017 buck to doe ratio was 32 bucks:100 does, above the objective of 20 bucks:100 does. Survey numbers in 2018 showed another dip in both fawn and buck:doe ratios, with 59 fawns:100 does and 24 bucks:100 does. (Figure 8).

Capture, Radio-mark and or Telemetry

Beginning in 2014, intensive collaring efforts were implemented statewide as a part of the Department's mule deer population monitoring program. In the Smoky-Bennett PMU, adult does and 6-month old fawns were captured and fitted with GPS radio collars in GMU 45. As temporary fawn collars are shed or animals are harvested or die, collars are deployed to maintain a total of 60 collars within the PMU. Additional biological data is collected at the time of capture, including fawn weight, chest girth and hind foot length, age-estimates, pregnancy status, and body condition. This information, along with collar data, is useful in monitoring survival rates, understanding movement patterns, and informing future management and research decisions. During the 2018-2019 reporting period, 11 fawns were collared in GMU 52 in the Picabo Hills and near Thorn Creek. In GMU 45 18 fawns and 2 adult does were collared predominately around Little City of Rocks and King Hill. Overwinter fawn survival was 48%, while adult female survival was 96%.

Inter-specific Issues

PMU 6 supports a substantial population of elk, in addition to healthy moose, pronghorn, and at higher elevations, mountain goat populations. The relationship between deer and elk in this habitat is presently unclear, but research in other areas has suggested that exclusion of mule deer by elk from high quality habitats may occur under certain environmental scenarios (Atwood et al. 2011). In 2008 nearly 1,000 elk were observed during the February deer survey, and an overlap in winter use areas was noted. Approximately 2,500 elk were observed on an elk sightability survey in January 2015 in GMUs 45 and 52. Changes in traditional habitats and animal densities could lead to subsequent changes in interactions between elk and mule deer on winter ranges. On the Bennett Hills deer winter ranges, mule deer will retain management priority over elk if there are competitive concerns during winter. Most of the pronghorn population from the Camas Prairie and northern portion of GMU 52 are assumed to migrate to Bennett Hills winter ranges and co-occupy winter habitat with mule deer. Mule deer and pronghorn will receive equal management consideration on these winter ranges.

Cattle and domestic sheep have imposed the major forage demand in this PMU since the 1870s. Excessive use by cattle and domestic sheep severely damaged soil and vegetation in the late 1800s and early 1900s. Today, livestock use has been reduced to less than 15% of historic use and competitive concerns remain but tend to be more localized.

Predation Issues

Mountain lions, coyotes, black bears, bobcats, and wolves are potential predators on mule deer in the PMU. In recent years, mountain lion populations are believed to be stable. Coyote numbers are believed to have increased in the past 30 years; however, they are subject to unregulated hunting and periodic control activities by USDA Wildlife Services. Black bear numbers have increased slightly in recent years but densities are considered relatively low. Wolves inhabit the PMU and are subject to frequent control actions because of depredations on domestic sheep. Elk are the major prey item taken by wolves, and wolf predation is not presently considered an important mortality factor in the deer population.

Winter Feeding and Depredation

Supplemental winter feeding of deer has not occurred in the past few years and is not considered an important issue in this PMU. Depredation problems can become acute during severe winters in the King Hill/Bliss areas of GMU 45, where private land used for growing crops and pasturing livestock occurs along the lower perimeter of deer winter range. On the Camas Prairie (GMUs 44 and 45), summer depredation problems on growing alfalfa and other crops are common, particularly during drought years.

Hunting and Harvest Characteristics

Total harvest in PMU 6 in 2018 was estimated at 2,987 mule deer based on mandatory harvest report cards. This represents a 10% increase in harvest from 2017(2,705) and is 11% lower than the previous five-year average of 3,353. Total hunter numbers were estimated at 8,104 for 2018 compared to 8,280 hunters for 2017. An average of 49% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 37% hunter success rate in 2018 (Figure 8).

Disease Monitoring

The Smoky-Bennett PMU was a target zone for chronic wasting disease (CWD) sampling in 2017. Lymph nodes were collected from hunter harvested, road-killed, and incidental mortalities, as well as opportunistically from collared animals that died during the sampling period. While the PMU was not a part of the targeted rotational CWD sampling schedule during the 2018 reporting period, samples were still collected whenever the opportunity presented itself. No cases of CWD were detected in the PMU during this reporting period. The Smoky-Bennett PMU will continue to be sampled on a rotational schedule in accordance with the statewide CWD monitoring protocol.

Management Discussion

In 2008 a new mule deer population monitoring protocol was implemented. Instead of annual green-up counts of deer within the King Hill trend area, complete surveys are now conducted every 4-5 years to provide estimates of the total deer population. Samples of radio-collared fawns and does will be monitored annually to provide survival estimates. Pre-winter herd composition surveys will be conducted to monitor fawn production and the buck to doe ratio.

The Bennett Hills has one of the highest wintering deer densities in Idaho and winters a high proportion of the mule deer in the Magic Valley Region. There is a need for improved monitoring of winter range condition and trends. Antler shed hunting has become extremely popular on Bennett Hills winter ranges. There is concern that shed-antler hunters using motorized vehicles to travel cross-country are causing increased energy expenditures by deer during late winter and early spring when energy reserves are lowest. Additionally, private landowners have experienced increased trespass incidents, vandalism such as cutting of fences, and displacement of animals onto private property. The Bennett Hills are slated for an updated travel management plan in the near future that will focus on seasonal management of motorized and non-motorized use.

The growing radio telemetry dataset from collared mule deer within the region is currently being used for the statewide Integrated Population Model (IPM). The telemetry data is being used to identify key highway crossing areas and migration corridors for mule deer. U.S. Highway 20 which connects Blaine and Camas counties with Mountain Home and Boise has been identified as a hot spot for wildlife-vehicle collisions, and as such, will be receiving greater attention for prioritizing mitigation efforts of roadway mortalities.

Mule Deer Smoky Bennett PMU 6 (GMUs 43, 44, 45, 48, 52)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase	Increase
Hunter Days	>20,000	>20,000

Square Miles =	3,982	3-Year Averages	
% Public Land =	72%	Hunters per square mile =	2.06
Major Land Type =	Rangeland/Forest	Harvest per square mile =	1.30
		Success Rate =	37%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer			13,251						16,358	

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	60	69	63	48	ND	57	64	74	59	
Buck:Doe	22	49	41	35	ND	39	30	32	24	
Fawn Survival	0.77	0.33	0.73	0.69	0.51	0.70	0.34	0.58	0.66	0.48
Adult Doe Survival	0.86	0.86	0.91	0.93	0.84	0.92	0.88	0.94	0.93	0.96

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	5,604	22,712	849	1,204	48%
2010	5,751	23,903	898	1,314	50%
2011	6,788	27,219	1,347	1,336	51%
2012	6,104	24,951	1,119	1,428	52%
2013	6,562	26,582	1,072	1,432	50%
2014	8,290	34,982	1,344	2,233	50%
2015	9,486	39,449	1,305	2,727	50%
2016	8,256	38,068	1,121	2,341	50%
2017	8,280	38,330	1,023	1,682	50%
2018	8,104	36,326	1,033	1,954	46%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
45	6,550	9,165	8,167	8,042	8,195	6,360	7,878	7,206	8,214	7,380

Note: ND = no survey data available

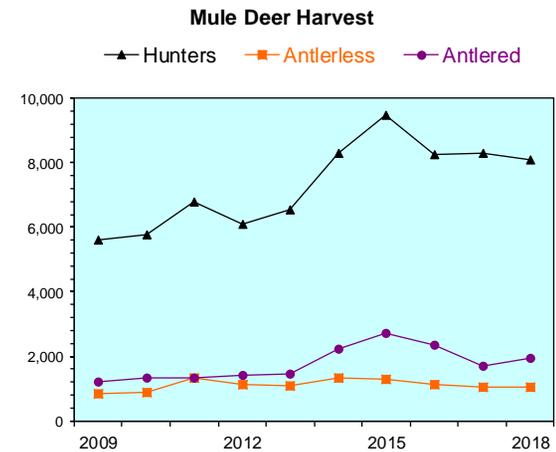
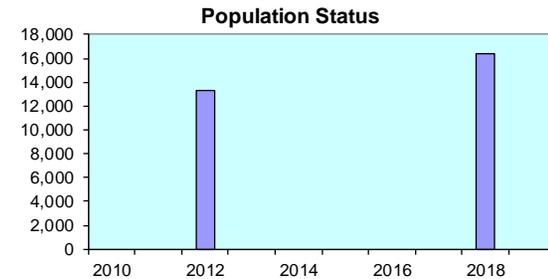


Figure 8. Smoky Bennett Mule Deer PMU Status and Objectives.

OWYHEE

PMU 7 (GMUs 40, 41, 42, 46, 47)

Historical Background

During the 1930s and 1940s, deer populations were low and hunting opportunities were very limited in this PMU. By the 1950s and 1960s, deer numbers had increased and depredation complaints were common. Deer seasons were liberalized and, in some years, extended to mid-December. Liberal hunting seasons continued into the early 1970s when an area-wide decline in deer populations resulted in more conservative hunting seasons. During the 1980s, harvest averaged 1,500 bucks and a few hundred does per year. Since 1991, hunters have been restricted to taking two-point or smaller bucks during the general season in GMUs 40, 41, and 42, followed by a controlled hunt for mature bucks. GMU 47 has been managed primarily with controlled hunts since 1970, and general seasons have been maintained in GMU 46.

Owyhee deer herds use habitat in Oregon, Nevada, and Idaho. A portion of the deer herd in western Owyhee County migrates to Oregon to winter. On the eastern side of Owyhee County, substantial numbers of deer migrate north from Nevada to winter in Idaho. This interstate mixing of deer populations makes evaluation of the status of Idaho's herd difficult.

Management Objectives

The Owyhee GMUs will be managed to provide general opportunity in GMU 46, and limited general opportunity with the antler point restriction in GMUs 40, 41, and 42. GMUs 40, 41, 42, and 47 will provide hunter opportunity for mature bucks through controlled tags. GMU 47 will allow a general archery only season. Controlled youth antlerless tags will be issued for agricultural areas of GMUs 40 and 41 to help address deer depredations.

Habitat Management and Monitoring

The Owyhee GMUs are primarily public land (85%) administered by the Bureau of Land Management, and in smaller part the Idaho Department of Lands. The GMUs are primarily high-desert habitat dominated by sagebrush, grass, and/or juniper. Isolated mountain ranges include mixed mountain shrub, aspen, and/or fir.

There have been major changes in mule deer habitat over the last 30 years. Fires have degraded large portions of winter ranges in GMUs 40, 41, and 46. Historically, burned areas were reseeded with crested wheatgrass, or invaded by cheatgrass and medusahead with limited browse to support wintering deer. In 2007, the Murphy Complex Fire burned more than 500,000 acres in GMUs 41, 46, and 47 including important winter range. In 2015, the Soda Fire burned 283,000 acres of winter range in GMU 40. Fire rehabilitation efforts were substantial for both fires, but deer numbers may decline until the habitat has recovered. GMUs 41, 42, and 46 have been affected by numerous small wildfires in FY19. In GMUs 40 and 42 there has been substantial encroachment of juniper into former summer and winter ranges. In several areas where juniper has replaced more important browse species, the number of wintering deer appears to have been reduced.

Biological Objectives

Very little mule deer aerial survey data exists for this PMU. Population estimates are not derived from aerial surveys due to expansive land area, dispersed groups of deer, poorly defined winter range, difficult winter access, and interstate migratory patterns.

Capture, Radio-mark and or Telemetry

We continued the 2 mule deer studies in GMUs 40 and 41 to determine spatial and habitat use of does, and harvest vulnerability of bucks. In 2019, we captured 26 adult does and fitted them with GPS radio-collars for the spatial use study. We captured 4 yearling and adult bucks and fitted them with GPS collars for the harvest study. Additional bucks will be captured in summer and winter 2019-2020 for the buck harvest and behavior study.

Population Surveys and Monitoring

We conducted no aerial population surveys during winter 2018-2019, but did conduct an aerial herd composition flight in GMU 40. Due to weather constraints we were unable to collect reliable buck data for buck:doe ratios, but we observed a ratio of 41 fawns per 100 does. The fawn:doe ratio was lower than those observed in northern units in the region, but as this was our first year of flights in GMU 40 we have no data from previous years for comparison.

Inter-specific Issues

Currently, elk populations are relatively small throughout the year, but greater numbers of elk use part of this PMU seasonally. The Nevada Division of Wildlife (NDOW) conducted its most recent aerial survey on the Idaho/Nevada border in 2017. A total of 2,120 elk were counted west of the Bruneau River in Idaho (primarily GMU 41), and 1,277 elk east of the Bruneau River (in GMUs 46 and 47). Elk numbers increased substantially in GMUs 46 and 47 following the Murphy Complex Fire due to the expansive grasslands that were created. GMU 40 also has a growing elk population, but no herd survey information is currently available. At present population levels, these elk herds do not constitute a major management concern for mule deer; however, elk tags were increased for the 2019 season to slow elk herd growth.

Livestock grazing is the predominant land use in the area. In the early part of the twentieth century, excessive grazing by livestock combined with fire suppression severely altered plant communities to favor shrubs, and mule deer benefited. Extensive areas have burned during the past several decades, and much of the sagebrush steppe was invaded by cheatgrass and medusahead. The reestablishment of sagebrush to benefit deer may conflict with livestock grazing interests in some areas. Livestock numbers are currently significantly less than during the early part of the twentieth century, and serious conflicts are localized on winter ranges and critical riparian habitats.

Predation Issues

Coyotes, bobcats, and mountain lions are the large predators in this area. Mortality data from the first year of the collared deer studies suggested that mountain lion predation may be high enough to impact deer populations, but predation on adult does the second year of the study was lower. There are few wolves and no black bears in the Owyhee GMUs.

Winter Feeding and Depredation

The remoteness of winter deer herds has limited the demand for, and the ability to conduct, supplemental winter-feeding. No winter-feeding has occurred for many years in these GMUs. The Department will continue to work with the Regional Winter Feeding Advisory Committee to discourage winter-feeding by the public, and to identify any situations where feeding may be appropriate.

Hunting and Harvest Characteristics

Total harvest in PMU 7 in 2018 was estimated at 2,007 mule deer based on mandatory harvest reports. This represents a 15% increase in harvest from 2017 (1,743). The lower harvest in 2017 was likely due to higher than normal winter mortality due to extreme weather conditions the previous winter. Total hunter numbers were estimated at 6000 hunters in 2018 compared to 5,801 for 2017. Approximately 23% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 34% hunter success rate (Figure 9).

Disease Monitoring

Some sampling for Chronic Wasting Disease (CWD) was conducted annually at hunter check-stations in the Owyhee GMUs in previous years. In 2017, the Department initiated new CWD surveillance methods that increased sampling in focal GMUs, and rotated GMUs to be tested each year. We collected lymph nodes or obex to test 168 deer for CWD in the Owyhee GMUs in FY19. All test results came back negative.

Management Discussion

The primary data need for these GMUs is population information. Winter ranges contain a mixture of deer from Oregon, Idaho, and Nevada. We are currently evaluating alternative survey methods to sightability surveys to hopefully develop population metrics in the future. We will also continue our 2 deer studies in GMUs 40 and 41.

Mule Deer Owyhee PMU 7 (GMUs 40, 41, 42, 46, 47)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase	Increase
Hunter Days	>12,000	>17,500

Square Miles =	9,015	3-Year Averages	
% Public Land =	85%	Hunters per square mile =	0.63
Major Land Type =	Desert/Rangeland	Harvest per square mile =	0.27
		Success Rate =	33%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer										

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	ND									
Buck:Doe	ND									
Fawn Survival	ND	0.57	ND							
Adult Doe Survival	ND	0.95	0.89							

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	5,033	17,547	242	1,635	22%
2010	5,377	18,754	250	1,698	25%
2011	5,829	20,667	276	1,612	25%
2012	5,354	19,381	223	1,503	28%
2013	6,071	22,418	174	1,416	30%
2014	6,277	22,433	289	1,768	25%
2015	6,019	20,442	316	2,026	23%
2016	5,221	20,265	232	1,716	22%
2017	5,801	22,761	278	1,465	23%
2018	6,000	23,547	245	1,762	23%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	ND									

Note: ND = no survey data available

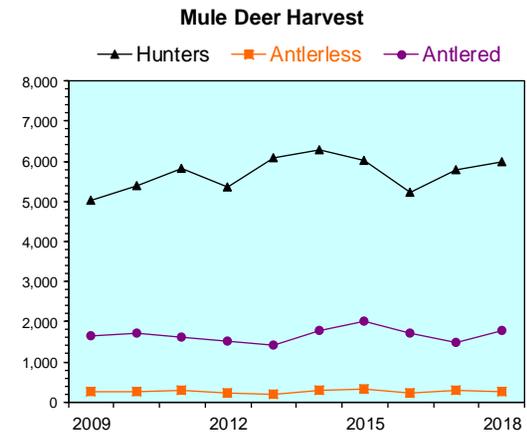
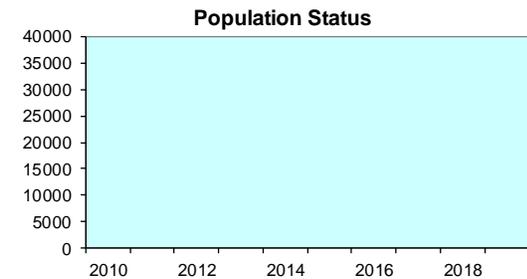


Figure 9. Owyhee Mule Deer PMU Status and Objectives.

SOUTH HILLS

PMU 8 (GMUs 54, 55)

Historical Background

During the early 1900s, mule deer populations in the South Hills PMU were very low, due in part to unregulated harvest. During the late 1800s and early 1900s, heavy use by domestic livestock greatly altered deer habitat. Shrub fields dominated by sagebrush and bitterbrush, replaced plant communities once dominated by grasses. This change in habitat set the stage for dramatic increases in deer numbers. Closed hunting seasons from 1909-1935 and very conservative seasons through 1940 allowed deer populations to increase. By 1950, deer numbers had reached an estimated 20,000 head in GMU 54, and winter ranges were considered severely over-browsed. Efforts were made to reduce deer populations with both general and controlled season frameworks. Following a significant decline in numbers during the mid-1970s, deer populations increased again during the late 1980s, a period of prolonged drought conditions and mild winters. During winter 1992-1993, deer populations declined by an estimated 35–40%. Deer had entered the winter in poor physiological condition and high over-winter fawn and buck mortality occurred. After the 1993 winter die-off, deer populations in this PMU continued to decline through 1997, before stabilizing from 1997–2003. Trend area surveys suggest that deer numbers increased substantially in 2004–2007 compared to 1997–2003 levels.

Since 1970, this PMU has been managed exclusively with controlled firearm seasons. These GMUs are very popular with sportsmen desiring quality, high hunter success, low hunter density, and the opportunity to observe many deer. Following the 1993 population decline, antlerless-only hunts were eliminated. Antlerless deer hunting resumed in GMU 55 in 2006 (100 permits) and in GMU 54 in 2009 (100 permits) following observed increases in deer numbers from 2004-2007. Currently, 380 antlerless permits are available in this PMU.

Segments of the deer populations exhibit interstate movements. In GMUs 54 and 55, there are migrations south to winter ranges in Nevada and Utah, respectively. Harvest management in Utah and Nevada has been compatible with the Department's management objectives. Important winter ranges in this PMU include Jim Sage (GMU 55), Willow Creek (GMU 55), Dry Creek (GMU 54), and Sugarloaf (GMU 54).

Management Objectives

Deer populations in the South Hills (PMU 8, Figure 10) will be managed to maintain or exceed 25 bucks per 100 does in the pre-winter population, and >35% bucks with four-point or larger antlers in the October harvest.

Habitat Management and Monitoring

This PMU is characterized by isolated mountain ranges surrounded by farmland and sagebrush-grass semi-desert. At low to mid elevations, juniper woodlands can be common, with mixed mountain shrub and aspen communities occurring along riparian areas and on some north- and east-facing slopes. At higher elevations, pockets of conifers (lodgepole pine, Douglas fir, and subalpine fir) and aspen occur on north- and east-facing aspects and more mesic sites. Important mule deer summer and winter ranges are primarily managed by the USFS and BLM. When deer

populations are high, depredation complaints on alfalfa and irrigated pasture are common in GMU 55.

Important habitat issues in this PMU include: 1) Succession, and in some cases livestock use, has caused a general decline in the health of aspen communities. Many stands have become decadent and/or are being replaced by conifers. Where the vigor and size of aspen communities can be improved, prescribed fire can be used to improve productivity. 2) Quality and quantity of winter habitat is considered to be limiting mule deer in this PMU. During the past 30 years, fire has altered much of the crucial habitat in GMU 54. The loss of extensive bitterbrush stands on the Dry Creek, Sugarloaf, and Buckbrush Flat winter ranges is expected to have long-term negative effects on deer populations. While sagebrush is beginning to reestablish on some of these winter ranges, bitterbrush recovery has been slow or nonexistent. In GMU 55, the distribution and density of juniper has increased on some winter ranges, replacing important browse for wintering deer. Management should favor the reestablishment and long-term maintenance of shrubs on winter ranges. Bitterbrush plantings should be undertaken in areas where natural recovery is not evident. Over the last decade, the USFS and BLM, in cooperation with the NRCS, the Department, IDL, and others, have implemented juniper management treatments throughout the PMU, primarily in an effort to improve habitat conditions for sage-grouse. However, several treatment areas, particularly in GMU 55 (Jim Sage and Cotterel Mountain areas), have resulted in improved habitat conditions for mule deer. 3) Due to the open nature of the habitat and high road/trail densities in some areas, habitat security for deer during hunting season is considered low to moderate, although some high security areas exist in both GMUs. Road densities are considered high in GMU 54 and moderate in GMU 55. Several motorized vehicle area closures have been implemented in GMU 54 to provide additional security habitat and non-motorized hunting opportunity. Additional motorized vehicle restrictions may be recommended to maintain quality-hunting opportunity and desired buck age structures in GMU 54.

