

# IDAHO



## MULE DEER MANAGEMENT PLAN

2008-2017

600 South Walnut  
P O Box 25  
Boise, ID 83707

March 2008



*Idaho Fish and Game adheres to all applicable state and federal laws and regulations related to discrimination on the basis of race, color, national origin, age, gender, disability or veteran's status. If you feel you have been discriminated against in any program, activity, or facility of Idaho Fish and Game, or if you desire further information, please write to: Idaho Department of Fish and Game, P.O. Box 25, Boise, ID 83707 OR U.S. Fish and Wildlife Service, Division of Federal Assistance, Mailstop: MBSP-4020, 4401 N. Fairfax Drive, Arlington, VA 22203, Telephone: (703) 358-2156. This publication will be made available in alternative formats upon request. Please contact the Department of Fish and Game for assistance.*

*rcb 4/2008/ 50/41918*

# Table of Contents

	Page
EXECUTIVE SUMMARY .....	iv
INTRODUCTION .....	1
Purpose .....	1
Public Involvement in Plan Development .....	1
RELEVANT PLANNING DOCUMENTS .....	2
RESULTS FROM THE PREVIOUS PLANNING PERIOD .....	2
MULE DEER MANAGEMENT ISSUES .....	4
Hunting Opportunities and Experiences .....	4
Annual Opportunity .....	4
Buck Management .....	4
Youth, Seniors and Hunters with Disabilities .....	5
Hunter Access .....	5
Motorized Vehicle Use .....	5
Hunter Density .....	6
Hunter Retention, Recruitment and Support .....	6
Predator Management .....	7
Mule Deer, White-tailed Deer and Elk Interaction .....	8
Antlerless Harvest .....	9
Winter Feeding .....	9
Mule Deer Habitat .....	11
Invasive Species .....	11
Ecological Succession .....	11
Human Development .....	12
Wildfire .....	12
Population Monitoring .....	15
Habitat Monitoring .....	15
Agriculture and Livestock .....	16
The Mule Deer Initiative .....	17
Biological Investigations .....	17
Depredation .....	18
Illegal Harvest and Commercialization .....	18
Interagency Coordination .....	18
Public Understanding of Mule Deer Management .....	19
Citizen Involvement/Outreach .....	19
STATEWIDE MULE DEER MANAGEMENT DIRECTION .....	20
MULE DEER POPULATION MANAGEMENT UNITS .....	31
FINANCIAL PLAN .....	31
LITERATURE CITED .....	33
APPENDICES .....	38

## LIST OF TABLES

	Page
Table 1.	Summary of accomplishments from the 1999-2007 planning period..... 3
Table 2.	Characteristics of hunting opportunity types in Idaho..... 6
Table 3.	Guidelines for determining whether predator management activities will result in increased mule deer numbers (adapted from Ballard et al. 2003). ..... 8
Table 4.	Biological parameters and typical characteristics of a mule deer population approaching, or at, carrying capacity.....10
Table 5.	Adult female (>1 year) harvest rates (%) that will maintain population stability for mule deer populations below carrying capacity.....10
Table 6.	Department strategic plan objectives and corresponding mule deer management direction.0
Table 7.	Compass objective, statewide mule deer management direction, performance targets, and strategies.....21

## LIST OF FIGURES

Figure 1.	Percent change in human population by census block, Idaho, 2000-2004. .... 13
Figure 2.	Projected housing unit density, Idaho, 2030. .... 14
Figure 3.	Mule deer population management units. .... 32

## LIST OF APPENDICES

Appendix A.	2006 Idaho Mule Deer Hunter Opinion Survey ..... 38
Appendix B.	Population Management Unit Tables ..... 40

# **MULE DEER**



# Idaho Mule Deer Management Plan 2008 – 2017

## Executive Summary

### Introduction

Mule deer represent a true icon of the West, providing recreational, aesthetic, social, cultural, and scientific values for Idaho citizens. Mule deer hunting is a significant cultural and social bond for nearly 150,000 Idaho friends and families, and is a primary activity for maintaining the rich hunting heritage in Idaho.

The Idaho Fish and Game Commission and the Department of Fish and Game has a legal responsibility for conserving, protecting, perpetuating, and managing all of Idaho's wildlife. To fulfill that obligation Fish and Game is guided by a strategic plan (The Compass). The Compass, adopted in 2005, broadly describes objectives for four major goals: 1) sustain Idaho's fish and wildlife and the habitats upon which they depend, 2) meet the demand for fish and wildlife recreation, 3) improve public understanding of and involvement in fish and wildlife management, and 4) enhance the capability of Fish and Game to manage fish and wildlife and serve the public. The Compass by design contains no details; it is broad in scope. This mule deer management plan functions as an "action plan" referenced in The Compass and provides the specific goals, strategies, and performance objectives for management of mule deer.

This plan isn't designed to prescribe specific hunting seasons, rather it is designed to establish goals Fish and Game, working with mule deer enthusiasts, will achieve over the next 10 years. Overall, the plan directs Fish and Game to maintain or increase

current mule deer populations, and provide for additional mature buck hunting opportunities. Overall, the plan is ambitious and will require public support and additional financial resources for full implementation. Fish and Game will work to engage additional partners in mule deer management, including the governor's office, other elected officials, federal and state agencies, conservation organizations, private landowners, and sportsmen. Partnerships, combined with a common desire to improve mule deer management, will go along way to achieving the original vision of the mule deer planning team:

*"Abundant mule deer occupying healthy habitats ensuring a rich recreational, cultural, and public heritage for current and future generations"*

### Changing Landscapes, Changing Mule Deer

Mule deer populations and mule deer habitat have changed over time, and will continue to do so. More than 100 years ago, mule deer were not abundant in most parts of Idaho. About the time white men arrived, the landscape started changing. Vast fires in central and north central Idaho converted forested communities to productive shrubfields. In southern Idaho, fire suppression combined with intense livestock grazing promoted shrubs on predominately grass ranges. Both of these changes, combined with extensive predator control and limited hunting, resulted in an environment ideal for mule deer populations to flourish.

Mule deer numbers became so high in the 1950s and 1960s that deer began to overuse their habitat, still evidenced today by "high-lining" on many juniper and mountain mahogany winter ranges. Management direction was to reduce mule deer populations and restore healthy winter ranges. Fish and Game offered liberal hunting seasons, including hunting into December and multiple deer tags per hunter. Deer populations began to decline, and by





## Meeting Hunter's Expectations

Idaho. While some populations have rebounded since that winter, others have not.

Over the past 50 or more years, mule deer have shared an environment much different than they had the previous 100 years. Elk populations have increased dramatically. Livestock grazing practices have changed, promoting grasses. Agricultural practices have changed, converting winter wheat and other agricultural crops used by deer to monocultures of grasses through the Conservation Reserve Program. Human development, especially on low elevation winter ranges, has increased substantially. And predators, including the recently reintroduced gray wolf, have increased. All of these factors have complicated, and will continue to complicate, the management of mule deer.

Ultimately, mule deer are managed for the benefit of Idahoans, many of them hunters who eagerly look forward to the annual mule deer hunt. To develop a better understanding of the motivations and management preferences of Idaho mule deer hunters, Fish and Game contracted with the University of Idaho to conduct a scientific survey in 2006. More than 4,500 hunters participated in the survey. The survey showed a wide array of motivations and preferences. For most, the social experience of gathering with friends and family is the most important reason for mule deer hunting. For others, putting meat on the table is important. And for some, harvesting a mature buck is important.

Overall, survey respondents were generally unsatisfied with the number of deer seen, the number of bucks seen, and the number of mature bucks seen during the 2006 hunting season. Conversely, a majority of hunters were satisfied with their overall experience, and the opportunity to hunt mule deer. Notable was the preponderance of hunters that indicated a willingness to forgo larger bucks for the opportunity to hunt more frequently.

A similar survey conducted in 1987 shows two major differences between mule deer hunters in the late 1980s and those of today. The social aspect (hunting with friends and family) is far more important today. And about half of all mule deer hunters today use ATVs; five times higher than in the late 1980s. When asked about the primary reason for a dissatisfying hunt, the most common response was "improper use of ATVs."

In addition to the survey, Fish and Game hosted a mule deer workshop in Pocatello in August, and several public meetings throughout the state in



the 1970s there was concern throughout much of Idaho about too few deer. Fish and Game responded with restrictive hunting regulations.

Populations began growing in the early 1980s and continued until the early 1990s when significant drought gripped much of Idaho. Long-term drought and a harsh winter in 1992/1993, resulted in a significant decline in mule deer across southern

Idaho's landscape will continue to change, and mule deer populations will continue to fluctuate. Though mule deer managers can't eliminate the loss of wildlife habitat to human development, they can improve the remaining habitat, making it support more mule deer. Additionally, Fish and Game can influence elk and predator populations, striving for a balance. Finally, working with farmers and ranchers, the Department can encourage the development of healthy mule deer habitat on private land.

September and October to provide more opportunities for refining overall management direction.

This plan provides for a diversity of hunting experiences to meet the varying motivations and preferences of Idaho mule deer hunters. While it's not possible to provide for all types of experiences in all places, a range of opportunities will be available throughout the state. Each region will offer at least two types of hunting opportunity including general, quality or high-quality.

These opportunities can be broadly characterized as:

Characteristic	Type of Hunting Opportunity		
	General	Quality	High-Quality
<b>Hunter Success</b>	~25%	~50%	~75%
<b>Percent Mature Bucks (4 points)</b>	>25%	>40%	>60%
<b>Hunter Crowding</b>	0.3 – 3.5 hunters per square mile	<0.5 hunters per square mile	<0.1 hunter per square mile
<b>Opportunity to Hunt Every Year</b>	100%	~ 30%	<10%
<b>Buck:Doe Ratio</b>	~15 per 100 does	~25 per 100 does	~35 per 100 does

Most hunting opportunities offered will be general, addressing the preferences and desires of a majority of mule deer hunters for annual recreational opportunity with family and friends. Additional mature buck hunting opportunities will be provided, especially in those regions not now offering that type of experience.

Use of ATVs has increased substantially over the past 20 years. The most common reasons for using ATVs are to enjoy hunting with friends and family that use them, and to retrieve game. And the use of ATVs becomes an attractive accommodation for hunters getting older and less physically capable of extended hikes. But not all hunters enjoy ATVs. Fish and Game will work with federal and state land managers, private land owners, and hunters to encourage a balance of motorized and nonmotorized hunting opportunities. Fish and Game also will use the Motorized Vehicle Rule judiciously to ensure a balance of experiences exists.