Biological Objectives

In recent history the mule deer population in the South Hills PMU has been monitored via trend area surveys at the GMU level, sightability surveys at the PMU level, herd composition surveys, and annual radio collaring and survival monitoring efforts.

Following the 1993 decline in deer numbers, trend area counts remained relatively low through 2003, averaging 2,355 deer. Beginning in 2004, populations increased and from 2004–2007 trend area counts averaged 4,036 deer (Figure 10). Trend counts have not been conducted since 2007.

In the winter of 2009 the entire PMU was surveyed for the first time using our sightability methodology. This survey produced an estimate of 8,903 wintering deer. The PMU was surveyed again in 2017, producing an estimate 10,396 wintering deer.

Pre-winter composition data indicate a loss of reproductive performance in these deer herds prior to winter. In GMU 54, from 1974–1992 pre-winter fawn to doe ratios averaged 83 fawns per 100 does compared to 54 fawns per 100 does from 2008-2016. The buck to doe ratio in the PMU did not meet the objective of 25 bucks per 100 does in 2015, but exceeded it in 2016 (Figure 10).

Capture, Radio-mark and or Telemetry

As part of the Department's mule deer population monitoring program, adult does and 6-month old fawns are captured and fitted with radio collars. Biological information is then collected to answer questions related to survival, body condition, pregnancy, and habitat use. These periodic check-ups on populations give managers a feel for what is happening within these populations.

During the 2018–2019 reporting period, the Department monitored 40 adult female mule deer in the South Hills PMU. The 2019 annual estimated survival of adult does was 94%, above the five-year average of 85% from 2014–2018 (Figure 10). Since 2012, fawn survival has ranged from a low of 48% in 2017 to a high of 61% in 2016. There were no fawns or adult males monitored in the South Hills PMU during this reporting period.

Population Surveys and Monitoring

The survey protocol for monitoring mule deer populations in southern Idaho was revised beginning in 2000–2001 and again in 2007–2008. Future plans include the continuation of composition and complete PMU-wide sightability surveys, as specified by the current mule deer management plan.

Widely scattered deer distribution due to unseasonably warm and dry weather conditions hindered our ability to collect accurate pre-winter composition data in 2017. No sightability surveys took place in the South Hills PMU during this reporting period. Composition surveys were completed during this reporting period, with 53 fawns:100 does being estimated; a slight decrease from 2015 (62 fawns:100 does) and 2016 (55 fawns:100 does). The buck ratio of 23 bucks:100 does was also slightly lower than 2016 estimates (30 bucks:100 does), but higher than 2015 estimates (17 bucks:100 does).

Inter-specific Issues

Elk, black bear, and bighorn sheep were eliminated from these GMUs during the late 1800s and early 1900s. Today, a growing elk population exists in the PMU. There are no immediate concerns regarding competition between deer and elk, but this may change as elk populations increase. A small population of California bighorn sheep inhabit the Jim Sage Mountains in GMU 55 but pose no concern with mule deer management.

Livestock have imposed the major forage demand throughout these GMUs for over a century. Currently on public lands, livestock management is generally compatible with deer habitat management, although livestock use in some localized areas may be an issue

Predation Issues

Mountain lions, coyotes, and bobcats are potential predators on mule deer in PMU 8. Mountain lion populations increased markedly in these GMUs, presumably in response to the high deer populations in the late 1980s and early 1990s. Mountain lion harvest doubled, depredations on domestic sheep increased, and the frequency of reported mountain lion observations rose substantially. While the relationship between deer and mountain lions is unclear, mountain lions do not appear to be playing a major role in deer population dynamics. However, there are recent

indications from mountain lion hunters that mountain lion populations have increased, probably in response to increased mule deer populations. Coyote numbers are believed to have increased in the past 30 years; however, they are subject to unregulated hunting and periodic control activities by USDA Wildlife Services. The effect, if any, of coyote predation on mule deer population dynamics is unknown, but is not considered a significant threat to mule deer populations under typical weather regimes.

Winter Feeding and Depredation

Supplemental winter feeding of deer has not occurred and is not considered an important issue in this PMU. There was only 1 mule deer depredation complaint in GMU 56 during the 2018–2019 reporting period. Recreation activities (i.e., shed hunting, mountain biking, OHV use, etc.) in the spring time on important winter range has occasionally displaced deer onto private land and may be contributing to agriculture depredations in the Oakley area.

Hunting and Harvest Characteristics

Total harvest in PMU 8 in 2018 was estimated at 1,218 mule deer based on mandatory harvest report cards. This represents a 5% decrease in harvest from 2017 (1,274) and is 5% lower than the previous five-year average of 1,270. Total hunter numbers were estimated at 2,830 for 2018 compared to 2,758 hunters for 2017. An average of 52% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 46% overall hunter success rate in 2018 (Figure 10).

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved our CWD Response and Monitoring Plan in 2017. This plan identifies areas of high and moderate potential for CWD occurrence and the South Hills PMU is one of the areas identified as having a moderate likelihood of detecting CWD. The PMU will have a CWD testing protocol implemented at least once every 3 years. The protocol was implemented in this PMU during the 2018 reporting period. 25 mule deer were sampled and no animals tested positive for the disease.

Other disease concerns will be evaluated on a case by case and needs basis. Any animals that are showing signs of illness will be collected and sent to the health lab for testing.

Management Discussion

Periodic sightability surveys are needed to provide reliable data for population modeling and to monitor changes in winter distribution.

A better understanding of the relationship between road densities and buck survival during hunting season would improve our ability to make sound decisions about access and harvest management.

Antler shed hunting is becoming more popular on winter ranges in this PMU. There is concern that shed hunters using motorized vehicles to travel cross-country are causing increased energy expenditures by deer during late winter and early spring when energy reserves are lowest.

Additionally, landowners have experienced displacement of animals onto private property that may be attributable to increased shed hunting activity on adjacent winter range.

Mule Deer South Hills PMU 8 (GMUs 54, 55)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase	Increase
Hunter Days	>7,500	>10,000

Square Miles =	2,378	3-Year Averages	
% Public Land =	56%	Hunters per square mile =	1.14
Major Land Type =	Rangeland	Harvest per square mile =	0.82
		Success Rate =	46%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer								10,396		

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	60	45	50	47	ND	62	55	ND	53	
Buck:Doe	25	27	25	25	ND	17	30	ND	23	
Fawn Survival	0.70	0.34	0.59	0.48	0.49	0.59	0.61	0.48	ND	ND
Adult Doe Survival	0.89	0.98	0.78	0.80	0.90	0.78	0.80	0.89	0.92	0.94

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	2,845	14,382	259	870	49%
2010	2,897	13,382	302	904	44%
2011	3,098	14,852	289	821	46%
2012	2,973	13,947	356	863	48%
2013	3,014	14,052	340	809	51%
2014	2,769	12,486	356	920	45%
2015	2,535	11,138	357	945	45%
2016	2,583	12,732	369	909	46%
2017	2,728	13,704	332	942	57%
2018	2,830	13,869	341	877	54%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
54	1,745	1,678	1,217	1,306	1,314	1,133	2,018	2,027	ND	2,735
55	675	796	1,022	935	1,301	927	1,504	2,625	3,073	1,054

Note: ND = no survey data available

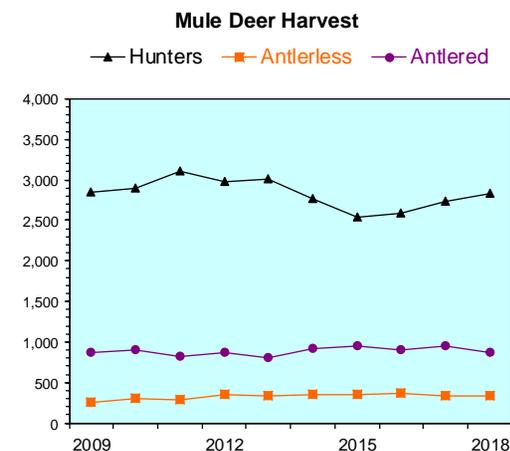
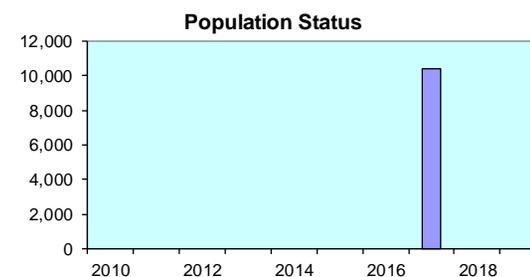


Figure 10. South Hills Mule Deer PMU Status and Objectives.

BANNOCK

PMU 9 (GMUs 56, 57, 70, 71, 73, 73A, 74, 75, 77, 78)

Historical Background

The mule deer population in the Bannock PMU has fluctuated widely since the mid-1800s. Deer numbers probably declined through the early 1900s, possibly due to unregulated harvest. By 1920, observations of deer were quite rare. Between 1920 and the early 1970s, deer numbers increased dramatically, interrupted briefly by significant winter mortality. Following a significant decline in numbers beginning in 1972, numbers again increased until the late 1980s. The population level attained during this second peak probably did not reach that attained during the 1950s to early 1970s. Overall, mule deer numbers in these GMUs appear to fluctuate widely over relatively short time periods.

Harvest management during the 1950s and 1960s was designed to maintain or reduce deer numbers in response to what was considered over-browsed winter ranges. Season frameworks in these GMUs (Appendix A) have varied considerably more than elsewhere in southeastern Idaho. Season lengths have varied from 3 days to 5 weeks. Either-sex opportunity has ranged from none to extra antlerless-only tags available in 1989 and 1990 for GMUs 70, 73, and 73A. Following the winter of 1992-1993, when significant winter mortality occurred, harvest management has been conservative.

Research in the mid-1980s found very low survival of bucks in GMU 73. A two-point only regulation, with short periods of any-buck hunting, was enacted there in 1997 after the buck:doe ratio fell below 10:100. In 2004, a four-point or greater regulation was enacted in GMUs 70 and 73 in response to public suggestions. However, the four-point restriction was removed in 2008 for GMU 70 and in 2009 in GMU 73 as data did not support continuing with an antler restricted season structure.

The 2018 general season dates in the Bannock PMU were the same as they have been since 2009 when the general any-weapon hunt was shortened, moving the end date from 31 October to 24 October. General any-weapon and archery hunting for antlered deer existed in GMUs 56, 71, 73A, 74, 75, and 77. GMUs 57, 73, and 78 also had general season hunting, but it was limited to the general archery season. General archery hunting for antlerless deer was available in all GMUs in the Bannock zone where general archery hunts existed. No any-weapon general antlerless hunting was available in the Bannock zone during this reporting period.

The controlled hunt structure for 2018 in the Bannock zone remained largely unchanged from the previous season. The last major changes occurred in 2015 when 2 new 5 tag antlered hunts were added to GMUs 70 and 73 that run from 10 October to 30 November. Additionally, a 40 tag either-sex hunt was added to GMU 73 in 2015, running from 17–31 October. In 2014, a controlled antlered-only rotating muzzleloader hunt was implemented that was set to rotate between GMUs 68, 73A, and 74 and run from 16–30 November (in 2018 this hunt was in GMU 73A). Other any-weapon antlered-only controlled hunts that occurred in the Bannock zone included 2 hunts in GMU 57 (one hunt from 5–31 October and another from 15–30 November) that have existed since prior to 1970, hunts in GMUs 70 and 78 that began in 2008 and ran from 10–31 October, and an unlimited controlled hunt in GMU 73 (this hunt began in 2009, but was

made first choice only in 2015 in response to sportsman concerns about overcrowding) that ran from 10–16 October. An unlimited controlled archery hunt in GMU 70 that ran from 30 August–8 October (either sex hunting from 30 Aug.–30 Sept and antlerless from 1–8 Oct) was implemented in 2014 (this hunt was general prior to this time). Lastly, there were 2 extra antlerless controlled hunts in the Bannock PMU (one in GMU 73 and one in GMU 78; both initiated in 2017) and one antlerless controlled hunt in GMU 73 (started in 2014) that was initiated to manage depredating or other problematic deer. Many of these additions were in response to the objective in the 2008–2017 Mule Deer Management Plan to provide quality hunt opportunities in each region.

Major wintering areas in the Bannock PMU are: Pauline (GMU 70), Lead Draw to Walker Creek (GMU 70), Elkhorn Mountain (GMU 73), Malad Face (GMU 73), Samaria Mountain (GMU 73), Hansel Mountains (GMU 73), Rockland Valley (GMU 73A), Knox Canyon (GMU 73A), Juniper (GMU 56), the Hagler Canyon complex (GMU 56), and Sweetzer Pass (GMU 56), Eightmile (GMU 57), Blackrock Canyon (GMU 71), Portneuf Winter Range (GMU 71), the west facing slopes east of Downey (GMU 74), Hadley Canyon complex (GMU 74), Densmore Creek (GMU 74), and Treasureton (GMU 74), West Bear Lake (GMU 78), Grace Front (GMU 75), and the Oneida Narrows Complex (GMU 77).

Management Objectives

Harvest and population objectives for mule deer in Idaho are identified in the mule deer management plan. This includes objectives for hunter success, percent four-points in the harvest, and buck:doe ratios. Furthermore, these objectives vary based on whether general, quality, or high-quality hunts are offered. Most of the game management units in the Bannock PMU offer general any-weapon hunting opportunity and associated objectives include maintaining ~25% harvest success, >25% four-points in the harvest, and ~15 bucks per 100 does. The exceptions to this are GMUs 57, 70, and 78 where the only any-weapon opportunities are controlled hunts. The mule deer management plan specifies that these quality hunting opportunities should maintain ~50% harvest success, >40% four-points in the harvest, and ~25 bucks per 100 does. Assessment of the current population and harvest status can be found in the biological objectives and hunting and harvest characteristics sections of this report; however, many population and harvest parameters are tracked at the PMU level, reducing the validity of statistics from specific GMUs.

Habitat Management and Monitoring

This PMU represents the less productive habitats in southeastern Idaho. Lower productivity habitats combined with variable winter conditions undoubtedly cause mule deer numbers to vary considerably over time. Three main vegetation types predominate: sagebrush-grassland, aspen, and conifer. Other vegetation communities that are important to deer include mixed shrub communities, Utah juniper, and curlleaf mahogany. The current mix of vegetation cover types is a result of intensive grazing by livestock during the early 1900s and ongoing fire suppression efforts. These factors converted what was predominately perennial grass stands into shrublands with depleted or sparse understories. Given that current livestock grazing practices are much more conservative and designed to promote grass, and that the current shrublands are aging, it is believed that the quality of mule deer habitat probably peaked earlier in the twentieth century. The current conversion of aspen to conifer and replacement of mixed shrub and sagebrush communities by juniper will likely reduce habitat suitability for mule deer.

Approximately 41% of the land in the Bannock PMU is publicly owned. The BLM and USFS administer the majority of public land. The Fort Hall Indian Reservation makes up approximately 7%, while the remaining 52% is private. Private land is predominately used for rangeland pasture, small grains, and hay production. A substantial amount of private land has been enrolled in the Conservation Reserve Program (CRP). Depredation complaints are rare and generally limited to periods of high deer populations. Predominant land uses of the publicly owned land include livestock grazing and recreation. Of particular concern is the encroachment of human activity, either intense recreation and/or structural developments, on mule deer winter range. Developments from the west side of Pocatello south to Walker Creek in GMU 70 have reduced the potential wintering area for deer. Development along the Portneuf River, Hadley Canyon complex, Treasureton, Bear River Valley of GMU 77 and along the West Bear Lake winter range in GMU 78 will undoubtedly reduce the potential for wintering greater numbers of deer in these areas.

Other concerns include moderate to high road densities and, in some areas unrestricted ATV travel, likely resulting in a greater vulnerability of mule deer in this PMU. Use of motorized vehicles for hunting is prohibited in some, but not all GMUs. Motorized travel on the Caribou National Forest within this area is restricted to designated routes during the snow-free period of the year with the specific purpose of reducing impacts to wildlife habitat and reducing wildlife disturbance.

Biological Objectives

In the recent past, the department has monitored the mule deer population in the Bannock PMU via trend area surveys at the GMU level, sightability surveys at the PMU level, herd composition surveys and through repeated collaring and survival monitoring efforts.

Several trend surveys flown between 1999 and 2007 suggested a varying mule deer population, and declines over several years were a cause of concern at the time (Figure 11; Previous Trend Area Surveys). In the winter of 2015 the PMU was surveyed utilizing our sightability methodology and the estimated population size was 33,943. This was the first survey of the entire area and gave the department good baseline information. A previous survey was attempted during the winter of 2007–2008 but poor conditions led to this survey being incomplete.

The winter of 2010–2011 was extremely severe, likely causing population declines in the Bannock PMU. Overwinter fawn survival was not measured but was estimated to be low and adult doe survival was 73%. Following this, the 2011–2015 winters were very mild, resulting in high survival (Figure 11; Population Parameters) and likely an increased population size. The winter of 2016–2017 was again very severe, likely causing population declines in some areas (overwinter adult doe survival was 89% in the entire PMU but likely much lower than this in localized areas). Since 2011, estimated fawn:doe ratios have ranged between 53:100 and 76:100 in the Bannock PMU (it is expected that 66 fawns per 100 does is necessary to maintain populations with average winter mortality).

Capture, Radio-mark and or Telemetry

As part of the Department's mule deer population monitoring program, adult does and 6 month old fawns are captured and fitted with radio or GPS collars. Biological information is then collected to answer questions related to survival, body condition, pregnancy, and habitat use. These periodical check-ups provide managers with valuable data describing these populations.

During the 2018–2019 reporting period, the Department monitored 40 adult female mule deer in the Bannock PMU. Apparent overwinter survival of these individuals was 92%. There were no fawns or males monitored in the Bannock PMU during this reporting period.

Population Surveys and Monitoring

The survey protocol for monitoring mule deer populations in southern Idaho was revised beginning in 2000–2001 and again in 2007–2008. Future plans include the continuation of composition and complete PMU-wide sightability surveys, as specified by the current mule deer management plan.

As part of the Department's mule deer population monitoring program, population surveys are conducted periodically. Prior to 2008 these surveys were conducted on trend areas by GMU, however current protocol calls for total population surveys at the PMU level to be completed every 4–6 years. Herd composition surveys are typically done annually.

In December 2018, staff conducted aerial herd composition surveys on major winter ranges in the Bannock PMU. This year's composition survey included winter ranges in GMUs 70 (Mink Creek and Indian Creek areas), 71 (Blackrock Canyon area), 73 (Samaria, Dayton, Rowley Canyon, and Wood Canyon areas), 73A (Rock Creek and Dry Hollow areas), 74 (Smith Creek and Swan Lake areas), 75 (Soda Point and Williams Creek areas), 77 (Mink Creek area), and 78 (Bloomington, St. Charles, and Sleight Canyon areas). During these surveys, a total of 1,796 deer were observed and classified, with a resulting fawn:doe ratio of 70:100 and buck:doe ratio of 17:100 (Figure 11). No sightability surveys took place in the Bannock PMU during this reporting period.

Inter-specific Issues

Although livestock graze much of the mule deer range in this PMU, interactions of concern are relatively few and tend to be limited to localized areas. Of primary concern are livestock winter feedlot operations that concentrate deer during winter. Of minor concern are a few localized areas (riparian and winter range) of intense livestock pressure.

Recent trends indicate an increase in elk numbers occupying mule deer winter range. Some winter ranges in this PMU do not lend themselves to niche separation by the 2 species and, therefore, either direct resource competition and/or social intolerance will likely impact mule deer numbers. A graduate student completed a project in 2008 on elk/mule deer competition and found that deer and elk competition varied between moderate and severe winters. During moderate winters deer exhibited increased spatial separation from elk, but during severe winters showed decreased spatial separation (Atwood 2008). Over the past decade there have been

increases in elk numbers on the Soda Hills winter range, and the department is continuing to monitor changes in deer and elk populations in that area.

Predation Issues

Major predators of mule deer in this PMU include mountain lions, coyotes, and bobcats. The black bear population is low, but appears to be increasing. Mountain lion and coyote populations are believed to have increased during the last 30 years. Occasional wolf activity likely occurs in the northern portion of this PMU, but has been inconsistent and is not a significant source of mortality for mule deer populations in this area. It is unknown specifically what impact these changing predator systems are having on mule deer population dynamics, although a multi-year investigation of the impact of manipulating predator populations indicated small affects.

Winter Feeding and Depredation

Emergency supplemental feeding of deer occurs periodically; however, these GMUs generally have milder winter conditions than elsewhere in southeastern Idaho. In many cases, emergency feeding is initiated after deer have been attracted to cattle feedlot operations or private citizens began feeding deer early in winter. The Department, working in conjunction with the Winter Feeding Advisory Committee, will discourage livestock operators and other private citizens from encouraging deer use of non-traditional food sources. No winter feeding of mule deer occurred in the Bannock PMU during this reporting period.

Mule deer were provided supplemental winter-feed at a Department-sanctioned, Commission-approved feed site east of Stone (GMU 56) during 12 of 15 winters between 1974 and 1988. An estimated 500-1,400 deer were fed annually. The feeding was initiated following the construction of Interstate 84 that blocked the traditional migration of deer from GMU 56 to winter ranges on the south end of Black Pine Mountain (GMU 57) and the east end of the Raft River range in Utah. In the early 1950s, it was estimated that more than 4,000 deer from GMU 56 made the migration. During the open winters associated with the prolonged drought of the late 1980s, deer did not concentrate near the state line for several consecutive years, and the feeding operation was permanently closed down. GMU 56 will be managed for the number of deer that can be supported on winter ranges without an annual winter-feeding effort.

During the 2010–2011 winter, emergency feeding was conducted in GMU 78. There were 12 feed sites in the GMU and over 2,000 deer were fed. Although the 2012–2013 winter was mild, one emergency winter feed site was established in GMU 70 in the area of the Charlotte Fire in southeast Pocatello. Emergency winter feeding was again conducted in the Bannock PMU during the winter of 2016–2017. Volunteers and staff fed deer at 42 sites across the PMU. It was estimated that there were 4,500-5,000 deer being fed.