Fish and Game will develop a guide to mule deer hunting in Idaho to help hunters find hunting opportunities that meet their desired experience.

### Habitat

Ultimately, healthy wildlife populations depend on adequate amounts of quality habitat. Hunting, disease, weather and predators affect mule deer. But healthy habitat has greater influence over the total abundance of mule deer. Fish and Game has limited authority for habitat management, which is mostly in the hands of federal land managers and private land owners. Only through collaborative working relationships will Fish and Game influence habitat practices that meet mule deer needs. Fish and Game will increase efforts to work with federal land managers and private landowners to improve habitat for mule deer. Programs, such as the Mule Deer Initiative, are opening doors, allowing Fish and Game to aggressively treat habitat, especially on private land.



This plan directs Fish and Game to improve habitat on more than 10,000 acres annually. Achieving this goal will require support and additional resources from elected officials, private landowners, federal and state land managers, and hunters. Though 10,000 acres may seem large, it is small compared to what ultimately is needed to meet the needs of a larger mule deer population. Further support, commitment, and partnerships will be actively pursued by Fish and Game to achieve habitat management goals.

Mule deer habitat is not stagnant; it will require constant attention and management – whether it means actively managing forested communities for younger seral stages and more shrubs, or protecting sagebrush-steppe habitats from fire and invasive species. Sometimes deciding how best to manage habitat for mule deer is difficult. The Western Association of Fish & Wildlife Management Agencies, through the Mule Deer Working Group, is developing comprehensive mule deer habitat management guidelines. These guidelines are expected to be complete by 2009. Fish and Game will actively encourage federal, state and private habitat managers to incorporate these guidelines into land use decisions.



## Mule Deer Management Goals

Fish and Game plans to achieve the following mule deer management goals over the next 10 years:

- Provide mule deer hunting opportunities that reflect the preferences and desires of hunters.
- Maintain healthy and productive mule deer populations.
- Establish short-term and long-term population objectives that represent maintenance of, or increase in, current mule deer population levels.
- Maintain annual hunting opportunity.
- Increase the opportunity for mature buck hunting, equitably distributed throughout the state.
- Implement predator management actions when and where appropriate to aid in achieving management objectives.

- Encourage recruitment of new hunters and retention of existing hunters.
- Use antlerless harvest judiciously and conservatively to achieve management objectives.
- Develop simple and easily understood regulations that encourage participation in deer hunting.
- Fully implement the Mule Deer Initiative Action Plan.
- Improve and protect over 10,000 acres of habitat annually.
- Encourage land management agencies to incorporate mule deer habitat needs in agency decisions.
- Manage mule deer populations proportionate to habitat capabilities.
- Evaluate a cost-effective and reliable habitat monitoring program.

- Reduce illegal harvest, especially of mature mule deer bucks; and reduce commercialization of mule deer parts.
- Improve population monitoring programs.
- Work with landowners and sportsmen to minimize and mitigate for depredations.
- Improve management coordination with other agencies and organizations.
- Implement special investigations to improve population and habitat management capabilities.
- Provide information and improve public understanding of mule deer management in Idaho.
- Ensure continued citizen involvement in mule deer management.

## Population Goals

Based on mule deer movements, similar habitats, and similar management objectives, the state is divided into 15 Population Management Units (PMUs), representing “distinct” mule deer populations. Population goals (maintain or increase) have been established for each of the PMUs based on population status relative to long-term abundance, habitat conditions, and stakeholder desires. And, short- and long-term population goals are established for each PMU. Short-term goals are for one to three years, achieved primarily through hunting season frameworks. Long-term goals represent mule deer populations three to 10 years from now. Long-term goals will require completion of many of the strategies outlined in the plan, particularly habitat improvements.

Overall, Fish and Game will manage for more mule deer. Short-term goals in eight of 15 PMUs are for increased populations. Long-term goals in 11 of 15 PMUs are for increased populations. PMUs managed to maintain the current populations are in areas where few mule deer exist, where white-tailed deer or elk receive priority, or where the mule deer populations are at or near recent historical highs.

Fish and Game will establish short- and long-term numerical population objectives for 13 of 15 of the PMUs after conducting a census of each PMU over the next four years.

## Antlerless Harvest

The use of antlerless harvest is an important tool for a number of objectives including:

- To achieve desired population levels.
- Address depredation concerns.
- To increase productivity (e.g. number of bucks added to the population each year).
- Provide additional hunting opportunity.
- Increase opportunities for hunter recruitment and retention.

But antlerless harvest must be used cautiously to prevent over-harvest of deer populations. Fish and Game will implement a number of management changes to ensure antlerless harvest is used appropriately. Fish and Game will use a conservative approach by using science-based adult doe harvest reference values to determine if overall antlerless harvest is consistent with population goals. Allowable antlerless harvest will be determined annually based on population goal, fawn production, over-winter fawn survival, and adult doe survival. Additionally, Fish and Game will monitor body condition, age structure, habitat

conditions, and antler growth rates to determine whether populations are nutritionally limited and additional antlerless harvest is needed to balance deer populations with available habitat.

## Predator Management

Managing predators to increase mule deer populations is a complex issue, in part because different segments of society value predators differently, and because previous efforts have met with mixed results. Nonetheless, predator management is desired by many hunters and is an important tool for Idaho Fish and Game.

Determining whether predator management will benefit mule deer populations requires a complex analysis of predator and prey population status, nutritional status of prey, cause-specific mortality, logistical considerations and scale of the predator management effort, and social and economic considerations. As a general rule, predator management can result in more mule deer when the following conditions are met:

- Prey population is not limited by nutrition (e.g. below carrying capacity).
- Predators are a primary source of mortality.
- Significant numbers of predators can be removed economically.
- Predator removal efforts are timed just prior to predator or prey reproductive periods (e.g. spring).
- Predator management efforts are focused on small areas.

Mountain lions and coyotes are the primary predators of mule deer in Idaho. Following significant reductions in mule deer populations (e.g. after a hard winter), Fish and Game will liberalize, for the short-term, mountain lion hunting seasons to reduce predation pressure when populations are low. Additionally, the Idaho Fish and Game Commission will continue to direct the use of Fish and Game funds provided to the Animal Damage Control Board for control of predators, focusing efforts where the most benefits can be gained.





## Mule Deer Monitoring

In 1998, Fish and Game initiated a new monitoring program that provided more information on mule deer populations than ever before gathered. New information collected included over-winter fawn survival, migratory movements and annual changes in populations. Annual population changes were determined by conducting aerial surveys over specific large winter ranges, or trend areas, every year. The use of trend areas provides a reliable index to large changes in populations. But relying solely on trend areas may not provide information on more subtle population changes, especially those occurring on small winter ranges. The use of trend areas also doesn't allow mule deer managers to generate a total population estimate for a geographic area.

This plan initiates further refinements in mule deer population monitoring. Fish and Game will no longer solely rely on specific winter ranges. Rather, less frequent but more comprehensive aerial surveys will be conducted to generate total population estimates for 13 of the 15 PMUs. Periodic complete population estimates, combined with annual data on fawn production, over-winter fawn survival, and adult doe survival will allow Fish and Game to track total population status annually. As the price of helicopter rentals continue to escalate, and availability of suitable helicopters and experienced pilots decline, the new monitoring program will enable Fish and Game to continue to monitor populations accurately in the future with less reliance on aerial surveys.

Fish and Game will continue to operate check stations and require mandatory reports to provide information on harvest. Check stations are primarily used to solicit early input on how hunting seasons are progressing, to collect biological data, and provide

an opportunity to interact with hunters. Fish and Game will continue to use the mandatory harvest report, but will implement changes to improve data quality, increase timeliness of the information, and simplify compliance by hunters.

## The Future

Mule deer and mule deer managers today are facing new and ever changing challenges, including habitat loss and modification, an aging hunter base with differing desires, greater reliance on motorized vehicles, and an increased importance of the social aspects of mule deer hunting. This plan is a continued effort by Fish and Game to address these challenges, provide direction and specific management objectives over the next 10 years.

Many of the strategies outlined in this plan will result in functional changes in how Fish and Game manages mule deer. Some changes will require mule deer hunters to make concessions, but Fish and Game will work cooperatively with those hunters to minimize or mitigate effects while maintaining focus on achieving the objectives desired by most mule deer enthusiasts.

Fish and Game is committed to establishing collaborative working relationships with all stakeholders, because without their support and commitment, mule deer populations will continue to decline. Ultimately, Fish and Game has a legal obligation to ensure mule deer thrive and the needs of mule deer enthusiasts are met. We willingly accept this obligation and look forward to actively implementing on-the-ground actions to maintain mule deer as an icon on Idaho's landscape.





## INTRODUCTION

Mule deer (*Odocoileus hemionus*) are a true icon of the West, providing recreational, aesthetic, social, cultural, and scientific values for >70 million people. In Idaho, mule deer are a keystone management species relative to their impact on hunting recreational opportunity, cultural heritage, wildlife management, and rural economies. In 2006, >91,000 hunters pursued mule deer, spending approximately 420,000 days a field; more hunters and more hunter-days than for any other wildlife species in Idaho. Thousands of hunters gather every fall to enjoy the mule deer hunting experience, rekindling special relationships among family and friends. Additionally, annual mule deer hunting introduces youth to hunting, facilitating passage of the hunting heritage from generation to generation.

Economically, mule deer are important to the Idaho Department of Fish and Game (Department or IDFG) and to many small rural economies in Idaho. Cooper and Unsworth (2000) estimated mule deer hunting in 2006 resulted in direct expenditure of \$42 million in trip related expenses, not including equipment purchases. Many of these expenditures were for fuel, meals, and lodging in rural towns. Using a typical economic multiplier of 2.5 (Gordon and Mulkey 1978), the total estimated economic impact of mule deer hunting in Idaho exceeded \$100 million. Additionally, >1,000 jobs in Idaho are directly supported by mule deer hunting related expenditures (Cooper and Unsworth 2000). In 2006, direct revenues to IDFG from mule deer license and tag sales were nearly \$6.3 million, representing nearly 20% of total license/tag revenues used by IDFG to implement important wildlife conservation programs including enforcement, population monitoring and research, and habitat conservation. Because of the importance of mule deer to Idaho, mule deer management will be a priority program for IDFG

### Purpose

Idaho Code 36-103 establishes statewide policy for wildlife, and can be paraphrased as all wildlife will be preserved, protected, perpetuated, and managed to provide continuous supplies for hunting, fishing, and trapping. The Idaho Fish and Game Commission (Commission or IFGC) is charged with administering state wildlife policy through supervision and management of IDFG.