Hunting and Harvest Characteristics

General hunting opportunity exists in every GMU within the Bannock PMU except GMU 70 (although in GMUs 57, 73, and 78 this is archery-only opportunity). In addition to this general opportunity, several quality and high quality hunts exist with different frameworks (i.e. either-sex, extended season dates, and late season hunts with varied weapon types.)

Total harvest in the Bannock PMU was estimated at 3,483 in 2018 based on mandatory harvest reports. This represents a 19% increase in harvest from 2017 (2,926) and is 11% lower than the previous five-year average of 3,914. Total hunter numbers were estimated at 10,226 for 2018, compared to 10,927 hunters in 2017. Of the antlered harvest, 42% were 4-points or larger in 2018. This is slightly lower than the previous 3 year's average of 46% and surpasses the 25% objective set for general hunting units. During the 2018 hunting season, approximately 34% of hunters successfully harvested a deer in the Bannock PMU. This represents an increase from the 27% success rate in 2017 and a decrease from the 36% average from the previous 3 years (Figure 11).

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved its CWD Response and Monitoring Plan in 2017. This plan calls for elevated, periodic monitoring for CWD in the Bannock PMU. Sampling in the Bannock PMU occurred throughout this reporting period. During this time samples were collected from 194 individuals, none of which tested positive for CWD. Intensive sampling for CWD in the Bannock PMU will continue every third year into the future.

Other disease concerns will be evaluated on a case by case and needs basis. Animals that are showing signs of serious illness will be collected and sent to the health lab for testing.

Management Discussion

The Department has completed one sightability survey for the Bannock PMU as described in the 2008 Mule Deer Management Plan. Frequent composition and survival data for fawns and does will continue to be important.

Harvest information is important data that the department needs to continue collecting. If possible, the timeliness and reporting percentage would be enhanced to allow for improved data and use. Harvest information is used for setting seasons on a bi-annual basis and the quality of that data is very important.

Many regions manage antlerless mule deer as part of their regular harvest by both youth either sex or controlled permit hunting. Research to document the effect of female harvest on population productivity, age structure of the population, and that effect on population size would be beneficial. This research would help improve our baseline knowledge of antlerless harvest and allow us to better manage mule deer populations for increased productivity.

Although habitat succession and change are occurring, it is unknown what specific impacts will occur to deer populations. Furthermore, it is unknown whether the aging of current mule deer habitat will lead to ultimately less productive habitats.

Literature Cited

Atwood, P. 2009. Interactions between mule deer and elk on winter range at the Tex Creek Wildlife Management Area, Idaho. Masters Thesis, Idaho State University.

Mule Deer Bannock PMU 9 (GMUs 56, 57, 70, 71, 73, 73A, 74, 75, 77, 78)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase	Increase
Hunter Days	>35,000	>50,000

Square Miles =	5,470	3-Year Averages	
% Public Land =	48%	Hunters per square mile =	1.93
Major Land Type =	Rangeland/Forest	Harvest per square mile =	0.76
		Success Rate =	34%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer						33,943				

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	54	56	61	76	68	76	70	64	70	
Buck:Doe	19	25	23	23	23	29	26	25	17	
Fawn Survival	0.55	ND	0.65	ND						
Adult Doe Survival	0.96	0.73	0.89	0.91	0.79	0.89	0.89	0.89	0.91	0.92

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	10,651	45,392	574	1,969	40%
2010	10,361	42,421	537	2,459	40%
2011	10,147	41,213	423	2,005	44%
2012	10,025	40,840	552	2,822	43%
2013	11,682	48,628	646	2,773	42%
2014	13,051	52,111	792	3,647	44%
2015	13,443	55,999	710	3,881	42%
2016	10,492	50,846	590	3,606	48%
2017	10,927	55,022	134	2,792	48%
2018	10,226	51,083	216	3,267	42%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
56	ND	ND	ND	1,710	1,133	700	1,101	1,357	ND	1,773
71	ND	ND	1,118	920	889	840	697	731	479	ND
73	ND	ND	1,865	3,009	1,510	1,880	2,130	3,169	1,943	ND
73A	ND	ND	1,533	2,100	2,016	1,734	1,121	1,168	1,852	ND
78	ND	ND	1,707	3,150	1,405	1,449	2,852	2,368	1,689	ND

Note: ND = no survey data available

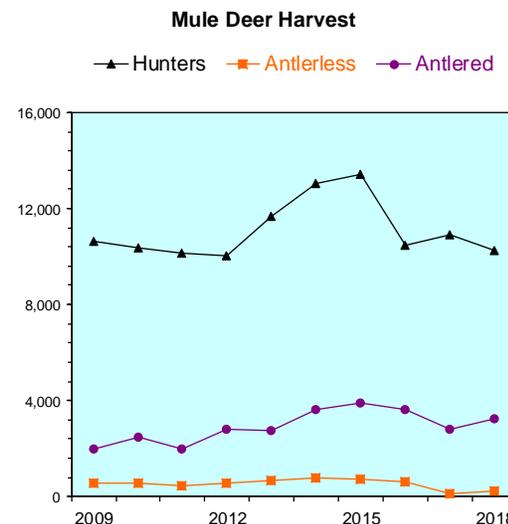
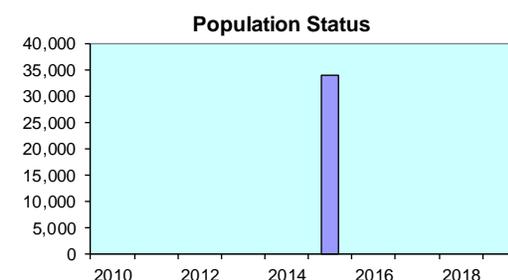


Figure 11. Bannock Mule Deer PMU Status and Objectives.

CARIBOU

PMU 10 (GMUs 66, 66A, 69, 72, 76)

Historical Background

The mule deer population in the Caribou PMU has fluctuated widely since the mid-1800s. Osborne Russell (1914) did not mention mule deer in this area in the 1840s. Since he liked to hunt deer and noted the presence of other big game in the general area, it is likely deer were not common. Early homesteaders and trappers reported that deer were seen but were less numerous than buffalo, bighorn sheep, and elk. Deer numbers probably declined through the early 1900s, possibly due to unregulated harvest. By 1920, observations of deer were quite rare. Between 1920 and the early 1970s, deer numbers increased dramatically, interrupted briefly by significant winter mortality. Following a significant decline in numbers beginning in 1972, numbers again increased until the late 1980s. The population level attained during this second peak probably did not reach that attained during the 1950s–early 1970s.

Harvest management during the 1950s and 1960s was designed to reduce deer numbers in response to what were considered over-browsed winter ranges. Long general seasons with opportunity for extra deer tags predominated. Following the decline in the early 1970s, harvest management became more conservative with 2–4 week general seasons with varying levels of either-sex opportunity. By the late 1980s, the deer population had increased to a point that a population reduction was desired. The years 1989 and 1990 were marked by four-week general either-sex seasons with extra deer tags available. A dramatic reduction in the caribou mule deer population then occurred during the severe winter of 1992–1993. While the population likely recovered from this severe winter, it has not reached levels experienced during earlier peaks. Hunting seasons over the years have been adjusted in an attempt to respond to obvious fluctuations in the population.

An apparent change in the winter distribution of mule deer has occurred, primarily in GMU 76. During the 1950s and 1960s, deer use of the Soda Front (Wood Canyon south to Montpelier) was extensive, while use of the Bear Lake Plateau and the Soda Hills (GMU 72) was thought to be minimal. Currently, the Bear Lake Plateau and the Soda Hills represent the 2 most significant winter ranges for mule deer in GMUs 72 and 76. Major wintering areas in this PMU are: Soda Hills (GMU 72), Bear Lake Plateau (GMU 76) and Tex Creek (GMU 69). An unknown number of deer migrate to and winter in Wyoming and Utah.

The 2018 general season structure for the Caribou PMU did not change from the 2017 structure. The most recent changes to the antlered deer season occurred in 2009, when the general any-weapon hunt was shortened, moving the end date from 31 October to 24 October. In 2017, youth antlerless hunting was removed from the general any weapon season. The controlled hunt structure for 2018 in the Caribou PMU remained unchanged from the 2017 season. The last changes occurred in 2015 when a 5 tag antlered-only hunt running from 10 October to 30 November was added in GMU 66A. Other controlled hunts included either-sex opportunity from 8 October to 5 November in GMUs 66 and 69 (implemented in 2013 and 2014 respectively), late season antlered-only hunts running from 10 October to 30 November in GMUs 66 and 69 that were implemented in the 1980s, and a late-season antlered-only archery hunt in GMU 72 and a

portion of GMU 76 that began in 2013 as an unlimited controlled hunt and was then made first choice only in 2016 (this hunt previously occurred in GMUs 68A and 72).

Management Objectives

Harvest and population objectives for mule deer in Idaho are identified in the mule deer management plan. This includes objectives for hunter success, percent four-points in the harvest, and buck:doe ratios. Furthermore, these objectives vary based on whether general, quality, or high-quality hunts are offered. All game management units in the Caribou PMU offer general any-weapon hunting opportunity and associated objectives include maintaining ~25% harvest success, >25% four-points in the harvest, and ~15 bucks per 100 does. Assessment of the current population and harvest status can be found in the biological objectives and hunting and harvest characteristics sections of this report.

Habitat Management and Monitoring

The Caribou PMU represents the most productive habitats for mule deer in southeastern Idaho. Three main vegetation types predominate: sagebrush-grassland, aspen, and conifer. Other important vegetation communities that are important to deer include mixed brush communities, juniper, and mahogany. The current mix of vegetation cover types is a result of intensive grazing by livestock during the early 1900s and ongoing fire suppression efforts. These factors converted what was predominately perennial grass stands into shrublands. Given that current livestock grazing practices are much more conservative and designed to promote grass, and that current shrublands are aging, it is logical that quality mule deer habitat probably peaked earlier in the twentieth century. Additionally, the current conversion of aspen to conifer and replacement of mixed shrub and sagebrush communities by juniper probably will reduce habitat suitability for mule deer.

The USFS manages approximately 54% of the land in this PMU. The remaining land area is predominately private and is used for rangeland pasture, small grains, and hay production. Approximately 250 square miles of the area is Fort Hall Indian Reservation land. A large portion of the private lands in the Caribou PMU are now enrolled in the conservation reserve program (CRP). Aspen communities provide valuable fawning habitat for mule deer and have declined in area and quality throughout the PMU. The Tex Creek WMA, partially owned and totally managed by the Department, provided 30,000 acres of prime winter habitat for mule deer, elk, and moose. This land was purchased to mitigate for habitat inundated or destroyed by Ririe, Palisades, and Teton dams. Unfortunately, much of the Tex Creek winter range burned in the Henrys Creek fire during the summer of 2016. This fire likely reduced the extent and quality of mule deer winter range at Tex Creek for the near future.

Depredation complaints are generally limited to periods of high mule deer populations and have not been a major concern for some time. Predominant land uses of the publicly-owned lands include livestock grazing, timber management, recreation, and phosphate mining. Of particular concern is the encroachment of human activity, either intense recreational activity (i.e., over-snow machine travel) and/or development on mule deer winter range.

Biological Objectives

In the recent past, the department has monitored the mule deer population in the Caribou PMU via trend area surveys at the GMU level, sightability surveys at the PMU level, herd composition surveys and through repeated collaring and survival monitoring efforts.

Several trend surveys flown between 1999 and 2007 suggested a varying mule deer population, although declines over several years were a cause of concern at the time (Figure 12; Previous Trend Area Surveys). In the winter of 2009 the PMU was surveyed utilizing our sightability methodology and the estimated population size was 24,302. This was the first survey of the entire area and gave the department good baseline information. This survey was repeated in 2013 with a population estimate of 21,585 and again in 2019 with a population estimate of 19,701 (Figure 12; Population Status).

The winter of 2010–2011 was extremely severe, likely causing population level declines in the Caribou PMU. Overwinter fawn survival was not measured but was estimated to be very low and adult doe survival was the lowest measured ever in the state at 64%. This severe winter and associated mortality rates likely explain the decrease in estimated population size between 2009 and 2013. Following this, the 2011–2015 winters were very mild, resulting in high survival (Figure 12; Population Parameters) and likely an increasing mule deer population in the Caribou PMU. The winter of 2016–2017 was again very severe, likely causing the population to decline. Fawn survival was estimated at 4% (all of these fawns were captured on the Tex Creek winter range). During this time period (2010–2018), estimated fawn:doe ratios ranged between 51:100 and 80:100 in the Caribou PMU (it is expected that 66 fawns per 100 does is necessary to maintain populations with average winter mortality). While the 2017-2018 winter was relatively mild, the 2018-2019 winter was again severe with higher than average snow pack lasting into the spring.

Capture, Radio-mark and or Telemetry

As part of the Department's mule deer population monitoring program, adult does and 6 month old fawns are often captured and fitted with radio collars. Biological information is then collected to answer questions related to survival, body condition, pregnancy, and habitat use. These periodical check-ups on populations give managers insight into local population dynamics

During the 2018–2019 reporting period, the Department monitored 34 adult female mule deer in the Caribou PMU. Apparent overwinter survival of these individuals was 94%. There were no fawns or males monitored in the Caribou PMU during this reporting period.

Population Surveys and Monitoring

The survey protocol for monitoring mule deer populations in southern Idaho was revised beginning in 2000–2001 and again in 2007–2008. Future plans include the continuation of composition and complete PMU-wide sightability surveys, as specified by the current mule deer management plan.

As part of the Department's mule deer population monitoring program, population surveys are conducted periodically. Prior to 2008 these surveys were conducted on trend areas by GMU,

however current protocol calls for total population surveys at the PMU level to be completed every 4–6 years. Herd composition surveys are typically done annually.

In December 2018, staff conducted aerial herd composition surveys on major winter ranges in the Caribou PMU. This included the Soda Hills in GMU 72, the Bear Lake Plateau, Montpelier Canyon, Sheep Creek areas of GMU 76, the Fall Creek Basin in GMUs 66 and 69, and Tex Creek WMA and Wolverine Canyon areas of GMU 69. During these surveys, a total of 2,678 deer were observed and classified, with a resulting fawn:doe ratio of 69:100 and buck:doe ratio of 20:100 (Figure 12). In January 2019, IDFG staff conducted an aerial sightability survey of the Caribou PMU. During this survey 164 subunits were flown and the population estimate was 19,701.

Inter-specific Issues

Although livestock graze much of the mule deer range in this PMU, interactions of concern are relatively few and tend to be limited to localized areas. Of primary concern are livestock winter feedlot operations that over-concentrate deer during winter. Of concern are a few localized areas (riparian and winter range) of intense livestock pressure, particularly in GMUs 66, 66A, and 69.

Recent trends indicate an increase in elk numbers occupying mule deer winter range. Some winter ranges in this PMU do not lend themselves to niche separation by the 2 species and, therefore, either direct resource competition and/or social intolerance will likely impact mule deer. A graduate student completed a project in 2008 on elk/mule deer competition and found that deer and elk competition varied between moderate and severe winters. During moderate winters, deer demonstrated increased spatial separation from elk, but during severe winters, demonstrated decreased spatial separation (Atwood 2008). Over the past decade there have been increases in elk numbers on the Soda Hills winter range, and the department is continuing to monitor changes in deer and elk populations in that area.

Predation Issues

Major predators of mule deer in this PMU include black bears, mountain lions, coyotes, and bobcats. The black bear population is low, but appears to be increasing. Mountain lion and coyote populations are believed to have increased during the last 30 years. Occasional wolf activity does occur in the northern portion of this PMU, but has been inconsistent in recent years and likely is not a significant source of mortality for mule deer populations in this area. It is unknown specifically what impact these changing predator systems are having on mule deer population dynamics.

Winter Feeding and Depredation

Emergency supplemental feeding of deer has occurred recently in the Caribou PMU (during the 2010–2011 and 2016–2017 winters). Primary areas include Soda Springs, Georgetown Canyon, Montpelier Canyon, and the east shore of Bear Lake. The Department, working in conjunction with the Winter Feeding Advisory Committee, will discourage livestock operators and other private citizens from encouraging deer use of non-traditional food sources. No emergency winter feeding of mule deer occurred in the Caribou PMU during this reporting period.

Hunting and Harvest Characteristics

General hunting opportunity exists in every GMU within the Caribou PMU. In addition to this general opportunity, several quality and high quality hunts exist with different frameworks (i.e. either-sex, extended season dates, and late season hunts with varied weapon types)

Total harvest in the Caribou PMU was estimated at 1,867 mule deer in 2018 based on harvest reports. This represents a 21% increase in harvest from 2017 (1,548), but is 36% lower than the previous five-year average of 2,919. Total hunter numbers were estimated at 8,413 in 2018 compared to 9,032 hunters in 2017. Of the antlered harvest, 37% were 4-points or larger in 2018. This is slightly lower than the previous 3 year's average (43%) and surpasses the 25% objective set for general hunting units. During the 2018 hunting season, approximately 22% of hunters successfully harvested a deer in the Caribou PMU. This represents an increase from the 17% success rate in 2017, but a decrease from the 28% average from the previous 3 years (Figure 12).

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved its CWD Response and Monitoring Plan in 2017. This plan identifies areas of high potential for CWD occurrence and the Caribou PMU is one of the most likely areas for CWD to be detected as a mule deer tested positive in 2015 just across the border in the Star Valley Wyoming area.

With the Caribou PMU area being identified as an area of high potential for CWD to occur, the CWD plan calls for elevated annual testing of mule deer. This elevated level of testing began in 2017 and will continue into the future. During the 2018-2019 reporting period, IDFG staff sampled 159 mule deer, none of which tested positive for CWD.

Other disease concerns will be evaluated on a case by case and needs basis. Any animals that are showing signs of serious illness will be collected and sent to the health lab for testing.

Management Discussion

The Department has completed 3 sightability surveys for the Caribou PMU as described in the 2008 Mule Deer Management Plan. In conjunction with this survey, protocols are being evaluated for utilizing remotely sensed cameras to monitor mule deer populations in the future. Frequent composition and survival data for fawns and does will continue to be important.

Harvest information is important data utilized for monitoring populations and setting seasons. If possible, the timeliness and reporting percentage would be enhanced to allow for improved data and utility.

Many regions manage antlerless mule deer as part of their regular harvest by both youth either sex or controlled permit hunting. Research to document the effect of doe harvest on population productivity, age structure of the population, and the effect on population size would be beneficial. This research would help improve baseline knowledge of antlerless harvest and allow the Department to better manage mule deer populations for increased productivity.

Literature Cited

Atwood, P. 2009. Interactions between mule deer and elk on winter range at the Tex Creek Wildlife Management Area, Idaho. Masters Thesis, Idaho State University.

Russell, O. 1914. Journal of a Trapper, 1834-1843. Syms-York, Boise, Idaho

Mule Deer Caribou PMU 10 (GMUs 66, 66A, 69, 72, 76)

Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase	Increase
Hunter Days	>40,000	>50,000

Square Miles =	3,875	3-Year Averages	
% Public Land =	56%	Hunters per square mile =	2.38
Major Land Type =	Rangeland/Forest	Harvest per square mile =	0.82
		Success Rate =	26%



Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer				21,585						19,701

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	51*	56*	77*	73*	65*	80*	77	61	69	
Buck:Doe	19*	18*	17*	18*	32*	27*	28	14	20	
Fawn Survival	0.51	ND	ND	ND	ND	ND	ND	0.11	ND	ND
Adult Doe Survival	0.96	0.64	0.98	0.95	0.88	0.75	0.80	0.78	0.97	0.94

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
 Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)
 * These ratios were obtained from GMUs 72 and 76 only and does not include other GMUs within the PMU.

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	8,483	42,883	200	1,401	30%
2010	8,510	39,480	399	1,703	33%
2011	8,583	43,118	274	858	39%
2012	8,017	38,290	382	1,585	40%
2013	8,946	42,608	432	1,916	30%
2014	10,849	48,787	516	2,576	35%
2015	12,331	56,290	637	3,241	40%
2016	10,179	53,515	806	2,925	46%
2017	9,032	52,248	195	1,353	44%
2018	8,413	46,264	207	1,660	37%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
69	ND	3,508	ND	2,331	2,730	2,475	ND	1,532	ND	3,110
72	ND	1,826	2,378	4,576	2,877	1,124	1,801	2,552	2,016	ND
76	ND	3,427	3,467	5,106	2,378	2,766	ND	3,531	3,363	ND

Note: ND = no survey data available

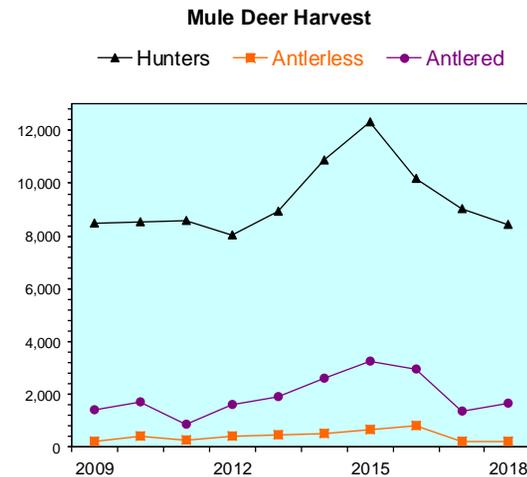
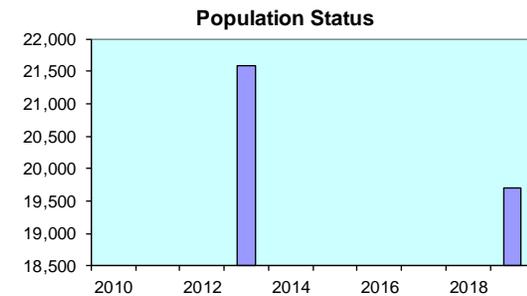


Figure 12. Caribou Mule Deer PMU Status and Objectives.

PALISADES

PMU 11 (GMUs 64, 65, 67)

Historical Background

Old records of mule deer in this PMU are unreliable and inconclusive; however, it is probable that they have always been present in unknown densities. Early homesteaders reported that deer were scarce. Mule deer populations throughout the region increased in the 1940s and 1950s and remained high through the 1980s. Severe winters in 1988–1989 and 1992–1993 probably took much of the recruitment for those years. The population has rebounded to levels at or above the long-term average. A liberal general season extending 10 days into November was offered in these GMUs until 1990. The recent philosophy has been to move seasons (Appendix A) into October to reduce vulnerability of adult males during the rut. This has been successful in reducing deer harvest and also hunter satisfaction. This PMU, especially GMU 67, offers most of what little backcountry hunting opportunity remains in southeast Idaho. GMU 67 has become well known for producing high quality, older age bucks and the popularity of the GMU has increased over the years.

Populations were at or near all-time highs prior to the severe 1988–1989 and 1992–1993 winters. Following a decline of unmeasured magnitude, they have recovered to at or above long-term average levels. Distribution has changed, particularly at Rainey Creek, where it was common to feed up to 500 deer through the 1987–1988 winter. The Rainey Creek feed station was terminated in 2005. Strategies designed to increase wintering elk in some parts of the area to offset elimination of the Rainey Creek feed-site will need to be carefully monitored to protect existing mule deer populations.

The current general season structure for the Palisades PMU has remained the same since 2009 when the general any-weapon hunt was shortened, moving the end date to 24 October when it closed on 31 October previous to that time. Antlerless hunts are implemented within the Palisaded PMU as deer populations and the Mule Deer Management plan allow. There are currently no Antlerless hunts within the Palisades PMU, but there had been antlerless hunts in GMU 67 in 2014–2016. Either sex opportunity is offered in GMU 67 from 5 October–8 November since 2007. Game management unit 64 and 65 host an either sex muzzleloader hunt from 25 October–30 November with this opportunity having been in place since 2011. GMU 67 currently has a late season buck hunt that runs from 10 October–30 November with this hunt structure having been in place since 2008. This late buck hunt was first implemented in 2007 with season dates being 1 November–30 November.

Management Objectives

Harvest and population objectives for mule deer in Idaho are identified in the mule deer management plan. This includes objectives for hunter success, percent four-points in the harvest, and buck:doe ratios. Furthermore, these objectives vary based on whether general, quality, or high-quality hunts are offered. All game management units in PMU 11 offer general hunting opportunity and associated objectives include maintaining ~25% harvest success, >30% four-points in the harvest, and ~15 bucks per 100 does. Assessment of the current population and harvest status can be found in the biological objectives and hunting and harvest characteristics sections of this report.

Maintaining this population at a level where it does not cause depredations and require winter-feeding, particularly in Swan Valley and GMU 65, is an ongoing priority. The sightability survey conducted in February 2017 estimated 4,476 mule deer in this PMU.

Habitat Management and Monitoring

Abundant spring, summer, and fall habitat exists in this area but winter range is limited. Winter range has been lost to agriculture and is currently threatened by home site development. Opportunities to preserve or enhance winter range will be pursued. Winter range on slopes in the vicinity of the mouth of Rainey Creek appears to have suffered from years of overgrazing by elk and mule deer. The area between Table Rock Canyon and Kelly Canyon currently winters high concentrations of mule deer. Mature mountain mahogany stands throughout the PMU may be providing only limited forage in addition to precluding all but a sparse understory of other species. Some bench areas in the Black Canyon to Wolverine Canyon stretch appear to be converting from shrub-dominated to grass-dominated or a conifer community. Most winter range in Swan Valley has been lost to agriculture, brush removal, or development.

The winter of 2016-2017 was one of the most severe winters in recent memory. Fawn mortality over this winter was likely over 80% and doe mortality exceeded 10%. The winter of 2018-2019 was also a harsh winter with fawn mortality at 60%, but doe mortality was not significantly elevated. This level of fawn mortality will have population level impacts as these missing fawns move into and through the reproductive cohorts of the population.

Of interest to managers is the lack of deer and elk use of highly productive summer habitats within this PMU, especially GMU 67. This area is tremendously productive, but deer densities continue to be low.

Biological Objectives

Mule deer in PMU 11 are currently meeting management objectives, including those required to allow general antlerless harvest. Snowmobile activity may be precluding the use of traditional winter range in the Canyon Creek area.

A complete sightability survey in 2010 generated an estimate of 5,182 deer. A complete sightability survey in 2017 generated an estimate of 4,476 deer which was lower than the 2010 estimate of 5,182. The temporal period between these 2 surveys resulted in significant population growth for most of the deer populations in southern Idaho. The lack of population growth in the Palisades PMU is surprising.

The Heise winter range in GMU 67 has been the site of an annual winter fawn mortality study since 1998. From 2000-2010 fawn mortality has averaged 55% annually with a high of 92% in 2008 and a low of 8% in 2003. This data reflects the extreme variation in winter conditions on the Heise winter range. Doe survival averaged 90% annually between 2006 and 2010. We did not radio collar and monitor fawns after the winter of 2010 so there is not a survival estimate through May 2012. We did continue to monitor does and their 71% survival rate estimate through May 2011 was the lowest we have recorded there since we started monitoring doe survival in 2006. The effects of the long, harsh winter are evident in this low survival rate. We

assumed from the doe survival rate and other rates in the region that the fawns also had a very low survival rate in this DAU. The low survival rate of does in this area prompted us to reduce harvest opportunity in this DAU in 2011, that opportunity was reinstated following 2 mild to moderate winters. In 2017–2018 staff checked in on our Palisades PMU population by monitoring 29 adult female mule deer and 30 fawns. Overwinter survival of these individuals was 89% survival for adult females and 63% survival for fawns.

Capture, Radio-mark and or Telemetry

As part of the Department's mule deer population monitoring program, adult does and 6 month old fawns are often captured and fitted with radio collars. Biological information is then collected to answer questions related to survival, body condition, pregnancy, and habitat use. These periodical check-ups on populations give managers a feel for what is happening within these populations.

The winter of 2016-2017 was one of the most severe winters in recent memory. Fawn mortality over this winter was likely over 80% and doe mortality exceeded 10%.

During the 2017–2018 reporting period, the Department monitored 29 adult female mule deer and 30 fawns in the Palisades PMU. Overwinter survival of these individuals was 89% survival for adult females and 63% survival for fawns.

The winter of 2018-2019 was also a harsh winter with fawn mortality at 60%, but doe mortality was not significantly elevated (5%). The missing fawn cohorts from 2016-2017 and 2018-2019 will have lasting population effects over the next several years.

Population Surveys and Monitoring

The survey protocol for monitoring mule deer populations in southern Idaho was revised beginning in 2000–2001 and again in 2007–2008. Future plans include the continuation of composition and complete PMU-wide sightability surveys, as specified by the current mule deer management plan.

As part of the Department's mule deer population monitoring program, population surveys are conducted periodically. Prior to 2008 these surveys were conducted on trend areas by GMU, however current protocol calls for total population surveys at the PMU level to be completed every 4–6 years. Herd composition surveys are typically done annually.

In December 2018, staff conducted aerial herd composition surveys on major winter ranges in PMU 11. This included the Heise face and Palisades bench areas in GMU 67 with a resulting fawn:doe ratio of 84:100 and buck:doe ratio of 44:100 (Figure 13). No sightability surveys took place in the Palisades PMU during this reporting period.

Inter-specific Issues

In addition to mule deer, this PMU supports an elk population and numerous moose. Domestic livestock extensively grazes portions of it. Inter-specific relationships are not monitored and are poorly understood. If the elk population is not carefully managed, conflicts with deer on winter

range could develop. During the winter of 2010–2011, we did observe approximately 100 elk using the Heise mule deer winter range where we normally do not observe elk.

Predation Issues

Wolves have established in the Big Hole Mountains with the White Owl pack persisting over the last five years or so. Wolf predation has not shown up as a significant factor in mule deer survival to date, but we do know that this pack does use the primary winter range for mule deer during the winter months. This will be something that staff will continue to monitor over time.

Mountain lion predation is a fairly consistent cause of mortality for mule deer on the Palisades winter range, but does not seem to be a direct driver for population performance.

Winter Feeding and Depredation

Mule deer have been fed during severe winters on an emergency basis below the Palisades Bench, near Heise, and in Canyon Creek. They were fed on a regular basis at the mouth of Rainey Creek along with elk. The elimination of feeding elk at that site has also resulted in the end of deer feeding. With new and planned home site developments occurring in Swan Valley, new residents will be tempted to bait or feed deer and elk. All such efforts will be discouraged.

Hunting and Harvest Characteristics

Total harvest in PMU 11 in 2018 was estimated at 279 mule deer based on mandatory harvest report cards. This represents an 11% decrease in harvest from 2017 (310) and is 27% lower than the previous five-year average of 384. Total hunter numbers were estimated at 1,481 for 2018 compared to 1,705 hunters for 2017. An average of 56% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 19% hunter success rate over this same 3 year period (Figure 13).

The 2019 and 2020 antlerless hunting opportunity was reduced for this deer population as a result of the 2016-2017 and 2018-2019 winter mortality events. Youth Harvest was shortened to the first week of the season and all antlerless controlled hunt opportunity was reduced by 50%.

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved our CWD Response and Monitoring Plan in 2017. This plan identifies areas of high potential for CWD occurrence and the Palisades PMU is one of the most likely areas for CWD to be detected. This is due to the fact that Wyoming had a mule deer test positive in 2015 just across the border in the Star Valley area.

With the Palisades PMU area being identified as an area of high potential for CWD to occur, the CWD plan calls for elevated annual testing of mule deer. This elevated level of testing began in 2017 and continued during 2018.

Other disease concerns will be evaluated on a case by case and needs basis. Any animals that are showing signs of illness will be collected and sent to the health lab for testing.

Management Discussion

We have now finished both the baseline sightability survey for PMU 11 as described in the 2008 Mule Deer Management Plan. These complete sightability surveys were completed in 2010 and 2017. We will continue to need composition and survival data for fawns and does.

Harvest information is also important data that we need to continue collecting and enhance the timeliness and the reporting percentage if possible. Harvest information is used for setting seasons on a bi-annual basis. The quality of that data is very important.

Many regions manage antlerless mule deer as part of their regular harvest by both youth either sex or controlled permit hunting. All of these wintering herds have limited winter range resources, responsible population management through antlerless harvest is an important component to managing this population. Research to document the effect of doe harvest on population productivity, age structure of the population, and that effect on population size would be beneficial. This research would help improve our baseline knowledge of antlerless harvest and allow us to better manage mule deer populations for increased productivity.

Mule Deer Palisades PMU 11 (GMUs 64, 65, 67)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Maintain	Increase
Hunter Days	>7,500	>9,000

Square Miles =	994	3-Year Averages	
% Public Land =	52%	Hunters per square mile =	1.65
Major Land Type =	Rangeland/Forest	Harvest per square mile =	0.50
		Success Rate =	21%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer	5,182							4,476		

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	83	65	73	74	ND	ND	67	77	85	
Buck:Doe	32	43	23	35	ND	ND	35	30	44	
Fawn Survival	0.67	ND	0.63	0.40						
Adult Doe Survival	0.78	0.71	0.91	0.90	0.89	0.86	0.80	0.80	0.89	0.95

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (December - May), Raw Adult Doe Survival = over winter survival (December - May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	1,744	8,104	38	149	43%
2010	1,893	8,762	65	250	49%
2011	1,456	6,129	27	82	51%
2012	1,394	6,322	28	141	56%
2013	1,551	7,220	68	233	46%
2014	1,991	8,269	133	291	54%
2015	2,149	8,959	100	349	61%
2016	1,728	8,851	113	347	63%
2017	1,705	9,645	68	242	46%
2018	1,481	7,447	38	241	60%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
67	1,777	ND	ND	1,542	2,252	ND	2,503	ND	2,911	ND

Note: ND = no survey data available

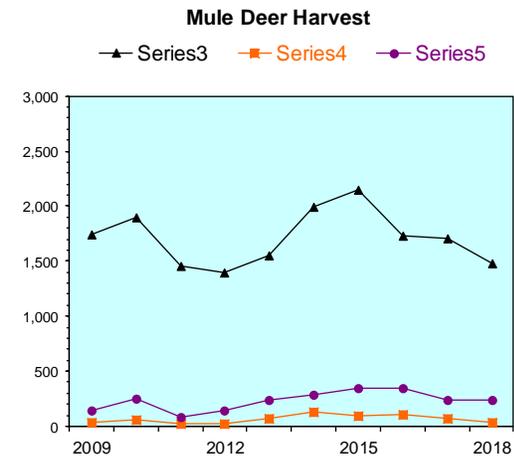
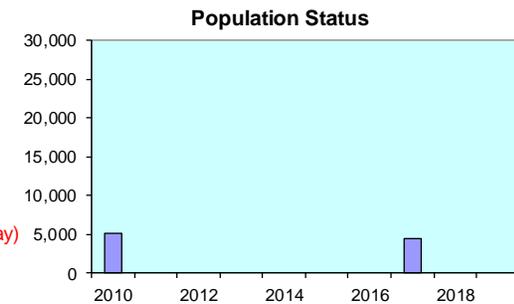


Figure 13. Palisades Mule Deer PMU Status and Objectives.

ISLAND PARK

PMU 12 (GMUs 60, 60A, 61, 62, 62A)

Historical Background

Since the early to mid-1980s, raw counts on Sand Creek winter range (GMU 60A) indicate that deer populations have at least doubled, steadily increasing from just over 1,300 deer in 1984 to 3,000 or more in 1996, 1997, and 2000. This population has historically been very susceptible to hard winters but is very productive and rebounds quickly. Populations have been built rapidly during periods without severe winter conditions only to crash with the next hard winter.

Historically, these population reductions have occurred about every 4–6 years.

Winter severity is the primary driver for the Island Park deer population. Harsh winters in 2001–2002, 2007–2008, 2010–2011, 2016–2017, and 2018–2019 have led to significant reductions in the population with more mellow conditions during the in between years leading fairly rapid growth in these herds.

Deer that winter on the Sand Creek winter range summer throughout GMUs 60, 61, 62A, and into Wyoming and Montana, resulting in widely distributed and low deer densities across the landscape. Consequently, hunting pressure in these GMUs is low and dispersed. The only time hunting pressure is significant on this population is when early snow forces deer down onto their high-desert winter range during the general hunt.

The best winter range in GMU 62 was first inundated by the Teton Dam and then more was destroyed by its failure. However, the Teton Canyon is still the most important winter range in GMU 62. Radio-collar information from 2007–2019 has confirmed that the majority of the mule deer in Teton Canyon summer in Wyoming. This confounds management because the deer often do not enter Idaho until after normal hunting seasons. Periodic severe winters may keep this population below a level where they cause depredations in winter or where people are providing them food. However, if additional population control is necessary or opportunity is expanded, it would have to come with later season hunting opportunities and/or cooperation with Wyoming.

The current general season structure for the Island Park PMU has remained the same since 2009 when the general any-weapon hunt was shortened, moving the end date to 24 October when it closed on 31 October previous to that time.

The PMU currently offers a variety of controlled hunt opportunities.

- Antlerless hunt in all of GMUs 60, 62A and a portion of GMU 60A from 25 October–15 November. This hunt with these dates has been in place since 2014. The PMU has a history of offering antlerless opportunity, but antlerless only hunting seasons were not offered in 2012 and 2013.
- Either sex hunt in GMUs 60, 61, and 62A from 5 October–8 November. This hunt structure has been in place since 2013 with a similar either sex hunt having been in place, but with season dates being from 5 October–17 November.
- Either sex hunt in GMU 62 from 5 October–8 November. This hunt structure has been in place since at least the early 2000s.
- Either sex Muzzleloader hunt in GMU 61 from 11 November–9 December. This hunt has been in place since 2011.

- Antlered only hunts in GMUs 60, 60A, 62, and 62A from 10 October–30 November. These “buck only” hunts have been in place since at least the early 2000s.

Management Objectives

Harvest and population objectives for mule deer in Idaho are identified in the mule deer management plan. This includes objectives for hunter success, percent four-points in the harvest, and buck:doe ratios. Furthermore, these objectives vary based on whether general, quality, or high-quality hunts are offered. All game management units in PMU 10 offer general hunting opportunity and associated objectives include maintaining ~25% harvest success, >25% four-points in the harvest, and ~15 bucks per 100 does. Assessment of the current population and harvest status can be found in the biological objectives and hunting and harvest characteristics sections of this report.

Habitat Management and Monitoring

The gentle topography lodgepole pine communities of the Island Park caldera and the moderate to steeply-sloped Centennial Mountain Range with lodgepole pine and Douglas-fir communities dominate most deer summer range for this group of GMUs. Most of this summer range occurs on lands administered by USFS.

Winter range is extremely limited for this deer herd. The Sand Creek winter range supports a vegetative complex typical of high-desert shrub-steppe dominated by sagebrush. Bitterbrush and chokecherry are prominent on areas of stabilized sand; Rocky Mountain juniper is locally abundant. Land ownership consists of a checkerboard of state, BLM, and private property.

A 10,000-acre captive elk operation on private property has fenced off the majority of the South Juniper Hills and portions of the Big Grassy area. Much of this fenced-in property is historic mule deer winter range and is now unavailable to deer. Significant portions of the Sand Creek mule deer population would historically winter on or the North and South Junipers. No severe die-off occurred in response to the fence, but long-term effects remain to be seen. In addition, new developments being built in 2008 near the sand dunes are further limiting mule deer migration to the winter range.

A major habitat concern for this winter range is the continual loss of intact sagebrush stands throughout the area, particularly in the southern and western portions of the winter range. Efforts should be made to try and maintain as much of the sagebrush habitat in the southwest portion of the area as possible.

As mentioned prior, functional habitat loss is serious threat to mule deer in this area and a major wildfire (Big Grassy Fire) ignited and burned over 90,000 acres of the Sand Creek winter range in the summer of 2018. Most of the burn occurred on the more northern and western most areas of the mule deer winter range, but it will likely have some impact on wintering mule deer in this area. It appeared that mule deer distribution and survival was not greatly impacted by the Big Grassy Fire during the 2018-2019 winter.

Department staff and partners will continue to monitor the impacts of this burn and the habitat response over time. It is not the impact of a single event that continues to concern managers, but rather the cumulative effects of numerous events that marginalize or remove quality habitat.

Winter conditions were severe in the Island Park PMU during the 2018-2019 winter with deep snows and severe crusting. The conditions on the Teton Canyon winter range were as bad as staff have observed over the last 25 years. In response to winter conditions this past year and potentially linked to some capture efforts, a large number of our Sand Creek wintering mule deer shifted way south for the latter part of winter. Many of these deer (200ish) crossed highway 33 and spent the winter on Market Lake WMA. Many of these migrating deer were killed via vehicle collisions crossing highway 33.

Biological Objectives

In the recent past (1999-2007), the department monitored mule deer populations in the Island Park PMU via trend area (Sand Creek and Teton Canyon) surveys at the GMU level, starting in 2008 sightability surveys became the tool for monitoring populations at the PMU level. This survey data is then combined with herd composition surveys and through repeated collaring and survival monitoring efforts in an effort to stay abreast of population dynamics.

In February 2008, a complete sightability survey was flown for the Island Park PMU. This survey generated an estimate of 2,397 mule deer (90% bound = 120). Staff flew a complete survey of the Island Park PMU again in 2014, the population estimate was 5,644. This 2014 Island Park estimate was 3,826, a 60% increase over the 2008 survey. Conversely, the Teton Canyon estimate was 1,818, a significant decrease from the 2008 estimate of 2,827.

Recruitment data for this PMU indicate the productive nature of this herd. Since 2001, the fawn:doe ratio for the area has averaged 80 fawns per 100 does.

Since 2003, deer have been radio-collared on winter range in portions of PMU 12 (Sand Creek and Teton Canyon) to measure doe and fawn survival and gather information on distribution and migration routes. Fawn survival has ranged from a high of 84% in 2004 to a low of 11% in 2011. Doe survival has averaged 87% annually since 2006. Dispersal has been monitored and distribution is very widespread with animals summering from the north side of the Centennial Valley in Montana to the east side of Jackson Lake in Wyoming.

Capture, Radio-mark and or Telemetry

As part of the Department's mule deer population monitoring program, adult does and 6 month old fawns are often captured and fitted with radio collars. Biological information is then collected to answer questions related to survival, body condition, pregnancy, and habitat use. These periodical check-ups on populations give managers a feel for what is happening within these populations.

During the 2018–2019 reporting period, the Department monitored 71 adult female mule deer in the Island Park PMU. Overwinter survival of these individuals was 85%. Fawn mortality over this time frame was over 80% as well. The impacts of the 2018-2019 winter and the loss of fawns to the 2016-2017 winter will have population level impacts over the next several years.

Population Surveys and Monitoring

The survey protocol for monitoring mule deer populations in southern Idaho was revised beginning in 2000–2001 and again in 2007–2008. Future plans include the continuation of composition and complete PMU-wide sightability surveys, as specified by the current mule deer management plan.

As part of the Department’s mule deer population monitoring program, population surveys are conducted periodically. Prior to 2008 these surveys were conducted on trend areas by GMU, however current protocol calls for total population surveys at the PMU level to be completed every 4–6 years. Herd composition surveys are typically done annually.

In December 2018, staff conducted aerial herd composition surveys on major winter ranges in PMU 12. This included the Sand Creek and Teton Canyon areas of GMUs 60A and 62. During these surveys, a total of 941 deer were observed and classified, with a resulting fawn:doe ratio of 61:100 and buck:doe ratio of 47:100 (Figure 14). No sightability surveys took place in the Island Park PMU during this reporting period.

Inter-specific Issues

Although deer-elk interactions are not well understood, little evidence exists to support the notion of a negative relationship between mule deer, elk, and moose. White-tailed deer are found throughout most of the PMU but are relatively uncommon.