Idaho Code 67-1903 requires state agencies to develop strategic plans expressing how they will meet core mission requirements. Plans must identify outcome-based goals and performance measures. The current

IDFG strategic plan, entitled "The Compass," was implemented in 2005 (<http://fishandgame.idaho.gov/cms/about/compass/>). The Compass calls for the development of "action plans" that describe programs, projects, and activities necessary to meet strategic plan goals.

This Mule Deer Management Plan tiers off of the IDFG strategic plan, functioning as the action plan for mule deer management in the state. Major issues affecting mule deer management are identified, setting overall direction for mule deer management during the next 10 years and providing performance targets and management strategies for management actions. Although the plan is not regulatory (e.g., statute or rule), it does incorporate IFGC policy and provide management direction to IDFG. This plan will guide IDFG in annual work plan development and program priority, and provide guidance on development of regulatory recommendations. Finally, it will be used in development of IDFG's annual budget request to the legislature.

### Public Involvement in Plan Development

In 2006, IDFG contracted with the University of Idaho to conduct a statewide random survey of mule deer hunters. The survey was designed to 1) measure satisfaction, 2) understand motivations for mule deer hunting, 3) identify management preferences, and 4) evaluate acceptance for various management options. A total of 1,494 hunters responded to the survey (60% response rate). Additionally, the same survey was posted on the IDFG website to provide additional opportunity for public involvement. A total of 3,566 people responded on the web-based survey. An executive summary of the survey is provided in Appendix A. Complete survey results can be found at <http://fishandgame.idaho.gov/cms/hunt/MDI/MuleDeerResults.pdf> (Sanya et al., unpublished data).

The Department, along with Sportsman's Warehouse and the Southeast Idaho Mule Deer Foundation hosted a Mule Deer Workshop in Pocatello in August 2007. The workshop featured invited mule deer experts discussing numerous aspects of mule deer management. Over 100 mule deer enthusiasts participated in the work shop.

Additionally, IDFG hosted "sounding board" meetings throughout the state. Hunters representing a diversity of motivations for hunting mule deer were invited to these meetings to provide qualitative feedback on proposed management plan direction. Results from the Mule Deer Hunter Survey, workshop, and "sounding board"

meetings were used to develop the draft plan.

Between mid-November 2007 and January 2008, IDFG solicited public comment on the draft plan using open houses and the website. Approximately 250 people attended open houses, and 129 people commented via the website. After considering all public comments, the draft plan was modified and prepared for consideration by the IFGC.

The IFGC held public hearings on 16 January 2008 and 5 March 2008 to solicit testimony on the final proposed plan. Minutes of the public hearings can be found at [http://fishandgame.idaho.gov/cms/about/commission/meeting\\_notes.cfm](http://fishandgame.idaho.gov/cms/about/commission/meeting_notes.cfm). The plan was adopted by the Commission on 6 March 2008.

Public involvement was a critical component in developing this plan, and will continue to be a necessary aspect of mule deer management throughout implementation. A goal of this plan is to implement biennial rules for big game. However, annual review will occur, much as it has in the past, in order to respond to emergency situations. The Department will work extensively with mule deer hunters during the rule making process.

## RELEVANT PLANNING DOCUMENTS

- Black bear management plan 1999-2010 (IDFG 1998).
- White-tailed deer, mule deer, and elk management plan (IDFG 1999).
- Policy for avian and mammalian predation management (IDFG 2000).
- Mountain lion management plan 2002-2010 (IDFG 2002).
- White-tailed deer management plan 2004-2015 (IDFG 2004).
- Idaho comprehensive wildlife conservation strategy (IDFG 2005a).
- The Compass, IDFG strategic plan (IDFG 2005b).
- The Mule Deer Initiative action plan (IDFG 2005c).
- Memorandum of Understanding between IDFG and Idaho State Animal Damage Control Board (IDFG and Idaho State Animal Damage Control Board 2005).
- Idaho wolf population management plan 2008-2012 (IDFG 2008).

- Idaho wolf conservation and management plan (Idaho Wolf Legislative Oversight Committee 2002).
- North American mule deer conservation plan (Mule Deer Working Group 2004).

## RESULTS FROM PREVIOUS PLANNING PERIOD

The previous mule deer management plan (IDFG 1999) emphasized the “what” (population objectives) rather than the “how” (management strategies). Overall management direction was to provide maximum levels of recreational opportunity, including a variety of hunting experiences, while maintaining management objectives. The state was divided into 22 analysis areas. Objectives for percent 4-point deer in the harvest were established for all analysis areas. In 17 analysis areas post-hunting season objectives for bucks per 100 does were established. Finally, antlerless harvest threshold objectives were established for 28 discrete trend area winter ranges in 15 analysis areas. The antlerless harvest threshold objectives were not set as population objectives; rather they were established to help guide decisions on when antlerless harvest was appropriate. A significant objective in the previous plan was to improve monitoring of mule deer populations by implementing annual monitoring of population status on select winter ranges and collecting over-winter fawn survival information. Table 1 identifies management objectives and achievements during the previous planning period.