The new domestic elk operation within the deer winter range has created a situation where wild elk have been attracted to the operation and have started using deer winter range.

Sheep and cattle grazing occur throughout this group of GMUs, which could pose some competitive concerns, especially on winter range during drought years.

Predation Issues

Black bear densities appear to be low and stable in this group of GMUs. Mountain lions are extremely rare. Coyotes are common, especially on Sand Creek Desert winter range.

Wolves introduced in Yellowstone National Park in the 1990’s have become established in this group of GMUs, which could affect other predators and mule deer. Staff continue to monitor cause specific mortality factors to the Island Park population.

Winter Feeding and Depredation

No Department-sponsored feeding activities occur in this group of GMUs except under emergency situations. However, social pressure to feed deer arises during any winter of average or greater severity. During the winter of 2007–2008, the Department fed approximately 800 mule deer on the Sand Creek winter range due to harsh snow conditions.

Hunting and Harvest Characteristics

Total harvest in PMU 12 in 2018 was estimated at 1,157 mule deer based on harvest estimates. This represents an 8% decrease in harvest from 2017 (1,067) and is 9% lower than the previous five-year average of 1,270. Total hunter numbers were estimated at 4,096 for 2018 compared to 4,342 hunters for 2017. An average of 36% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 28% hunter success rate over this same 3 year period (Figure 14).

2019 and 2020 Antlerless hunting opportunity was reduced for this deer population as a result of the 2016-2017 and 2018-2019 winter mortality events. Youth Harvest was shortened to the first week of the season and all antlerless controlled hunt opportunity was reduced by 50%.

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved our CWD Response and Monitoring Plan in 2017. This plan identifies areas of high potential for CWD occurrence and the Island Park PMU is one of the most likely areas for CWD to be detected. This is due to the fact that both Wyoming and Montana have had deer test positive for CWD near the Idaho border over the last couple of years.

With the Island Park PMU area being identified as an area of high potential for CWD to occur, the CWD plan calls for elevated annual testing of mule deer. This elevated level of testing began in 2017 and continued in 2018.

Other disease concerns will be evaluated on a case by case and needs basis. Any animals that are showing signs of illness will be collected and sent to the health lab for testing.

Management Discussion

We have now finished both the baseline sightability survey for PMU 12 as described in the 2008 Mule Deer Management Plan. There have been 2 complete sightability surveys completed for the Island Park PMU (2008 and 2014). We will continue to need composition and survival data for fawns and does.

Harvest information is also important data that we need to continue collecting and enhance the timeliness and the reporting percentage if possible. Harvest information is used for setting seasons on a bi-annual basis. The quality of that data is very important.

Many regions manage antlerless mule deer as part of their regular harvest by both youth either sex or controlled permit hunting. The Sand Creek and Teton Canyon mule deer herds are truly driven by severe winter events, much more so than other populations within the region. In addition, both of these 2 wintering herds have limited winter range resources, responsible population management through antlerless harvest is an important component to managing these 2 herds. Research to document the effect of doe harvest on population productivity, age structure of the population, and that effect on population size would be beneficial. This research would help improve our baseline knowledge of antlerless harvest and allow us to better manage mule deer populations for increased productivity.

Mule Deer Island Park PMU 12 (GMUs 60, 60A, 61, 62, 62A)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Increase	Increase
Hunter Days	>17,500	>20,000

Square Miles =	2,886	3-Year Averages	
% Public Land =	62%	Hunters per square mile =	1.44
Major Land Type =	Forest/Desert	Harvest per square mile =	0.74
		Success Rate =	30%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer					5,644					

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	79	73	70	72	ND	79	73	67	61	
Buck:Doe	28	31	28	31	ND	37	24	24	47	
Fawn Survival	0.6	0.18	ND							
Adult Doe Survival	0.86	0.74	0.98	0.92	0.96	0.89	0.87	0.91	0.96	0.85

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	2,949	15,081	157	339	46%
2010	3,225	15,610	203	427	36%
2011	2,760	13,651	81	246	31%
2012	2,818	14,067	154	419	39%
2013	3,779	17,634	215	580	37%
2014	4,687	22,482	444	758	35%
2015	5,006	24,514	542	891	41%
2016	3,999	24,097	549	941	42%
2017	4,342	26,274	396	671	37%
2018	4,096	23,203	404	753	29%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
60A	4,484	ND	2,866	1,332	2,025	1,492	2,123	ND	1,881	ND
62	ND	ND	1,626	614	1,257	ND	ND	1,775	ND	1,340

Note: ND = no survey data available

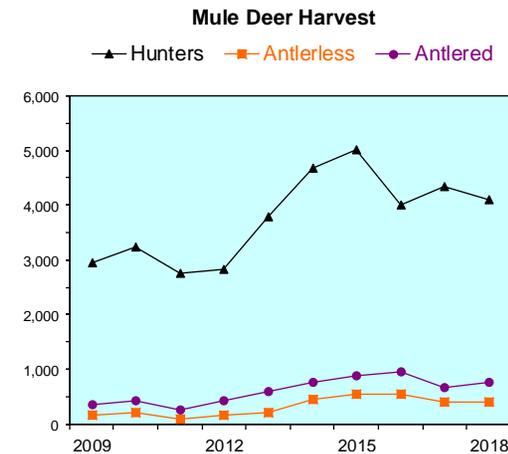
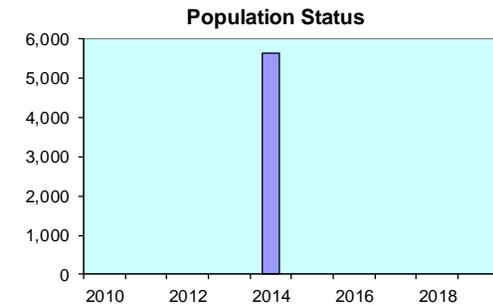


Figure 14. Island Park Mule Deer PMU Status and Objectives.

MOUNTAIN VALLEY

PMU 13 (GMUs 21A, 29, 30, 30A, 37, 37A, 51, 58, 59, 59A)

Historical Perspective

Mule deer were scarce and harvests low for much of the early part of the twentieth century. By mid-century, mule deer had become the predominant big game animal. Once known for productive mule deer populations, particularly in the Pahsimeroi and Little Lost valleys, these GMUs yielded very large mule deer harvests in the 1950s and 1960s. By the 1970s, harvests had dropped by two-thirds as more conservative management strategies were implemented. Despite 2 decades of very conservative antlerless harvests and increasingly conservative buck seasons, mule deer populations have failed to return to their previous high densities and are stable at moderate levels.

Although deer herds declined well before any significant increase in elk numbers, current high elk densities may be contributing to suppressed deer populations. However, in GMUs 58, 59, and 59A where elk densities have also increased substantially, trend counts suggested that deer populations in the mid-2000s were at or slightly above late 1960s levels. Many of the deer in these units migrate to higher-quality summer ranges in Montana, returning to Idaho winter ranges in November.

The winters of 2016-2017 and 2018-2019 more severe than average and resulted in elevated levels of fawn and adult mortality. These mortality events will influence population and deer densities over the next several years.

The current general season structure for the Mountain Valley PMU has remained the same since 2009 when the general any-weapon hunt was shortened from 31 October to the current end date of 24 October. All of the GMUs within the PMU, except Units 30A and 37, are included in the general deer season framework. Game management unit 37 has a 7 day general season only. This shortened season precipitated after a local citizen's wildlife group expressed concern in not having enough quality bucks. The current controlled hunt opportunities for the PMU are:

- GMU 30A – In 2008, 30A transitioned out of the general regular deer season and moved to an antlered only controlled hunt (10 October–31 October), while maintaining some antlerless harvest for youth on private lands.
- GMU 30 – Antlered only controlled hunt from 10 October–30 November. This hunt was first implemented in 2013.
- GMU 51 – Either sex muzzleloader opportunity from 1 November–30 November since 2007. Prior to 2007 dates ran from 25 November–9 December.
- GMUs 29 and 37A – Antlered only muzzleloader from 25 November–9 December.
- GMUs 21A, 29, 30, 30A and 37A– These GMUs are all part of an archery controlled hunt with dates running from 15 August–29 August. This hunt was first implemented in 2015.

Management Objectives

Harvest and population objectives for mule deer in Idaho are identified in the mule deer management plan. This includes objectives for hunter success, percent four-points in the harvest,

and buck:doe ratios. Furthermore, these objectives vary based on whether general, quality, or high-quality hunts are offered. All GMUs in PMU 13, except for 30A, offer general hunting opportunity and associated objectives include maintaining ~25% harvest success, >25% four-points in the harvest, and ~15 bucks per 100 does. Assessment of the current population and harvest status can be found in the biological objectives and hunting and harvest characteristics sections of this report.

Habitat Management and Monitoring

Much of the land in these GMUs is administered by BLM or USFS, with private lands mostly restricted to valley bottoms. Cattle ranching, livestock grazing, and recreation are dominant human uses of the landscape. PMU 13 is generally arid; forage production and deer harvest can be strongly influenced by growing-season precipitation. Deer depredations on agricultural crops are common in GMUs 29, 30, 30A, 37, and 37A and are especially pronounced in dry years. Depredations in GMUs 51, 58, 59, and 59A are limited.

Habitat ultimately determines deer densities and productivity. However, specific limiting factors within the habitat are poorly understood. In some areas, deer winter in mature stands of mountain mahogany that appear relatively stagnant and unproductive. Winter range shrub stands, specifically mountain mahogany in parts of Little Lost Valley have been lost or degraded. Elk and livestock may have removed much of the mountain mahogany forage within reach of deer. In GMUs 29, 30, 30A, 37 and 37A domestic livestock grazing in high -quality riparian areas may limit available forage to mule deer. Conifer is slowly encroaching into shrub and grassland communities, which may decrease forage abundance. Spread of noxious weeds and annual grasses, such as knapweed, leafy spurge, and cheatgrass, could ultimately have significant impacts on winter range productivity.

Traditionally, deer in GMUs 58, 59, and 59A concentrate on winter ranges at the south end of the Beaverhead Range. Heavy snows in the late 1960s placed tremendous pressure on very narrow portions of these GMUs, killing many browse plants. Winter-range habitat condition is still poor to fair for many of the bitterbrush and mountain mahogany stands important to wintering deer. Mountain mahogany, the primary winter browse species, is still heavily hedged with little regeneration. Domestic sheep grazing in winter-range is contributing to this overuse.

Biological Objectives

Mule deer populations were monitored via surveying core trend areas from 1999–2007. PMU 13 contained 2 trend areas: Leadore (GMUs 30/30A) in Salmon Region and Reno Point (GMUs 58 and 59A) in Upper Snake Region. Total deer estimated in 2003 for both areas combined (2,563) fell slightly below the previous antlerless harvest threshold of 2,600 for the first time in several years, but rebounded to over 3,100 deer in 2005.

In 2008 population monitoring transitioned from trend areas to conducting complete population surveys for the PMU. A total abundance survey for PMU 13 was conducted in 2016 with a total population count of 20,730 total deer.

Hunter participation has increased from an average of 4,480 hunters in the 1990s to an average of 5,783 hunters over the last 10 years. In 2017, 6,028 hunters hunted mule deer in PMU 13.

From 2012–2014 hunter days were slightly under objective of 25,000. However, in 2017 the objective was achieved with 31,114 hunter days attributed to PMU 13. With the current shortened general season, hunters are concentrated in a shorter season, which could be leading to congestion. Harvest declined from 2008–2012, but then slowly increased to the 2016 high of 2,000 bucks harvested. A severe winter in 2016–2017 really impacted fawn recruitment and harvest in 2017 reflected this lack of yearling deer in the harvest with only 1,583 bucks harvested. An average of 1,595 bucks have been harvested annually over the previous 5 years (2013–2017) The 2018 buck harvest was 1,366, percent of the buck harvest ≥ 4 points for the previous 5 years (2013–2017) has been 34%. In 2018, 31% of the buck harvest was ≥ 4 points. The trend for the PMU continues to be above the $>25\%$ four-points in the harvest management objective. Buck ratios have exceeded management objective (minimum of 15 bucks:100 does post-season) in recent years.

Capture, Radio-mark and or Telemetry

As part of the Department’s mule deer population monitoring program, adult does and 6 month old fawns are often captured, fitted with radio collars, and biological information collected in order to answer questions related to survival, body condition, pregnancy, and habitat use. These periodical check-ups give managers a feel for what is happening within these populations.

During this reporting period, 40 adult does and 38 fawns were monitored. Adult doe survival was 97% and fawn survival was 41% (fawn survival measured from 6-months to 1 year of age).

Population Surveys and Monitoring

Survey protocol was revised beginning in 2000–2001 and again in 2007–2008. From 1999–2007, mule deer populations were monitored by flying trend areas, which were smaller subsets of the larger population area. In 2008, population monitoring transitioned to the Department doing complete population surveys, where the entire PMU population is surveyed. Future plans include the continuation of composition and complete surveys utilizing sightability methodology, as specified by the current mule deer management plan.

During this reporting period there were no total population surveys completed, but staff did conduct composition surveys throughout the PMU. These composition surveys resulted in a total of 1,656 mule deer being surveyed. There were 820 does, 658 fawns, and 161 bucks. These totals resulted in a fawn:doe:buck ratio of 81:100:20. Worth mentioning is that the GMU 58 and 59A buck ratios continue to be a point of concern with these buck:doe ratios being 13:100. The more northern GMUs (21A, 30, 37, and 37A) within the PMU had a buck:doe ration of 25:100.

Inter-specific Issues

Current high elk densities may be having some impact on the area’s capacity to produce deer in all GMUs except 58, 59, and 59A. White-tailed deer, a potentially strong competitor, are mostly restricted to private agricultural lands along major riparian areas. In some limited areas, mountain goats and mule deer may be competing for the same mountain mahogany winter ranges. Pronghorn and bighorn sheep also share the range but generally overlap little with mule deer. Livestock rangeland grazing exists, which is another potential source of competition, particularly in the moister summer range habitats and the southern winter ranges. Domestic

livestock grazing, especially in riparian areas, may be direct competition for transitional, summer, and winter range forage for mule deer; however, the extent is currently unknown.

Predation Issues

Black bear densities appear to be low and stable. Mountain lion densities are low to moderate. Coyotes are common and have an unknown impact on deer populations in this area. Bobcats, red fox, and golden eagles also occur in the area, but are not thought to account for significant predation on deer. Wolf populations are present and relatively stable in PMU 13. Wolf predation on MD is very low in PMU 13.

Winter Feeding and Depredation

Because this is an arid area with relatively little snowfall, winter-feeding has not occurred in these GMUs in recent years.

Harvest Characteristics

Total harvest in PMU 13 in 2018 was estimated at 1,751 mule deer based on mandatory harvest report cards. This represents an 11% decrease in harvest from 2017 (1,968) and is 12% lower than the previous five-year average of 1,988. Total hunter numbers were estimated at 6,235 for 2018 compared to 6,028 hunters for 2017. An average of 35% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 28% hunter success rate (Figure 15).

The 2019 and 2020 antlerless hunting opportunity was reduced for the deer herds in units 51, 58, 59, and 59A as a result of the 2016-2017 and 2018-2019 winter mortality events. Youth Harvest was shortened to the first week of the season.

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved our CWD Response and Monitoring Plan in 2017. This plan identifies areas of high and moderate potential for CWD occurrence and the Mountain Valley PMU is one of the areas identified as having a moderate likelihood of detecting CWD. With much of the PMU bordering Montana, which has tested positive for CWD, the PMU will have an elevated CWD testing protocol implemented at least once every 3 years.

Other disease concerns will be evaluated on a case by case and needs basis. Any animals that are showing signs of illness will be collected and sent to the health lab for testing.

Management Discussion

Impacts of elk on mule deer production and survival are suspected but not quantified. Better information is needed to identify appropriate deer densities that will maintain optimum productivity and harvest.

In winter 2005–2006, the Department placed radio collars on 17 adult deer in GMU 51. This was the first time deer were marked in this GMU and the data collected indicate that deer wintering in this GMU do not move very far to summer range. This is very unusual for this part of Idaho. Adult doe survival was 91% in 2015 and had average 87% over the previous 4 years.

Deer in GMU 30 were radio-marked in December 2003 and 2004 as part of the fawn monitoring project in Salmon Region. As suspected, most deer migrated to Montana summer ranges. In some cases, migration distances were significant. One collar was shed approximately 96 km north of the animal's winter range near the Continental Divide in the Anaconda-Pintlar Wilderness. More recent collar data from GMU 30 indicates that a large portion of the wintering deer population migrates to summer range in Montana. More information on summer range type, condition, and usage is needed to make inferences on the potential impact to mule deer production in this PMU.

Potential competition from grazing livestock in GMUs 29, 30, and 30A may be occurring. Better information is needed to identify the presence and extent of direct competition from domestic livestock, as well as indirect competition from elk foraging displaced by domestic grazing.

The mule deer population in GMU 37, though meeting objectives has the attention of hunters who want to see the GMU managed as a "Quality" GMU with habitat enhancements aimed at increasing overall deer numbers and productivity. In 2014, 2 mule deer does were collared with GPS collars and 5 more were collared in 2015 to track habitat use and analyze vital rates useful in developing appropriate management actions.

The mule deer in GMUs 58, 59 and 59A receive a substantial amount of hunting pressure and the area is a destination for youth hunters hoping to fill an antlerless tag. The topography, terrain, and habitat type across these GMUs makes hunter success high and deer are potentially more vulnerable than in other units. Buck ratios are typically low for this wintering deer herd with buck:doe ratios being as low as 6 in the mid-2000s to as high as 24:100 in the winter of 2015–2016.

Mule Deer

Mountain Valley PMU 13 (GMUs 21A, 29, 30, 30A, 37, 37A, 51, 58, 59, 59A)

Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Maintain	Increase
Hunter Days	>20,000	>25,000

Square Miles =	4,988	3-Year Averages	
% Public Land =	87%	Hunters per square mile =	1.17
Major Land Type =	Forest/Rangeland	Harvest per square mile =	0.55
		Success Rate =	34%



Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer							20,730			

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	60	59	59	63	66	79	66	58	81	
Buck:Doe	16	19	15	24	22	26	20	18	20	
Fawn Survival	0.57	0.35	0.35	0.35	0.52	0.66	0.58	0.34	0.45	0.41
Adult Doe Survival	0.93	0.84	0.96	0.82	0.85	0.91	0.83	0.95	0.95	0.97

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
 Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

Year	Hunters		Deer Harvest		
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	5,652	24,707	320	1,067	25%
2010	5,135	21,682	269	1,079	25%
2011	5,383	22,277	315	1,171	32%
2012	5,624	24,364	359	1,350	33%
2013	5,678	24,760	303	1,282	33%
2014	6,014	24,853	325	1,349	33%
2015	6,563	26,964	453	1,758	32%
2016	5,296	24,577	338	2,000	36%
2017	6,028	31,114	385	1,583	38%
2018	6,235	31,966	385	1,366	31%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
29	592	521	676	730	885	885	685	ND	ND	ND
30/30A	ND	1,411	1,792	1,453	1,156	1,156	734	805	1,350	1,084
51	ND	500	ND	ND	ND	ND	ND	ND	1,232	ND
58/59A	ND	ND	2,280	1,900	1,407	1,407	ND	2,323	ND	1,740

Note: ND = no survey data available

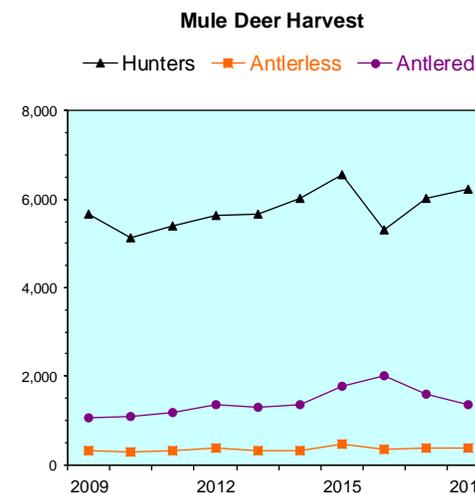
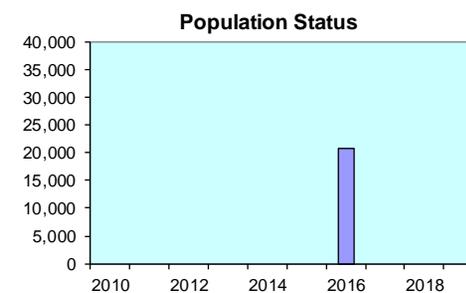


Figure 15. Mountain Valley Mule Deer PMU Status and Objectives.

SNAKE RIVER

PMU 14 (GMUs 38, 52A, 53, 63, 63A, 68, 68A)

Historical Background

The deer population in the Snake River PMU has likely changed very little since historic times. Accounts of trappers through this area in the mid-1800s indicated that buffalo, elk, pronghorn, and bighorn sheep were far more common than mule deer. Given the low densities of deer and the limited viability of the existing habitat to support any significant population, this PMU has been of relatively low priority for dedicating resources or collecting data, resulting in limited knowledge of historic and current population trends.

Mule deer habitat in GMU 38 consists of high dessert scrub and riparian habitats associated with the Snake, Boise, and Payette rivers and Lake Lowell. Deer also frequent agricultural fields, orchards, and vineyards. Mule deer in GMU 38 are considered year-round residents, overlapping sporadically with the large migratory deer herds wintering on the Boise Front. Most management and season-setting efforts focus on depredation concerns while recognizing that this GMU is not capable of supporting a high-density deer population. The GMU does provide a short-range only, either-sex deer hunt that is popular with some local hunters, but relies on access to private land, as public land is very limited in the GMU.

It has been reported that mule deer were relatively abundant in GMU 53 around 1900. However, deer habitat was substantially altered with human settlement and the subsequent wide-scale conversion of native sagebrush landscapes to irrigated agriculture. Today, more than half of GMU 53 is irrigated farmland. The northern portion of the GMU contains an extensive tract of land managed by BLM, primarily for livestock grazing. Today, much of the BLM land in GMU 53 has been reseeded to crested wheatgrass or is dominated by invasive annual grasses as a result of wildfire, reducing habitat value for mule deer.