**Table 1. Summary of accomplishments from the 1999-2007 planning period.**

<b>Management Direction</b>	<b>Statewide objective</b>	<b>Results</b>	<b>Conclusions and recommendations</b>
Provide maximum recreational hunting opportunity	Not specified	Maintained general hunting opportunity in all analysis areas	Continue to offer adequate amounts of general hunting to accommodate demand for annual hunting opportunity
Provide a diversity of hunting experiences	Not specified	<p>Provided archery, muzzleloader, and/or any-weapon opportunity in all analysis areas.</p> <p>Provided diversity in hunt experiences by managing for a variety of buck:doe ratios (15-25 bucks per 100 does) and a variety of % 4-points in the harvest (15-50% 4-points)</p>	<p>Continue to provide a diversity of hunting experiences, including special weapon hunts</p> <p>Provide for a more even distribution of diverse hunting experiences throughout the state (not all regions provide a diversity of hunting experiences)</p>
Achieve buck management objectives	<p>15 bucks:100 does in 14 analysis areas</p> <p>20 bucks:100 does in 1 analysis area</p> <p>25 bucks:100 does in 2 analysis areas</p> <p>&gt;15% 4-points in 1 analysis area</p> <p>&gt;25% 4-points in 1 analysis area</p> <p>&gt;30% 4-points in 16 analysis areas</p> <p>&gt;35% 4-points in 2 analysis areas</p> <p>&gt;45% 4-points in 1 analysis area</p> <p>&gt;50% 4-points in 1 analysis area</p>	<p>Met buck:doe objectives in 13 of 17 analysis areas.</p> <p>Met % 4-point objectives in 17 of 22 analysis areas</p>	<p>Monitor buck:doe ratios on a 3-year moving average to better account for annual variation</p> <p>Continue to provide a diversity of buck hunting experiences</p>
Allow antlerless harvest when populations are at, or above, desired levels	<p>Establish antlerless harvest thresholds (minimum desired population counts) for 29 trend area winter ranges</p> <p>Allow antlerless harvest to manage mule deer populations in accordance with an antlerless harvest decision model that considers population size in relation to the antlerless harvest threshold, deer condition, and over-winter fawn survival</p>	<p>Established antlerless harvest thresholds for 28 trend area winter ranges</p> <p>Carefully applied antlerless harvest strategies to manage populations, resolve depredations, and provide hunting opportunities</p>	<p>Revise the antlerless harvest decision matrix to account for population status, age structure, recruitment, condition, and population management goals</p> <p>Increase awareness and use of antlerless harvest decision matrix</p>
Improve population monitoring	<p>Annually monitor population status in 29 trend area winter ranges</p> <p>Annually monitor over-winter survival of &gt;200 fawns</p>	<p>Implemented annual monitoring of population abundance in trend area winter ranges</p> <p>Monitored &gt;200 fawns annually to determine over-winter survival and cause-specific mortality</p>	<p>Annual monitoring provided valuable status and trend information for management decisions</p> <p>The use of trend areas failed to recognize importance of, and changes in, peripheral winter ranges</p> <p>Develop a monitoring strategy that generates total population estimates for discrete geographic areas</p> <p>Continue to monitor over-winter fawn survival</p> <p>Implement annual survival monitoring of adult female mule deer for modeling purposes</p>

# MULE DEER MANAGEMENT ISSUES

## Hunting Opportunities and Experiences

Idaho mule deer hunters have various motivations for hunting including spending time with family and friends, seeing mule deer and other wildlife, being close to nature, getting away from the usual demands of life, harvesting a deer, putting meat in the freezer, harvesting a mature buck, and others. In comparison to mule deer hunters in 1987, today's hunters are older, the social aspects of the hunt are more important, and they are more likely to use an off-highway-vehicle (OHV) (Sanyal et al., unpublished data).

Mule deer hunting has strong ties to Idaho's history and culture and today's hunters highly value the opportunity to hunt every year. However, many hunters also desire more opportunities to hunt mature bucks or to hunt with special weapons such as muzzle loaders. To meet the demands of the broad spectrum of mule deer hunters, this plan will provide the framework for implementing a diversity of hunting experiences ranging from general seasons with over-the-counter tags to "high-quality" hunts with very limited numbers of controlled hunt permits.

**Annual opportunity.**— Idaho currently offers liberal general season hunting opportunities. In 2006, 96 of the state's 99 game management units (GMUs) provided general season hunting opportunity for more than 91,000 mule deer hunters. General season any-weapon hunts are typically characterized by relatively high hunter densities, averaging 1.5 hunters/mi<sup>2</sup>. Roughly one-half of the bucks taken during general seasons are yearlings and approximately one-third are 4-point or larger bucks. These hunts have become a staple for maintaining Idaho's hunting tradition and continue to provide an opportunity for family and friends to get together for the "annual hunt."

Idaho mule deer hunters are clear about their desire to maintain annual hunting opportunity. In the 2006 survey of mule deer hunters, the opportunity to hunt every year was the most important factor contributing to hunter satisfaction (Sanyal et al. unpublished data).

**Buck management.**— The majority of Idaho deer hunters prefer to harvest a mature buck to other types of mule deer. Mature buck hunting opportunity, however, has become increasingly difficult to provide in recent years. In addition to lower deer numbers in some parts of Idaho, human encroachment, increased road and trail

densities, and the dramatic increase in OHV use by hunters have resulted in less security habitat for mule deer bucks during hunting season. In many GMUs, the increase in buck vulnerability has resulted in fewer bucks reaching older age classes.

In 1991, IDFG moved general mule deer hunting seasons away from the rutting period to the existing October timeframe to reduce buck harvest. This action allowed IDFG to offer some very limited controlled hunt opportunity for mature bucks during the rut, providing highly sought after hunting opportunities with drawing chances averaging approximately 15%.

Seasons in several GMUs have been managed exclusively as controlled hunts (except for general archery seasons) where hunter numbers and harvest are regulated to provide a hunting experience with fewer hunters and an increased opportunity to harvest a mature animal. The trade-off for hunters is that the chance to participate in a controlled hunt generally ranges from 3% to 25%, and hunters cannot apply for these hunts again the year after drawing a permit. Other management tools such as a 2-point or smaller restriction during the general season, 4-point or larger regulations, and motorized vehicle use management have also been used to improve "quality" of hunting experiences and mature buck potential.

Idaho hunters want additional mature buck hunting opportunities and providing these opportunities present challenges in balancing the trade-offs and sacrifices that will be required of hunters. Growing large-antlered, mature mule deer requires that deer have adequate age, habitat, and genetic potential. Consequently, increasing mature buck numbers usually requires reductions in hunter numbers and overall buck harvest. Harvest can be limited in several ways: season timing, weapons restrictions, access restrictions, harvest quotas, and restrictions on hunter numbers. Limiting hunter numbers with controlled hunts to reduce harvest can result in a redistribution or displacement of hunters and increased hunting pressure and hunter congestion in general hunt areas.

**Buck:doeratio**s are typically measured in late December to provide biologists and hunters with a relative assessment of buck abundance and age structure following the hunting season. **Buck:doeratio** objectives are frequently used to guide harvest management decisions for the type of hunting opportunity provided. During the previous planning period, objectives were

established to maintain a minimum of 15 bucks:100 does in most general seasons, and 20 or 25 bucks:100 does in back country and controlled hunt GMUs to provide a higher proportion of mature bucks. The 15 bucks:100 does objective was based on social criteria. Anecdotal information suggests hunter satisfaction declines significantly with <15 bucks:100 does.

Buck:doer ratios are an important measure for ensuring a biological minimum number of bucks for breeding purposes. White et al. (2001) did not find a threshold buck:doer ratio where productivity declined significantly, even with ratios <5 bucks:100 does. Similarly, data from Idaho and Montana does not demonstrate a reliable relationship between buck:doer ratio and fawn:doer ratios, or over-winter fawn survival (IDFG unpublished data). Existing information suggests the biological minimum for mule deer is <5 bucks:100 does.

A primary goal of this plan is to provide annual hunting opportunity. Additionally, the IFGC has established a goal of  $\geq 15$  bucks:100 does in general hunts. Because of variation in mule deer productivity, over-winter fawn survival, and buck vulnerability; hunters can expect buck:doer ratios may periodically fall below management goals. However, if buck:doer ratios fall below management goals for 3 consecutive years, the IDFG will conduct an evaluation of productivity, fawn survival, hunter harvest, vulnerability, habitat condition, and hunter satisfaction/preference and recommend appropriate corrective action.

This plan provides for a diversity of hunting experiences to meet the various motivations and preferences of Idaho mule deer hunters. While it is not possible to provide for all types of experiences in all places, a range of opportunities will be available throughout the state. Each region will offer at least 2 types of hunting opportunity including general, "quality", or "high-quality", as dictated by regional hunter preferences. These opportunities are broadly characterized in Table 2. The Department will improve efforts to inform hunters about buck ratios and numbers throughout the state.

Because of varying social attitudes and preferences, mule deer population characteristics, and habitat characteristics across Idaho; no single management tool is prescribed for achieving buck management goals. Rather, a variety of tools including season length and timing, weapon restrictions, antler point restrictions, area specific tags, motorized vehicle rule, split seasons, controlled hunts, and others, will be evaluated.

Youth, Seniors and Hunters with Disabilities.— Hunter physical ability and experience are key issues in providing

opportunities that reflect the preferences and desires of Idaho hunters. Young and inexperienced hunters require ample opportunity to participate in hunting to develop their skills and interest in the sport. Recruiting new hunters and retaining existing hunters are important to the future conservation of mule deer through hunter support for the species (see Hunter Recruitment and Retention section below). Senior and disabled hunters may desire a hunt that is less physically demanding for them to participate. Additionally, OHV use is an attractive option for some hunters physically unable to participate in long, extended hikes. Allocating hunting opportunity among various hunters is an important issue.

Hunter Access.— Providing access to sportsmen is an important function of IDFG. According to the 2006 survey of mule deer hunters, having access to public and private land positively affected the choice of where to hunt for 91% and 62% of mule deer hunters, respectively (Sanyal et al. unpublished data). Providing access for hunters requires balancing the need for access with the need for providing security habitat for bucks.

The Department has implemented several programs over the past few decades aimed at improving relationships between landowners and sportsmen and increasing access to private property. In 1987, the IFGC adopted a landowner preference permit system that provided landowners, with suitable wildlife habitat, a controlled hunt permit in units with no general hunt. This program was replaced with the Landowner Appreciation Permit program in 1999. Most recently, IDFG implemented the Access Yes! program, which compensates landowners for providing access to hunters, anglers, and trappers. The Access Yes! program began in 2003 and has steadily expanded. In 2007, IDFG enrolled 108 landowners providing access to 634,956 acres of private land and through private land to 726,320 acres of public land.