GMUs 52A and 53 currently maintain a small resident deer population and cannot support many deer without unacceptable conflicts with agriculture. Depredation complaints from orchards, vineyards, and irrigated crops in the Snake River Canyon are common. GMU 53 has some importance as winter range for mule deer from GMUs to the north. Movement of deer into GMU 53 during winter was first noted in the early 1980s following extensive fires and loss of sagebrush habitat in GMU 52A. The number of wintering deer varies considerably depending on winter severity and snow depths. During the winters of 1985-1986 and 1992-1993, thousands of mule deer moved into GMU 53 resulting in widespread depredation complaints, primarily on stored crops. During the severe winter of 2001-2002, large numbers of deer moved into GMU 53, primarily east of Jerome, which resulted in a substantial number of deer-vehicle collisions on Interstate 84.

Buck harvest in GMU 52A is managed under general archery and any weapon season frameworks. Antlerless harvest is allowed during general archery and by youth hunters during the any weapon season. Harvest management in GMU 53 is currently designed to keep resident deer numbers low. Short-range weapon hunting on the west side of the GMU has been successful in minimizing complaints from orchard owners. On the east side of the GMU, a long archery season from 30 August through 19 December allows a substantial amount of hunting opportunity

close to the Magic Valley Region's population centers. In 2001, the state record archery-harvested mule deer buck was taken in GMU 53.

Mule deer habitat in GMUs 63 and 63A is fairly limited with most deer densities being concentrated around agricultural fields and riparian habitats with some deer moving onto native ranges as winter conditions set in. Most management or season setting efforts focus on depredation concerns or responsible maintenance of low mule deer numbers. Mule deer hunting opportunity in GMU 63A is offered as an either-sex controlled hunt with seasons running from 5 October–31 October. Game management unit 63 offers a general short range mule deer hunting from 10 October–24 October with Youth being able to harvest either sex mule deer. Game management unit 63 also offers either sex archery season on mule deer with 2 seasons, 30 August–30 September and 1 November–19 December.

Habitat for mule deer in GMU 68 is limited with most deer concentrated around agricultural fields and some isolated groups found in the sage-steppe interior portions of the GMU. Game management unit 68 offers general any-weapon seasons 10 October–24 October, and during the 2015–2016 seasons a 20 tag either sex muzzleloader controlled hunt was offered from 16 November–30 November.

Game management unit 68A encompasses the Snake River and adjacent riparian habitat and agricultural land from Blackfoot downstream to American Falls, inclusive of the reservoir. Season structure in the GMU has been in the form of an archery only unlimited controlled hunt for either-sex deer from 30 August–19 December. A few limited controlled extra antlerless deer tags have been offered to address areas with depredations. The majority of the harvest in this GMU is white-tailed deer, with mule deer typically accounting for 20–40% of the total harvest.

Management Objectives

Given the low habitat potential for Snake River (PMU 14, Figure 16) to support high densities of deer and the limited ability to collect reliable population information, the management objective will be to maintain deer and not fall below 30% 4+ points in the antlered deer harvest.

Habitat Management and Monitoring

This PMU is primarily comprised of dry desert shrub types, thus representing low productivity potential and a low likelihood of supporting high numbers of mule deer. However, agriculture combined with riparian habitats along the Snake River in GMUs 63A and 68A can provide for higher populations.

The BLM administers the majority of public ground (approximately 56%) in PMU 14. Private ground makes up approximately 33% and the Idaho National Laboratory, Fort Hall Indian Reservation, and Craters of the Moon National Park combine for the remaining 11%. Most private ground is used for production of row crops and is situated along the Snake River plain. Both mule deer and white-tailed deer periodically create depredation concerns within agricultural zones.

Wildfires continue to play a major role with habitat throughout the PMU. In many cases, vast expanses of sagebrush habitat has been lost to fire and replaced with non-native annual and

perennial grasses. Large fires have become nearly an annual occurrence in portions of this PMU, particularly in GMUs 52A and 53.

Biological Objectives

The majority of this PMU lacks potential to support good numbers of mule deer. No reliable population information is available to determine changes and/or trends in populations. Mule deer probably increase somewhat during favorable environmental conditions but can be drastically reduced during significant winter events. White-tailed deer comprise a small percentage of total deer in this area and are primarily restricted to riparian/agriculture habitats of the Snake River floodplain. No trend information exists relative to the composition of mule deer versus white-tailed deer. The little movement information we have indicates deer have some rather complicated migration patterns within and in and out of this area.

Population Surveys and Monitoring

Sightability surveys are conducted periodically in PMUs to determine herd composition and derive a population estimate. These estimates are then compared to objectives outlined in the mule deer plan to determine what management direction is needed. Given the low density of mule deer and the low potential for the PMU to support deer, no sightability surveys are conducted in the Snake River PMU.

Capture, Radio-mark and or Telemetry

As part of the Department's mule deer population monitoring program, adult does and fawns are captured and fitted with radio collars in selected PMUs throughout the state. The Snake River PMU is not part of this program.

Inter-specific Issues

Mule deer share the habitat with livestock, elk, pronghorn, and white-tailed deer. It is unknown what impacts an increasing elk population or sympatric whitetails may have on mule deer. It is doubtful that pronghorn have any impact on mule deer. Much of the Snake River floodplain is used to winter livestock and, in many cases, riparian shrub communities have been significantly altered. Additionally, a mule deer's social intolerance for livestock may make much of the riparian habitats unavailable to mule deer during winter months.

Predation Issues

Coyotes and bobcats are the predominate predators of mule deer in this PMU. Trends in bobcat numbers are unknown; it is believed that coyotes have increased over the last 30 years. It is unknown whether coyotes are significantly impacting mule deer population dynamics.

Winter Feeding and Depredation

The winter of 2016–2017 was quite severe and several emergency winter feeding sites were established in this PMU. The Department will work closely with Regional Winter Feeding Advisory Committees to evaluate future supplemental feeding issues.

Depredation complaints on orchards and vineyards are common in GMU 38 and both depredation hunts and kill permits are issued on a regular basis. Several mule deer depredation complaints also occurred in GMUs 53, 68, and 68A during this reporting period.

Hunting and Harvest Characteristics

Total harvest in PMU 14 in 2018 was estimated at 908 mule deer based on mandatory harvest report cards. This represents a 6% decrease in harvest from 2016 (961) and is 2% lower than the previous five-year average of 924. Total hunter numbers were estimated at 3,733 for 2018 compared to 4,007 for 2017. An average of 41% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been 4-point or larger with a 24% overall hunter success rate in 2018 (Figure 16).

Disease Monitoring

As part of a disease monitoring effort, the state updated and improved our CWD Response and Monitoring Plan in 2017. This plan identifies areas of high and moderate potential for CWD occurrence and the Snake River PMU is one of the areas identified as having a moderate likelihood of detecting CWD. The PMU will have a CWD testing protocol implemented at least once every 3 years. The protocol was implemented in this PMU during the 2018 reporting period. Fourteen mule deer were sampled and none tested positive for the disease.

Other disease concerns will be evaluated on a case by case and needs basis. Any animals that are showing signs of illness will be collected and sent to the health lab for testing.

Management Discussion

Given the low potential for supporting high numbers of mule deer throughout this PMU, little population information would be warranted. However, some information would be valuable.

Although no widespread deer mortality events were documented in this PMU during the severe winter of 2016–2017, the observed decline in overall harvest is likely an artifact of decreased winter survival. However, recent deer observations and an increase in deer depredation complaints in several GMUs indicate mule deer numbers may be increasing in this PMU.

Many feel that illegal harvest of mule deer throughout much of this area poses a significant threat to populations (GMUs 63, 68, and 68A). Efforts to substantiate or disprove this concern would prove valuable as resources allow.

Mule Deer Snake River PMU 14 (GMUs 38, 52A, 53, 63, 63A, 68, 68A)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Maintain	Maintain
Hunter Days	>12,000	>12,000

Square Miles =	10,160	3-Year Averages	
% Public Land =	57%	Hunters per square mile =	0.37
Major Land Type =	Desert/Agriculture	Harvest per square mile =	0.15
		Success Rate =	24%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer										

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	ND									
Buck:Doe	ND									
Fawn Survival	ND									
Adult Doe Survival	ND									

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	4,011	20,331	259	461	35%
2010	3,787	17,861	333	595	32%
2011	3,967	18,836	337	439	34%
2012	3,469	17,113	292	553	40%
2013	4,276	19,472	321	666	37%
2014	4,125	19,719	246	563	36%
2015	4,322	21,367	446	639	46%
2016	3,453	17,172	262	699	37%
2017	4,007	19,349	277	583	48%
2018	3,733	17,934	312	596	37%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Note: ND = no survey data available

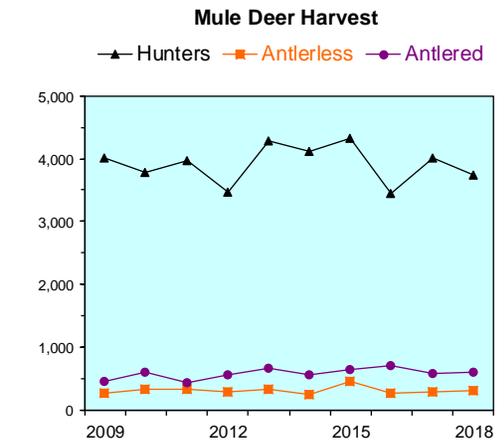
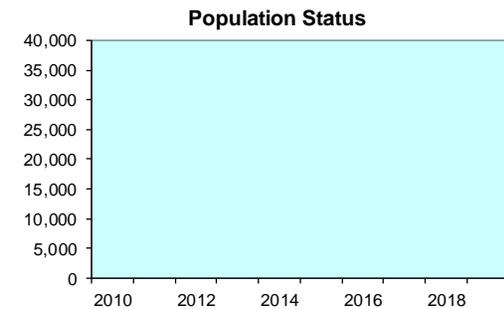


Figure 16. Snake River Mule Deer PMU Status and Objectives.

NORTH IDAHO

PMU 15 (GMUs 1, 2, 3, 4, 4A, 5, 6, 7, 8, 8A, 9, 10, 10A, 12, 15, 16, 16A, 17, 19, 20)

Historical Background

USFS records and the memories of long-term residents indicate big game, including mule deer, were relatively scarce in the early 1900s. Large-scale fires between 1910 and 1931 created large brush-fields favored by mule deer. This newly created habitat, in combination with a major predator reduction program beginning in the early 1920s, allowed sustained growth of mule deer, white-tailed deer, and elk populations. Despite a series of severe winters, mule deer populations continued to increase and by the mid-1950s, mule deer were estimated by USFS and Department biologists to outnumber white-tailed deer in the central part of the PMU.

Concern about over-browsed winter ranges and an overabundance of deer throughout the state, in general, led to aggressive management to reduce the deer population. By the early 1970s, this goal was accomplished and shorter seasons were authorized. Deer seasons in PMU 15 have traditionally allowed hunters to take either mule deer or white-tailed deer under the same tag; however, antlerless harvest is now restricted to white-tailed deer only in the Panhandle Region portion of this PMU.

Game management units 1, 4, 4A, 6, 7 and 9 are predominately timbered with the majority of ownership being private timber companies, IDL, or USFS. Timber harvest began in these GMUs during the early 1900s and increased dramatically in the 1970s. Until the 1930s, wildfire was the primary habitat disturbance mechanism in GMUs 4, 6, 7 and 9. Between 1900 and 1934, the majority of these GMUs were burned by wildfires. From the 1920s to 1990, thousands of miles of roads were built for timber harvest in GMUs 4, 6, 7 and 9. GMUs 2, 3 and 5 are predominately private ownership with significant areas of agricultural and/or residential development. The Snow Peak Wildlife Management Area in GMU 9 is co-managed by the Department and the USFS to provide back country recreational opportunities.

Game management units 10, 10A, 12, 15, and 16 are also predominately timberlands with the majority of ownership being private timber companies, IDL, or USFS. Most private ownership is at lower elevations along the breaks of Clearwater River. Timber harvest began in GMU 10A during the early 1900s and increased dramatically in the 1970s. In 1971, Dworshak Reservoir flooded approximately 45 miles of North Fork Clearwater River in GMU 10A and permanently removed thousands of acres of prime low-elevation big game winter range. Until the 1930s, wildfire was the primary habitat disturbance mechanism in GMUs 10, 12, and 16. Between 1900 and 1934, approximately 70% of the Lochsa River drainage was burned by wildfires. From the 1920s to 1990, thousands of miles of roads were built for timber harvest in GMUs 10A, 10, 12, 15, and 16. In 1964, most of the southern portion of GMU 12 was designated as part of the Selway-Bitterroot Wilderness.

Game management units 16A, 17, 19, and 20 represent much of Idaho's backcountry; much of the area is designated wilderness. With the rugged, remote terrain and difficult access, management control of deer herds has been difficult at best. The forces of weather, fire, and plant succession have ultimately played a much larger role in deer populations than efforts of wildlife managers. A mid-September to late November season (Appendix A) has been standard

in the backcountry GMUs since the 1950s. Even today, much of the deer harvest is localized around access points such as roads and airstrips and much of the harvest is incidental to elk hunting.

Management Objectives

Mule deer comprise less than 10% of the deer harvested in this PMU; although in some GMUs (7 and 9) mule deer may comprise over 50% of the deer harvested. Aerial surveys are not practical in most of these GMUs because mule deer are scarce and hiding cover is abundant. Aerial surveys are not conducted in other GMUs (16A, 17, 19 and 20) because of their remote wilderness setting and relatively little emphasis on targeting of mule deer by hunters. The only management objective that applies to this PMU under the current plan is to maintain hunter days at $\geq 25,000$. This objective was met with 29,044 hunter days in 2018. .

Habitat Management and Monitoring

Much of the land in PMU 15 is administered by USFS, with private lands mostly restricted to the valley bottoms. Recreation and timber management are the dominant human uses of the landscape in these GMUs. PMU 15 is a generally moist region with nearly continuous canopy coverage. Mule deer mix with white-tailed deer during winter, although there is a tendency for mule deer to winter at slightly higher elevations.

Much of the mule deer habitat in this area is the result of large fires during the early 1900s with some habitat created when large areas were block clear-cut during the 1960s. Currently, both influences have little effect on the landscape, and mule deer habitat can be expected to decline in quantity and quality as succession progresses, turning brush-fields back into timber.

Biological Objectives

There is very little known about the ecology of mule deer in the heavily forested environments typical of much of this PMU. The timbered nature of the landscape, combined with the relative scarcity of mule deer concentrations, does not allow aerial surveys to be used to monitor mule deer populations in this area. The influence of hunting on mule deer population dynamics is believed to be minor, based on the minor influence of hunting measured on white-tailed deer populations in the same areas. The high percentage of ≥ 4 -point bucks in the antlered harvest (~50%) is consistent with this hypothesis. In 2018, 51% of the harvest was $> 4+$ point bucks.

Capture, Radio-mark and or Telemetry

No mule deer were captured or radio-marked during 2018 in the North Idaho PMU.

Population Surveys and Monitoring

There was no population surveys conducted in 2018 in the North Idaho PMU. Mule deer were monitored incidentally on game cameras deployed for wolves throughout the PMU since 2016 and for elk in Units 6 and 15 in 2018-2019. Two game check stations were run for 4 days in GMUs 4 and 6 in 2018 to monitor mule deer harvest. Additionally a check station was conducted in GMU 15 for nine days that incidentally monitored mule deer harvest in Unit 15 and surrounding units.

Inter-specific Issues

White-tailed deer, mule deer, and elk have sympatric ranges throughout the year in PMU 15. Mountain goat and moose distribution overlaps that of mule deer in some areas. The effects of inter-specific competition are unknown but are felt to be of minor consequence at existing population levels.

Predation Issues

Mountain lions, black bears, bobcats, coyotes, and wolves exist throughout the area. In the mid-1990s a major increase in the mountain lion population was detected, leading to increased public concern over the impacts of predation of future mule deer populations. High participation in mountain lion hunting led to record harvests during this period but has since declined. Current mountain lion numbers are assumed to be significantly lower than those found 10-15 years ago. Predation can be an important factor in the population dynamics of mule deer in this PMU. Radio-telemetry studies conducted in the Priest River Basin during the late 1980s and early 1990s indicated this was the case with white-tailed deer. Wolves reintroduced by USFWS in central Idaho in the mid 1990's have become well established in these GMUs. The addition of wolves will likely have an impact on black bear, mountain lion, and coyote populations. At some level, predation could benefit deer herds to the extent that it reduces elk competition and keeps deer herds below carrying capacity where they can be more productive. However, excessive levels of predation can also suppress prey populations to undesirably low levels. At this point, it is unclear what the net impact of predation will be with the new mix of large predators.

Winter Feeding and Depredation

No emergency winter-feeding has been undertaken since the 1996–1997 winter, when a small numbers of mule deer were fed. The most recent winters (2015–2017) had near normal temperatures and moisture levels, with much of the precipitation coming late (February–April) and in the form of rain at lower elevations. Consequently, there was no call for winter-feeding.

Hunting and Harvest Characteristics

Total harvest in PMU 15 in 2018 was estimated at 870 mule deer based on mandatory harvest report cards. This represents a 4% increase in harvest from 2017(837) and is 19% lower than the previous five-year average of 1,075. Total hunter numbers were estimated at 3,685 for 2018 compared to 3,300 in 2017. An average of 47% of the bucks harvested in these GMUs over the past 3 years (2016–2018) have been ≥ 4 -point with a 28% hunter success rate (Figure 17).

Disease Monitoring

No disease monitoring was done during 2017 on mule deer in PMU 15.

Management Discussion

With the exception of check station information, the Department did not collect information specific to mule deer harvest in PMU 15 from 1979 to 2017. Hunter effort has only been documented since 1996. Good harvest data is of utmost importance here because aerial surveys

are impractical due to heavy tree cover and small, scattered pockets of wintering mule deer. Basic ecological information is lacking on mule deer ecology in heavily timbered environments.

Mule Deer

North Idaho PMU 15 (GMUs 1, 2, 3, 4, 4A, 5, 6, 7, 8, 8A, 9, 10, 10A, 12, 15, 16, 16A, 17, 19, 20)



Management Objectives

	Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD
Pop. Goal	Maintain	Maintain
Hunter Days	>25,000	>25,000

Square Miles =	16,997	3-Year Averages	
% Public Land =	69%	Hunters per square mile =	0.21
Major Land Type =	Forest	Harvest per square mile =	0.07
		Success Rate =	28%

Population Status

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
# of Deer										

Population Parameters

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Fawn:Doe	ND									
Buck:Doe	ND									
Fawn Survival	ND									
Adult Doe Survival	ND									

Note: Raw Fawn:Doe expressed as fawns per 100 does, Raw Buck:Doe expressed as bucks per 100 does
 Raw Fawn Survival = overwinter survival (Dec-May), Raw Adult Doe Survival = over winter survival (Dec-May)

Harvest Statistics

	Deer Harvest				
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
2009	5,511	33,037	90	911	52%
2010	4,524	27,565	92	853	46%
2011	4,050	24,899	106	579	48%
2012	4,518	27,618	82	815	52%
2013	4,227	25,372	122	820	50%
2014	5,196	31,870	165	930	46%
2015	4,930	28,162	93	1,103	48%
2016	3,779	30,084	125	1,179	45%
2017	3,300	25,506	114	723	46%
2018	3,685	29,044	112	758	51%

Previous Trend Area Surveys

GMU	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Note: ND = no survey data available

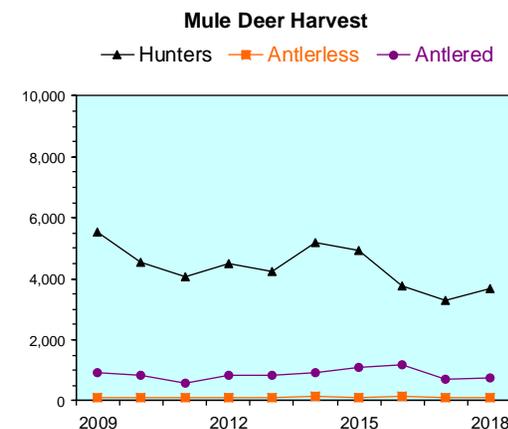
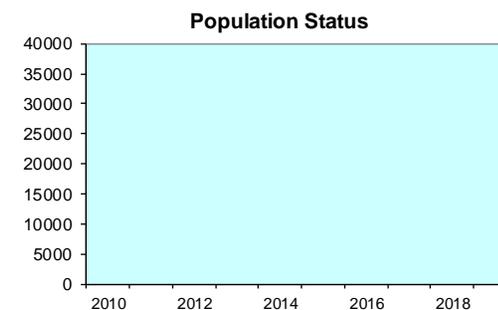


Figure 16. North Idaho Mule Deer PMU Status and Objectives.

Appendix A
IDAHO
2018 SEASON
MULE DEER RULES

Idaho Big Game

2017 and 2018 Seasons & Rules

2nd Edition, 2018

Idfg.Idaho.gov



Controlled Hunt Application Periods

Deer, Elk, Pronghorn & Fall Black Bear: May 1 - June 5
Spring Black Bear: January 15 - February 15

Deer, Elk, Pronghorn Seasons: August 2017 - February 2018 & August 2018 - February 2019
Black Bear, Mountain Lion Seasons: August 2017 - June 2018 & August 2018 - June 2019
Gray Wolf Seasons: July 2017 - June 2018 & July 2018 - June 2019
Including Controlled Hunts for Deer, Elk, Pronghorn and Black Bear



2017 & 2018 DEER HUNTING SEASONS

Hunters with valid Idaho licenses and tags in their possession can hunt mule deer and/or white-tailed deer.

How many deer can I harvest?

In general, the answer is one deer per hunter per year. However, a few controlled hunts and depredation hunts offer the opportunity for hunters to harvest additional deer. Deer hunters also may buy leftover nonresident deer tags at the nonresident price to harvest a second deer. A hunter may take only one deer per valid legal tag in his or her possession.

Unsold Nonresident Tags: Residents or nonresidents may buy one unsold nonresident general season deer and elk tag at the nonresident price starting August 1, to be used as a second tag.

Youth only hunt: Some deer hunts are for youth only. See page 105 for more information.

Antlered deer: Deer with at least one antler longer than 3 inches. In "antlered only" seasons, or any hunt with point restrictions, antlers must accompany the carcass while in transit.

Antlerless deer: Deer without antlers or with antlers shorter than 3 inches may be taken in a season open for antlerless deer or either sex.

Two-point deer: Deer with no more than two points on one side, not including the brow point or tine, and at least one antler longer than 3 inches (as long as a deer has no more than two points on one antler, it may have multiple points on the other antler). A point is an antler projection that is at least 1 inch long and longer than the width of the projection.

Three-point deer: Deer having at least one antler with three or more points, not including the brow point or tine.

Species identification: In seasons restricted to mule deer only or white-tailed deer only, if the head is removed, the fully-haired tail must be left naturally attached to the carcass.

Archery and Muzzleloader Permits

Any person hunting in an "archery only" season, including controlled hunts, must have their license with archery permit validation. Any person hunting in a "muzzleloader" only season, including controlled hunts, must have their license with muzzleloader permit validation.

Nonresident Deer and Elk Tags

Nonresident deer and elk tags, excluding Nonresident Junior Mentored/DAV deer and elk tags, are valid to take a black bear, mountain lion or gray wolf instead of a deer or elk, if a season is open for that species, where and when the deer or elk tag is valid, and if there is an open deer or elk season in that same unit. See page 110.

Chronic Wasting Disease

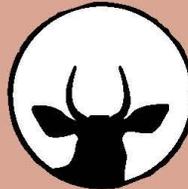
See page 31 for more information.

Attention Deer Hunters!

Deer hunters may choose either a regular deer tag or a white-tailed deer tag. The regular deer tag is valid for any hunt listed under "2017 & 2018 Regular Deer Tag Seasons" on pages 9-13 and may be used to take a mule deer or white-tailed deer during those seasons.

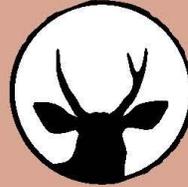
The white-tailed deer tag is valid for white-tailed deer only, for any hunt listed under "2017 & 2018 White-tailed Deer Tag Seasons" on pages 15-18.

Legal Deer in Two-Point Hunts



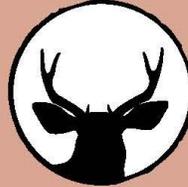
Spike Deer

Legal buck under 2-point regulations at least 1 antler is 3 inches or longer.



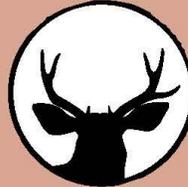
1 x 2 Point Deer

Legal buck under 2-point regulations.



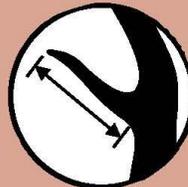
2 x 2 Point Deer

Legal buck under 2-point regulations. Not legal in 3-point or 4-point hunts.



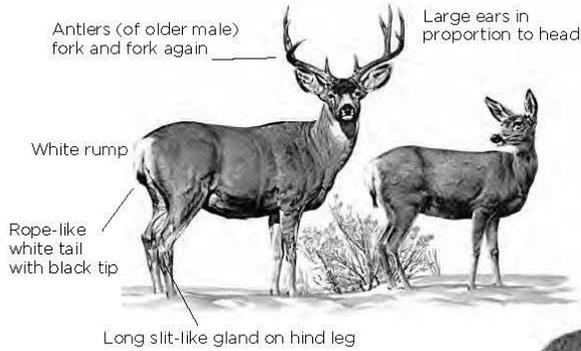
2 x 3 Point Deer

Legal buck under 2-point regulations. Also legal under 3-point regulations.



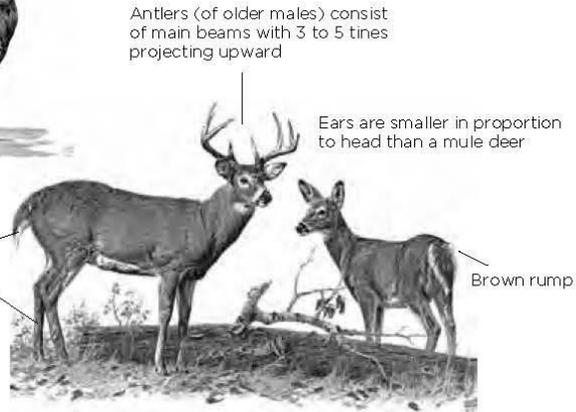
Point must be 1 inch or longer.

Characteristics of a mule deer



CAUTION!
Antlers on yearling buck white-tailed and mule deer may look similar.

Characteristics of a white-tailed deer



**Illustration by Robert Neaves courtesy of Montana Fish, Wildlife & Parks*

Definitions

- Antlered:** A deer with an antler or antlers at least 3 inches in length.
- Antlerless:** A deer without antlers or with antlers less than 3 inches in length.

2017 & 2018 Regular Deer Tag General Any Weapon Seasons			
Unit(s)	Antlered	Antlerless	Notes
1	Oct 10 - Oct 31 <i>(White-tailed deer only)</i>	Oct 10 - Dec 1 <i>(White-tailed deer only)</i>	
	Nov 1 - Dec 1		
2, 3, 4A, 5, 6	Oct 10 - Nov 9	Oct 10 - Dec 1 <i>(White-tailed deer only)</i>	<i>See note 1, Page 13</i>
	Nov 10 - Dec 1 <i>(White-tailed deer only)</i>		
4, 7, 9	Oct 10 - Nov 9	Oct 10 - Nov 9 <i>(White-tailed deer only)</i>	
8, 8A, 10, 10A, 12, 15, 16	Oct 10 - Nov 3	Oct 10 - Nov 3	
11, 11A	Oct 10 - Nov 3 <i>(White-tailed deer only)</i>	Oct 10 - Nov 3 <i>(White-tailed deer only)</i>	
13, 14, 18	Oct 10 - Nov 3 <i>(White-tailed deer only)</i>	Oct 10 - Nov 3 <i>(White-tailed deer only)</i>	<i>Very limited access, See note 1, Page 11</i>
16A, 17, 19, 20	Sep 15 - Nov 18	Sep 15 - Nov 18	

2017 & 2018 Regular Deer Tag General Any Weapon Seasons			
Unit(s)	Antlered	Antlerless	Notes
19A	Oct 10 - Oct 31	Oct 10 - Oct 31 (Youth hunt only)	
20A, 26, 27	Sep 15 - Oct 31	None	
21, 21A, 28, 29, 30, 36, 36A, 36B, 37A	Oct 10 - Oct 24	Oct 10 - Oct 31 (Youth hunt only, Private land only)	Motorized Hunting Rule Applies in Units 29, 30, 36A, & 37A, See Pages 101 - 103
22	Oct 10 - Oct 24 (2-point deer only)	Oct 10 - Oct 16 (Youth hunt only)	
23, 24, 25	Oct 10 - Oct 31	Oct 10 - Oct 31 (Youth hunt only)	See note 3, Page 11
30A	None	Oct 10 - Oct 31 (Youth hunt only, Private land only)	Motorized Hunting Rule Applies, See Pages 101 - 103
31, 32, 32A	Oct 10 - Oct 24	Oct 10 - Oct 24 (White-tailed deer only)	See notes 2 & 4, Page 11, Motorized Hunting Rule Applies in Units 32 & 32A, See Pages 101 - 103
		Oct 10 - Oct 16 (Youth hunt only)	
33, 34, 35	Oct 10 - Oct 31	Oct 10 - Oct 31 (Youth hunt only, White-tailed deer only)	
37	Oct 10 - Oct 17	Oct 10 - Oct 31 (Youth hunt only, Private land only)	Motorized Hunting Rule Applies, See Pages 101 - 103
39	Oct 10 - Oct 31	Oct 10 - Oct 24 (Youth hunt only)	
40, 41, 42	Oct 10 - Oct 24 (2-point deer only)	None	See note 2, Page 11
43	Oct 10 - Oct 31	Oct 10 - Oct 31 (Youth hunt only)	
46	Oct 10 - Oct 31	Oct 10 - Oct 31 (Youth hunt only)	See notes 2 & 4, Page 11
48, 49	Oct 10 - Oct 31	None	Motorized Hunting Rule Applies in Unit 49, See Pages 101 - 103
50, 51, 58, 59, 59A	Oct 10 - Oct 24	Oct 10 - Oct 24 (Youth hunt only)	Motorized Hunting Rule Applies, See Pages 101 - 103
52A	Oct 10 - Oct 31	Oct 10 - Oct 31 (Youth hunt only)	Motorized Hunting Rule Applies, See Pages 101 - 103
56	Oct 10 - Oct 24	None	Motorized Hunting Rule Applies, See Pages 101 - 103
60, 61, 62, 62A, 64, 65	Oct 10 - Oct 24	Oct 10 - Oct 24 (Youth hunt only)	See note 2, Page 11
60A	Oct 10 - Oct 24	Oct 10 - Oct 24 (Youth hunt only)	See note 5, Page 11

2017 & 2018 Regular Deer Tag General Any Weapon Seasons			
Unit(s)	Antlered	Antlerless	Notes
66, 69	Oct 10 - Oct 24	Oct 10 - Oct 24 (Youth hunt only)	Motorized Hunting Rule Applies, See Pages 101 - 103
67	Oct 10 - Oct 24	Oct 10 - Oct 24 (Youth hunt only)	See note 6, Page 11
66A, 68, 71, 72, 73A, 74, 75, 76, 77	Oct 10 - Oct 24	None	Motorized Hunting Rule Applies in Units 66A, 72, 75, 76 & 77, See Pages 101 - 103
70, 78	None	None	Motorized Hunting Rule Applies, See Pages 101 - 103
73	None	None	Motorized Hunting Rule Applies, See Pages 101 - 103

Notes:

1. Unit 13 has very limited access because of few roads and private property.
2. Short range weapons **only** on C.J. Strike, Chester Wetlands, Montour Wildlife Management Areas, and Pahsimeroi Access Area.
3. Short range weapons **only** in that portion of Unit 24 within the following boundary: Beginning in McCall at the junction of State Highway 55 and Boydston Street, then south on Boydston Street to West Valley Road, then west and south along West Valley Road and West Mountain Road to Cabarton Road, then north on Cabarton Road to State Highway 55, then north on State Highway 55 to Farm-To-Market Road, then north on Farm-To-Market Road to Elo Road, then west on Elo Road to State Highway 55, then north on State Highway 55 to the point of beginning.
4. Short range weapons **only** on the islands in the Snake River.
5. Short range weapons **only** in that portion of Unit 60A south and east of the North (Henrys) Fork Snake River, and that portion within 1 mile north and west of the North Fork Snake River.
6. Short range weapons **only** in that portion of Unit 67 south and west of State Highway 26.

HUNTING PASSPORT

There is simply no better way to introduce a new hunter to the safe, ethical and responsible aspects of hunting than with the close supervision of an adult mentor.

Idaho's Hunting Passport is a component of Fish and Game's mentored hunting program. The Hunting Passport allows any first-time hunter, resident or nonresident, age 8 and older to try hunting with an adult mentor without first having to complete an Idaho hunter education course.

- Hunting Passports are only available to first time hunters. Those that have previously held a hunting license in any state are not eligible.
- Hunter Education certification is not needed to obtain a Hunting Passport. If an individual has completed a Hunter Education course but has not yet purchased a license, they are eligible for a Hunting Passport.
- The minimum age to hold a Hunting Passport is eight years of age; there is no maximum age.
- Must be 10 years of age to hunt big game, turkey and sandhill crane; 8 years of age to hunt other game birds, upland game animals, furbearers, predatory or unprotected species.
- The Hunting Passport is a calendar year item just like a hunting license and expires on December 31 of the year in which it was obtained.
- Only one Passport can be purchased in a lifetime—except an 8 year old may obtain a second passport when they turn 9 years old. To continue hunting after the Passport expires, completion of a hunter education course and license purchase is required.
- Available at license vendors, online and Fish and Game regional offices.
- Cost is \$17.5.





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2017 & 2018 Regular Deer Tag General Archery Only Seasons - Archery Permit Required			
Unit(s)	Antlered	Antlerless	Notes
1, 3, 4, 4A, 5, 6, 7, 9	Aug 30 - Sep 30	Aug 30 - Sep 30 <i>(White-tailed deer only)</i>	
	Dec 10 - Dec 24	Dec 10 - Dec 24 <i>(White-tailed deer only)</i>	
2	Aug 30 - Sep 30	Aug 30 - Sep 30 <i>(White-tailed deer only)</i>	<i>See note 1, Page 13</i>
	Nov 1 - Dec 1	Nov 1 - Dec 1 <i>(White-tailed deer only)</i>	<i>See note 2, Page 13</i>
	Dec 10 - Dec 24	Dec 10 - Dec 24 <i>(White-tailed deer only)</i>	<i>See note 1, Page 13</i>
8, 8A, 10, 10A, 11A, 12, 15, 19A, 21, 21A	Aug 30 - Sep 30	Aug 30 - Sep 30	
22	Aug 30 - Sep 30 <i>(2-point deer only)</i>	Aug 30 - Sep 30	
23, 24, 25, 36, 36B	Aug 30 - Sep 30	Aug 30 - Sep 30	
28	Dec 1 - Dec 31	Dec 1 - Dec 31	
29, 30, 30A, 32, 32A, 36A, 37, 37A	Aug 30 - Sep 30	Aug 30 - Sep 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
31, 33, 34, 35	Aug 30 - Sep 30	Aug 30 - Sep 30	
38	Aug 30 - Sep 30	Aug 30 - Sep 30	<i>See note 3, Page 13</i>
39	Nov 10 - Nov 30	Nov 10 - Nov 30	<i>See notes 4 & 5, Page 13, Portion of Unit closed</i>
40, 41, 42	Aug 30 - Sep 30 <i>(2-point deer only)</i>	Aug 30 - Sep 30	
43, 46, 52A	Aug 30 - Sep 30	Aug 30 - Sep 30	<i>Motorized Hunting Rule Applies in Unit 52A, See Pages 101 -103</i>
47, 48, 49, 50, 51, 56, 57, 58, 59, 59A	Aug 30 - Sep 30	Aug 30 - Sep 30	<i>Motorized Hunting Rule Applies in Units 47, 49, 50, 51, 56, 58, 59 and 59A, See Pages 101 - 103</i>
55	Nov 16 - Dec 10	Nov 16 - Dec 10	
60, 61, 62A	Aug 30 - Sep 30	Aug 30 - Sep 30	
60A, 62, 64, 65, 66, 67, 69	Aug 30 - Sep 30	Aug 30 - Sep 30	<i>Motorized Hunting Rule Applies in Units 66 & 69, See Pages 101 - 103</i>
	Nov 20 - Dec 19 <i>(White-tailed deer only)</i>	Nov 20 - Dec 19 <i>(White-tailed deer only)</i>	
63	Aug 30 - Sep 30	Aug 30 - Sep 30	
	Nov 1 - Dec 19	Nov 1 - Dec 19	
66A, 68, 71, 72, 73, 73A, 74, 75, 76, 77, 78	Aug 30 - Sep 30	Aug 30 - Sep 30	<i>Motorized Hunting Rule Applies in Units 66A, 72, 73, 75, 76, 77 & 78, See Pages 101 - 103</i>

2017 & 2018 Regular Deer Tag General Muzzleloader Only Seasons - Muzzleloader Permit Required			
Unit(s)	Antlered	Antlerless	Notes
4, 7, 9	Nov 10 - Dec 1	Nov 10 - Dec 1 <i>(White-tailed deer only)</i>	
39	None	Sep 8 - Sep 30	

2017 & 2018 Regular Deer Tag General Deer Short Range Weapon Seasons			
Unit(s)	Antlered	Antlerless	Notes
38	Oct 10 - Oct 31	Oct 10 - Nov 24	<i>Very limited access, See note 3, Page 13</i>
53	Oct 10 - Oct 31	Oct 10 - Oct 31	<i>See note 6, Page 13, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
63	Oct 10 - Oct 24	Oct 10 - Oct 24 <i>(Youth hunt only)</i>	

Notes:

1. Farragut State Park and Farragut Wildlife Management Area are **closed**.
2. Farragut State Park and Farragut Wildlife Management Area **only**.
3. That portion of Unit 38 within the Lake Lowell Sector of the Deer Flat National Wildlife Refuge is **controlled hunt only**.
4. **Archers caution:** An “any weapon” antlered elk hunt will be open at the same time in this unit.
5. **Area Closure:** That portion of Unit 39 within Ada County, and that portion of Unit 39 within the following boundary: Beginning at the intersection of State Highway 21 and the Middle Fork Boise River Road (Forest Road 268), east on Forest Road 268 to Cottonwood Creek-Thorn Creek Road (Forest Road 377), to South Fork of Thorn Creek to confluence of Thorn Creek, north and west on Thorn Creek to the confluence with Mores Creek, south and west along the center of Mores Creek including in the Mores Creek arm of Lucky Peak Reservoir to Highway 21 to the point of beginning is **closed**.
6. That portion of Unit 53 west of U.S. Highway 93 and that portion of Unit 45 south of Interstate 84. Due to routing changes made to U.S. Highway 93, the eastern boundary for Unit 53 short range weapons hunt is: Beginning at the junction of U.S. Highway 93 and U.S. Highway 30 (east of Filer), north along Hwy 93 turning east at the junction of Poleline Road, continuing east to Blue Lakes Blvd, then north across the Perrine Bridge following U.S. Highway 93 to U.S. Highway 26 in Shoshone. **The rest of Units 45 and 53 are controlled hunts only.**

REPORT WILDLIFE CRIME

POACHING IS STEALING



Idaho is a member of the Wildlife Violator Compact, which means that if an individual's hunting, fishing or trapping license is revoked by any of the 44 member states; all the remaining states will revoke the same license or privilege for the same time period.

Anyone with information about a wildlife violation are encouraged to “Make the Call” and contact the Citizens Against Poaching (CAP) hotline at **1-800-632-5999**. Callers may remain anonymous, and they may be eligible for a reward.

DEER CONTROLLED HUNTS



For details on controlled hunt rules and restrictions please see pages 106 - 110.
Hunters: Please check Deer Controlled Hunt Area descriptions on pages 28 - 30. Hunt Areas may change.

2017 & 2018 Controlled Deer Hunts (15,673 Tags Plus Unlimited Tags) Antlered Deer				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1001	1-1 ^a (See pg 28)	60	Aug 30 - Dec 1	
1002	11	74	Oct 10 - Nov 3	<i>Mule deer only</i>
1003	11	35	Nov 10 - Nov 24	<i>Mule deer only</i>
1004	11A	50	Oct 10 - Nov 3	<i>Mule deer only, Very limited access</i>
1005	11A	25	Nov 10 - Nov 30	<i>Mule deer only, Very limited access</i>
1006	13	200	Oct 10 - Nov 3	<i>Mule deer only, Very limited access, See note 1, Page 25</i>
1007	14	180	Oct 10 - Nov 20	<i>Mule deer only</i>
1008	18	95	Oct 17 - Nov 9	<i>Mule deer only</i>
1009	18	25	Nov 10 - Nov 30	<i>Mule deer only</i>
1010	19A	10	Oct 10 - Nov 24	
1011	20A	Unlimited	Nov 1 - Nov 18	<i>Nonresident tags may be limited, See Page 108</i>
1012	21	5	Oct 10 - Nov 30	
1013	22	60	Nov 1 - Nov 24	
1014	23	25	Oct 10 - Nov 24	
1015	25	10	Oct 10 - Nov 24	
1016	26	Unlimited	Nov 1 - Nov 18	<i>Nonresident tags may be limited, See Page 108</i>
1017	27	Unlimited 1 st choice only	Nov 1 - Nov 18	<i>1st choice only Unlimited Controlled Hunt, See Page 108, Nonresident tags may be limited, See Page 108</i>
1018	28	5	Oct 10 - Nov 30	
1019	30	5	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1020	30A	30	Oct 10 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1021	31	30	Oct 10 - Nov 24	
1022	32	40	Oct 10 - Nov 24	<i>See note 2, Page 25, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1023	32A	30	Oct 10 - Nov 24	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1024	36	5	Oct 10 - Nov 30	
1025	36A	5	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1026	36B	5	Oct 10 - Nov 30	
1027	38-1 ^b (See pg 29)	5	Oct 10 - Nov 24	<i>Deer Flat National Wildlife Refuge has specific hunting requirements, Before applying, See note 3, Page 25</i>
1028	39	199	Aug 15 - Sep 30	
1029	40	195	Nov 1 - Nov 24	
1030	41	100	Nov 1 - Nov 24	<i>See note 2, Page 25</i>

CONTROLLED
DEER

^a This hunt includes other units or parts of other units. See controlled hunt area descriptions.

^b This hunt includes only a portion of this unit. See controlled hunt area descriptions.

For details on controlled hunt rules and restrictions please see pages 106 - 110.

CONTROLLED DEER

2017 & 2018 Controlled Deer Hunts Antlered Deer				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1031	42	74	Nov 1 - Nov 24	
1032	44	225	Sep 15 - Oct 31	
1033	45	75	Oct 15 - Oct 31	<i>See note 2, Page 25, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1034	47	90	Oct 5 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1035	47-1 ^a (See pg 29)	10	Nov 15 - Nov 30	<i>See notes 2 & 4, Page 25, Motorized Hunting Rule Applies in Unit 47, See Pages 101 - 103</i>
1036	48	10	Nov 10 - Nov 24	
1037	49	10	Nov 10 - Nov 24	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1038	50-1 ^b (See pg 29)	10	Oct 10 - Nov 30	<i>Portion of Unit only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1039	52	75	Oct 5 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1040	54	500	Oct 5 - Oct 31	
1041	54	20	Nov 15 - Nov 30	
1042	55 (See pg 29)	25	Aug 15 - Sep 24	
1043	55 (See pg 29)	375	Oct 5 - Oct 31	
1044	57	90	Oct 5 - Oct 31	
1045	57	10	Nov 15 - Nov 30	
1046	58-1 ^a (See pg 30)	10	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1047	60-1 ^a (See pg 30)	40	Oct 10 - Nov 30	<i>See note 2, Page 25</i>
1048	62	15	Oct 10 - Nov 30	
1049	66	20	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1050	66A	5	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1051	67	40	Oct 10 - Nov 30	<i>See note 5, See Page 25</i>
1052	69	20	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1053	70	5	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1054	70	170	Aug 30 - Sep 30	<i>Archery only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
			Oct 10 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1055	73	Unlimited 1 st choice only	Oct 10 - Oct 16	<i>1st choice only Unlimited Controlled Hunt, See Page 108, Nonresident tags may be limited, See Page 108, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1056	73	5	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1057	78	200	Aug 30 - Sep 30	<i>Archery only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
			Oct 10 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>

^a This hunt includes other units or parts of other units. See controlled hunt area descriptions.

^b This hunt includes only a portion of this unit. See controlled hunt area descriptions.

For details on controlled hunt rules and restrictions please see pages 106 - 110.

2017 & 2018 Controlled Hunts Antlerless Deer				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1058	13	50	Oct 10 - Nov 3	<i>Very limited access, See note 1, Page 25</i>
1059	18	50	Oct 17 - Nov 9	
1060	28-1 ^b (See pg 28)	60	Sep 15 - Oct 15	<i>Portion of Unit only, See Hunt Planner or contact Salmon Regional Office for map of hunt area</i>
1061	36B-1 ^b (See pg 29)	60	Sep 15 - Oct 15	<i>Portion of Unit only, Outside National Forest Boundary, See Hunt Planner or contact Salmon Regional Office for map of hunt area</i>
1062	43	150	Oct 10 - Oct 31	
1063	44	150	Oct 10 - Nov 9	
1064	45	250	Nov 1 - Nov 14	<i>See note 2, Page 25, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1065	45	300	Nov 15 - Nov 30	<i>See note 2, Page 25, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1066	54	100	Nov 1 - Nov 14	
1067	55 (See pg 29)	100	Nov 1 - Nov 14	
1068	60-1 ^a (See pg 30)	100	Oct 25 - Nov 15	<i>See note 2, Page 25</i>
1069	73-1 ^a (See pg 30)	50	Oct 1 - Oct 31	<i>Franklin County only, Private land only, Very limited access, Motorized Hunting Rule Applies, See Pages 101 - 103</i>

**CONTROLLED
DEER**

2017 & 2018 Controlled Hunts Either Sex Deer				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1070	39	500	Oct 10 - Oct 31	
1071	60-2 ^a (See pg 30)	250	Oct 5 - Nov 8	<i>See note 2, Page 25</i>
1072	62	50	Oct 5 - Nov 8	
1073	63A	50	Oct 5 - Nov 15	<i>Mule deer only, Short range weapons only</i>
1074	66	75	Oct 5 - Nov 8	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1075	67	75	Oct 5 - Nov 8	<i>See note 5, Page 25</i>
1076	69	125	Oct 5 - Nov 8	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1077	73	40	Oct 17 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>

2017 & 2018 Controlled Hunts Archery Only Deer - Archery Permit Required				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1078	21-1 ^a (See pg 28)	10	Aug 15 - Aug 29	<i>Antlered only</i>
1079	22	25	Aug 15 - Sep 30	<i>Either sex</i>

^a This hunt includes other units or parts of other units. See controlled hunt area descriptions.

^b This hunt includes only a portion of this unit. See controlled hunt area descriptions.

For details on controlled hunt rules and restrictions please see pages 106 - 110.

2017 & 2018 Controlled Hunts Archery Only Deer - Archery Permit Required				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1080	39-1 ^b (See pg 29)	50	Nov 16 - Dec 16	<i>Either sex, See note 6, Page 25, Roads on Boise River WMA closed to motorized travel</i>
1081	40	50	Aug 15 - Sep 30	<i>Antlered only</i>
1082	41-1 ^a (See pg 29)	25	Aug 15 - Sep 30	<i>Antlered only</i>
1083	44	10	Aug 15 - Sep 14	<i>Antlered only</i>
1084	45	10	Aug 15 - Sep 14	<i>Antlered only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1085	53-1 ^b (See pg 29)	Unlimited	Aug 30 - Dec 19	<i>Either Sex, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1086	54	Unlimited	Aug 30 - Sep 30	<i>Either Sex</i>
1087	68A	Unlimited	Aug 30 - Dec 19	<i>Either sex</i>
1088	70	Unlimited	Aug 30 - Sep 30	<i>Either sex, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
			Oct 1 - Oct 9	<i>Antler-less only Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1089	72-1 ^a (See pg 30)	Unlimited 1 st choice only	Nov 16 - Dec 5	<i>Antlered only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>

2017 & 2018 Controlled Hunts Muzzleloader Only Deer - Muzzleloader Permit Required				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1090	8A	25	Oct 10 - Dec 14	<i>Either sex, White-tailed deer only</i>
1091	10A	25	Oct 10 - Dec 14	<i>Either sex, White-tailed deer only</i>
1092	21A	5	Nov 1 - Nov 30	<i>Antlered only</i>
1093	22	15	Oct 1 - Oct 9	<i>Antlered only</i>
1094	29-1 ^a (See pg 28)	63	Nov 25 - Dec 9	<i>Antlered only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1095	30A	5	Nov 1 - Nov 30	<i>Antlered only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1096	33-1 ^a (See pg 29)	149	Nov 10 - Nov 30	<i>Antlered only</i>
1097	43	125	Oct 1 - Oct 9	<i>Either sex</i>
1098	45	40	Oct 1 - Oct 14	<i>Antlered only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1099	51-1 ^a (See pg 29)	100	Nov 1 - Nov 30	<i>Either sex, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1100	52	25	Nov 1 - Nov 14	<i>Antlered only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1101	52A (See pg 29)	75	Nov 10 - Nov 24	<i>Either sex, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1102	57	25	Nov 1 - Nov 14	<i>Antlered only</i>

^a This hunt includes other units or parts of other units. See controlled hunt area descriptions.

^b This hunt includes only a portion of this unit. See controlled hunt area descriptions.

For details on controlled hunt rules and restrictions please see pages 106 - 110.

2017 & 2018 Controlled Hunts Muzzleloader Only Deer - Muzzleloader Permit Required				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1103	61	Unlimited	Nov 11 - Dec 9	Either sex
1104	64-1 ^a (See pg 30)	100	Oct 25 - Nov 30	Either sex
1105	73A	40	Nov 16 - Nov 30	Either sex

2017 & 2018 Controlled Hunts Youth Only Deer				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1106	11A	25	Oct 10 - Dec 31	Either sex
1107	28-1 ^b (See pg 28)	15	Sep 15 - Oct 31	Either sex, Portion of Unit only, See Hunt Planner or contact Salmon Regional Office for map of hunt area
1108	32-1 ^a (See pg 28)	25	Oct 1 - Oct 24	Either sex
			Oct 25 - Nov 10	Antlerless only
1109	36B-1 ^b (See pg 29)	15	Sep 15 - Oct 31	Either Sex, Portion of Unit only, Outside National Forest Boundary, See Hunt Planner or contact Salmon Regional Office for map of hunt area
1110	44	150	Oct 10 - Nov 9	Antlerless only
1111	45-1 ^a (See pg 29)	250	Nov 15 - Nov 30	Antlerless only, See note 2, Page 25, Motorized Hunting Rule Applies, See Pages 101 - 103
1112	47	50	Oct 5 - Oct 31	Antlered only, Motorized Hunting Rule Applies, See Pages 101 - 103
1113	47	20	Oct 5 - Oct 31	Antlerless only, Motorized Hunting Rule Applies, See Pages 101 - 103
1114	54	100	Oct 5 - Oct 31	Antlered only
1115	54	130	Oct 5 - Oct 31	Antlerless only
1116	55-1 ^a (See pg 29)	50	Oct 5 - Oct 31	Antlered only
1117	55-1 ^a (See pg 29)	50	Oct 5 - Oct 31	Antlerless only

**CONTROLLED
DEER**

2017 & 2018 Controlled Hunts Youth Only - Extra Antlerless Deer				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1118	8-1X ^a (See pg 28)	200	Oct 10 - Dec 1	Private land only
1119	21-1X ^a (See pg 28)	75	Aug 30 - Dec 31	Short range weapons only, Private land only, Very limited access
1120	36A-1X ^a (See pg 29)	60	Aug 30 - Dec 31	Short range weapons only, Private land only, Very limited access
1121	39-1X ^b (See pg 29)	100	Dec 1 - Dec 22	
1122	40-1X ^a (See pg 29)	100	Oct 10 - Nov 24	Portion of Units 40 & 41 only, Very limited access

^a This hunt includes other units or parts of other units. See controlled hunt area descriptions.

^b This hunt includes only a portion of this unit. See controlled hunt area descriptions.

For details on controlled hunt rules and restrictions please see pages 106 - 110.

2017 & 2018 Controlled Hunts Extra Antlerless Deer				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1123	1-1X ^b (See pg 28)	900	Aug 30 - Sep 30	<i>Archery only, White-tailed deer only</i>
			Oct 10 - Dec 1	<i>White-tailed deer only</i>
			Dec 10 - Dec 24	<i>Archery only, White-tailed deer only</i>
1124	2-1X ^b (See pg 28)	300	Aug 30 - Sep 30	<i>Archery only, White-tailed deer only</i>
			Oct 10 - Dec 1	<i>White-tailed deer only</i>
			Dec 10 - Dec 24	<i>Archery only, White-tailed deer only</i>
1125	3-1X ^b (See pg 28)	300	Aug 30 - Sep 30	<i>Archery only, White-tailed deer only</i>
			Oct 10 - Dec 1	<i>White-tailed deer only</i>
			Dec 10 - Dec 24	<i>Archery only, White-tailed deer only</i>
1126	5-1X ^b (See pg 28)	100	Aug 30 - Sep 30	<i>Archery only, White-tailed deer only</i>
			Oct 10 - Dec 1	<i>White-tailed deer only</i>
			Dec 10 - Dec 24	<i>Archery only, White-tailed deer only</i>
1127	8X	700	Aug 30 - Sep 30	<i>Archery only, White-tailed deer only</i>
			Oct 10 - Dec 14	<i>White-tailed deer only</i>
1128	8A-1X ^b (See pg 28)	700	Aug 30 - Sep 30	<i>Archery only, White-tailed deer only</i>
			Oct 10 - Dec 1	<i>White-tailed deer only</i>
			Dec 2 - Dec 14	<i>Muzzleloader only, White-tailed deer only</i>
1129	10A-1X ^b (See pg 28)	800	Aug 30 - Sep 30	<i>Archery only, White-tailed deer only</i>
			Oct 10 - Dec 1	<i>White-tailed deer only</i>
			Dec 2 - Dec 14	<i>Muzzleloader only, White-tailed deer only</i>
1130	11-1X ^b (See pg 28)	100	Oct 10 - Dec 1	<i>Mule Deer or White-tailed Deer</i>
1131	11AX	800	Aug 30 - Sep 30	<i>Archery only</i>
			Oct 10 - Dec 14	<i>Mule Deer or White-tailed Deer</i>
1132	15-1X ^b (See pg 28)	100	Aug 30 - Sep 30	<i>Archery only, White-tailed deer only</i>
			Oct 10 - Nov 20	<i>White-tailed deer only</i>
			Dec 5 - Dec 20	<i>Archery only, White-tailed deer only</i>
1133	16-1X ^b (See pg 28)	300	Oct 10 - Nov 20	<i>White-tailed deer only</i>
			Nov 21 - Dec 9	<i>Muzzleloader only, White-tailed deer only</i>
1134	21-1X ^a (See pg 28)	250	Aug 30 - Dec 31	<i>Short range weapons only, Private land only, Very limited access</i>
1135	32-1X ^b (See pg 28)	100	Aug 1 - Sep 30	<i>Short range weapons only, Very limited access, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
			Oct 1 - Dec 31	<i>Very limited access, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1136	32-2X ^b (See pg 28)	75	Aug 1 - Dec 31	<i>Short range weapons only, Very limited access</i>
1137	36A-1X ^a (See pg 29)	250	Aug 30 - Dec 31	<i>Short range weapons only, Private land only, Very limited access</i>
1138	38-1X ^b (See pg 29)	10	Oct 10 - Oct 29	<i>Deer Flat National Wildlife Refuge has specific hunting requirements, Before applying, See note 3, Page 25</i>

CONTROLLED DEER

^a This hunt includes other units or parts of other units. See controlled hunt area descriptions.

^b This hunt includes only a portion of this unit. See controlled hunt area descriptions.

For details on controlled hunt rules and restrictions please see pages 106 - 110.

2017 & 2018 Controlled Hunts Extra Antlerless Deer				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1139	38-1X ^b (See pg 29)	10	Oct 30 - Nov 18	Deer Flat National Wildlife Refuge has specific hunting requirements, Before applying , See note 3, Page 25
1140	38-1X ^b (See pg 29)	10	Nov 19 - Dec 8	Deer Flat National Wildlife Refuge has specific hunting requirements, Before applying , See note 3, Page 25
1141	38-1X ^b (See pg 29)	10	Dec 9 - Dec 28	Deer Flat National Wildlife Refuge has specific hunting requirements, Before applying , See note 3, Page 25
1142	50-1X ^b (See pg 29)	200	Aug 30 - Sep 30	Archery only, Private land only
			Oct 1 - Nov 15	Private land only
1143	60-1X ^a (See pg 30)	300	Aug 30 - Sep 30	Archery only, White-tailed deer only
			Oct 10 - Oct 31	White-tailed deer only, See note 2, Page 25
			Nov 20 - Dec 19	White-tailed deer only, See note 2, Page 25
1144	60A-1X ^a (See pg 30)	300	Aug 30 - Sep 30	Archery only, White-tailed deer only, Motorized Hunting Rule Applies in Units 66 & 69, See Pages 101 - 103
			Oct 10 - Oct 31	White-tailed deer only, See notes 2, 5 & 7, Page 25, Motorized Hunting Rule Applies in Units 66 & 69, See Pages 101 - 103
			Nov 20 - Dec 19	Archery only, White-tailed deer only, Motorized Hunting Rule Applies in Units 66 & 69, See Pages 101 - 103
1145	63AX	200	Aug 30 - Sep 30	Archery only, White-tailed deer only
			Oct 10 - Oct 20	Short range weapons only, White-tailed deer only
			Nov 1 - Dec 19	Archery only, White-tailed deer only
1146	68AX	50	Aug 30 - Oct 31	Archery only, Very limited access
1147	73-1X ^b (See pg 30)	50	Aug 15 - Nov 15	Short range weapons only, Private land only, Very limited access, Motorized Hunting Rule Applies, See Pages 101 - 103
1148	78-1X ^b (See pg 30)	75	Aug 30 - Oct 31	Private land only

**CONTROLLED
DEER**

Notes:

1. This hunt has very limited access because of few roads and private property.
2. Short range weapons **only** on CJ Strike, Chester Wetlands, and Montour Wildlife Management Areas, and all of Units 63 and 63A.
3. Short range weapons **only**. Portion of Unit 38 within the Deer Flat National Wildlife Refuge (DFNWR) **only**. **Before applying** for this hunt please review the special regulations at http://www.fws.gov/refuge/deer_flat/ or contact DFNWR at (208) 467-9278, 13751 Upper Embankment Rd, Nampa, ID 83686.
4. Short range weapons **only** on the islands in the Snake River.
5. Short range weapons **only** in that portion of Unit 67 south and west of State Highway 26.
6. Mandatory class required - Anyone drawing a deer controlled archery only hunt tag for this hunt must satisfactorily complete a mandatory hunter education course. The course will be administered by the Southwest Region and will include the hunt boundaries and legal restrictions, and will emphasize proper hunter ethics. Bowhunter education required.
7. Short range weapons **only** in that portion of Unit 60A south and east of the North (Henrys) Fork Snake River, and that portion within 1 mile north and west of the North Fork Snake River.

^a This hunt includes other units or parts of other units. See controlled hunt area descriptions.

^b This hunt includes only a portion of this unit. See controlled hunt area descriptions.

For details on controlled hunt rules and restrictions please see pages 106 - 110.

**CONTROLLED
DEER**

2017 & 2018 Controlled Hunts Outfitter Allocation Deer - Antlered Deer Only				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1149	1-1 ^a (See pg 28)	1	Aug 30 - Dec 1	
1150	11	1	Oct 10 - Nov 3	<i>Mule deer only</i>
1151	11A	2	Oct 10 - Nov 3	<i>Mule deer only</i>
1152	13	37	Oct 10 - Nov 3	<i>Mule deer only</i>
1153	14	22	Oct 10 - Nov 20	<i>Mule deer only</i>
1154	18	7	Oct 17 - Nov 9	<i>Mule deer only</i>
1155	18	2	Nov 10 - Nov 30	<i>Mule deer only</i>
1156	21	1	Oct 10 - Nov 30	
1157	21-1 ^a (See pg 28)	1	Aug 15 - Aug 29	<i>Archery only</i>
1158	21A	1	Nov 1 - Nov 30	<i>Muzzleloader only</i>
1159	22	6	Nov 1 - Nov 24	
1160	28	1	Oct 10 - Nov 30	
1161	29-1 ^a (See pg 28)	2	Nov 25 - Dec 9	<i>Muzzleloader only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1162	33-1 ^a (See pg 29)	1	Nov 10 - Nov 30	<i>Muzzleloader only</i>
1163	36	1	Oct 10 - Nov 30	
1164	36A	1	Oct 10 - Nov 30	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1165	36B	1	Oct 10 - Nov 30	
1166	39	1	Aug 15 - Sep 30	
1167	40	5	Nov 1 - Nov 24	
1168	42	1	Nov 1 - Nov 24	
1169	44	1	Sep 15 - Oct 31	
1170	45	1	Aug 15 - Sep 14	<i>Archery only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1171	45	2	Oct 15 - Oct 31	<i>See note 2, page 25, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1172	47	3	Oct 5 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1173	50-1 ^b (See pg 29)	1	Oct 10 - Nov 30	<i>Portion of Unit only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1174	52	1	Nov 1 - Nov 14	<i>Muzzleloader only Motorized Hunting Rule Applies, See Pages 101 -103</i>
1175	54	5	Oct 5 - Oct 31	
1176	54	1	Nov 15 - Nov 30	
1177	55 (See pg 30)	2	Oct 5 - Oct 31	
1178	55-1 ^a (See pg 30)	1	Oct 5 - Oct 31	<i>Youth hunt only, Either sex</i>
1179	57	2	Oct 5 - Oct 31	
1180	57	1	Nov 1 - Nov 14	<i>Muzzleloader only</i>

^a This hunt includes other units or parts of other units. See controlled hunt area descriptions.

^b This hunt includes only a portion of this unit. See controlled hunt area descriptions.

For details on controlled hunt rules and restrictions please see pages 106 - 110.

2017 & 2018 Controlled Hunts Outfitter Allocation Deer - Antlered Deer Only				
Hunt No.	Controlled Hunt Areas	Tags	Season Dates	Notes
1181	70	1	Aug 30 - Sep 30	<i>Archery only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
			Oct 10 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>
1182	78	7	Aug 30 - Sep 30	<i>Archery only, Motorized Hunting Rule Applies, See Pages 101 - 103</i>
			Oct 10 - Oct 31	<i>Motorized Hunting Rule Applies, See Pages 101 - 103</i>

Outfitted Allocation controlled hunts:

Before submitting an application for an outfitter-allocated controlled hunt, hunters must have a written agreement with an outfitter licensed in the hunt area. Successful applicants must hunt with an outfitter licensed for the hunt area. The outfitter must purchase the hunter's tag by August 20. Successful applicants authorize Idaho Fish and Game to provide names and addresses to the outfitters licensed for that controlled hunt. For a list of licensed outfitters in the applicable controlled hunt area, a sample written agreement, and additional information contact the Idaho Outfitters and Guides Licensing Board at: oglb.idaho.gov or by calling 208-327-7380.

**CONTROLLED
DEER**

WHEN NOXIOUS WEEDS MOVE IN, BIG GAME MOVES OUT!



Noxious weeds replace native plants and destroy elk, deer, and other big game habitat. Most noxious weeds are not suitable for big game forage. Big game will leave areas infested by noxious weeds in search of better habitat.

HERE'S HOW YOU CAN HELP:
Clean weeds and weed seeds off of your hunting gear and ATVs. This helps prevent their spread.

Pulling  Together
Against Invasive Weeds

1-844-WEEDSNO OR
WWW.IDAHOWEEDAWARENESS.COM

Idaho's Mule Deer Initiative



Photo Courtesy John Stolzman

Mule Deer numbers across much of their range in Idaho have increased recently following multiple mild winters and good habitat conditions, but there's still work to do. The Mule Deer Initiative (MDI) continues to work with private landowners and land management agencies to:

- **Protect and improve habitat**
- **Improve mule deer numbers**
- **Provide a variety of hunting opportunities**



Photo Courtesy Randy Martinez



Getting things done for mule deer requires partnerships.

We're currently working with:

- The **Bureau of Land Management** to restore critical winter range in the Soda Hills and other areas across southern Idaho.
- The **Caribou-Targhee and Salmon-Challis National Forests** to improve and expand aspen stands which are critical during fawning.
- The **Sawtooth National Forest** to provide increased infrastructure to reduce motorized travel impacts on critical big game habitat.
- The **Idaho Transportation Department** to develop strategies to reduce deer-vehicle collisions.
- The **Farm Service Agency, Natural Resources Conservation Service, and hundreds of land owners** to improve thousands of private land acres for mule deer and other wildlife across southeast Idaho.



If you're interested in improving your property for mule deer, contact your regional Fish and Game office and ask them to put you in touch with MDI staff.



Photo Courtesy Bill London

fishandgame.idaho.gov/content/mdi

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