Although most hunters (55%) are satisfied with the current amount of access (Sanyal et al. unpublished data), there is room for improvement. Emphasis on increasing access will continue as access to and through private land becomes more difficult for Idaho's sportsmen.

Motorized Vehicle Use.— Use of OHVs is an important component of mule deer hunting in Idaho. Since the late 1980s, there has been a substantial increase in use of OHVs. Currently, >100,000 all-terrain vehicles (ATVs) and motorbikes are registered in Idaho; 5 times the registrations in the 1980s. Sanya et al. (unpublished data) found that approximately one-half of all mule deer hunters use ATVs or motorbikes. The most commonly cited reasons for using an OHV included to hunt with friends and family using OHVs, and to retrieve game. Additionally, it is anticipated that as the average age of

**Table 2. Characteristics of hunting opportunity types in Idaho.**

Characteristic	Type of hunting opportunity		
	General	Quality	High Quality
Hunter success (%)	≈25	≈50	≈75
Mature bucks (% 4 points)	>25	>40	>60
Hunter density (hunters/mi <sup>2</sup> )	0.3-3.5	<0.5	<0.1
Opportunity to hunt every year (%)	100	≈30	<10
Buck:doe ratio (per 100 does)	≈15	≈25	≈35

As hunter density increases, there will be an increasing demand for use of motorized vehicles to accommodate for declining physical ability.

However, increasing use of OHVs along with concurrent increases in motorized roads and trails also have biological and sociological consequences. Motorized vehicle use of roads and trails can displace mule deer from otherwise suitable habitat, increase buck vulnerability, and facilitate conflicts between motorized and nonmotorized hunters. Avoidance of habitats and increased vulnerability generally result in reduced mule deer populations and fewer mature bucks. Sociologically, conflicts between motorized and nonmotorized hunters have increased concurrent with increasing use of OHVs. The 2006 survey of Idaho mule deer hunters indicated that off-road use of OHVs was the top factor contributing to a dissatisfying hunt (Sanyal et al. unpublished data).

During 2002, IDFG began implementing a Motorized Vehicle Rule (MVR) that limits the use of motorized vehicles to roads capable of being traveled by a full-sized automobile. This rule was implemented to help reduce off-road travel and subsequent conflicts between motorized and nonmotorized hunters, and to increase mature buck numbers. During the 2007 hunting seasons, the MVR was employed in 29 of 99 GMUs. Generally, a majority of hunters support the rule (Sanyal et al. unpublished data). However, the rule is confusing to some, especially when it differs from land management agency travel rules.

In 2005, the U.S. Forest Service (USFS) implemented a rule (36 CFR Parts 212, 251, 261, and 295) entitled "Travel Management: Designated Routes and Areas for Motor Vehicle Use" (<http://www.fs.fed.us/recreation/programs/ohv/final.pdf>). When fully implemented, the rule will restrict OHV use to designated routes and trails, eliminating cross-country travel. Full implementation is expected by 2010.

**Hunter Density.**— Hunter density is an important issue contributing to hunt quality and hunter satisfaction. In

Idaho, hunter densities range as high as 3.5 hunters/mi<sup>2</sup> in some general hunts. In controlled hunts, hunter densities are typically <0.5 hunters/mi<sup>2</sup>. Overall, hunter crowding was not identified as a major issue for Idaho hunters. For >50% of hunters in the 2006 survey, the quality of their hunting experience was not reduced by other hunters. More than one-half of hunters in the 2006 survey indicated that encounters with other hunters did not reduce the quality of their hunting experience (Sanyal et al. unpublished data). Implementation of additional mature buck hunting opportunities in Idaho could result in displacement of some hunters and increased congestion in some game management units.

**Hunter Retention, Recruitment, and Support.**— Hunting is embedded in human evolution and culture as a skill necessary for survival. Today, hunting is better described as a direct link to wildlife and the natural world, and a cultural identity. Hunters have provided the backbone of conservation efforts in the United States during the past century. Hunting also has a substantial influence on the economy. Each year approximately 13 million people ≥16 years old go hunting, spending over \$20 billion in the process (USFWS 2002).

Hunter numbers are declining in the United States, with poor hunter recruitment (new hunters starting to hunt) and poor hunter retention (previous hunters continuing to hunt) as important factors (Enck et al. 2000). Since 1970, Idaho's population has increased 106%, while the number of resident deer tags sold has decreased 24%. The proportion of Idaho residents purchasing a deer tag has dropped from 23% in 1970 to fewer than 9% in 2006. This decline is attributable primarily to a changing culture, but is more pronounced in recent years because of lower mule deer numbers.

The decline in hunter numbers is important not only to hunters, but to all persons interested in conservation of wildlife and wildlife habitat. State agencies tasked with the conservation and management of wildlife strive to conserve and enhance wildlife habitat directly, and also to influence land-use policy to accommodate wildlife needs. Because state wildlife agencies are funded largely

by license sales and federal excise taxes on hunting equipment, a decline in hunter numbers reduces the agency's ability to manage and conserve wildlife, and to provide services requested by hunters.

Harvest success is only one of many considerations that affect a hunter's decision to continue participating in hunting (Case 2004). Hammitt et al. (1990) identified environmental (e.g. weather and topography) and social (e.g. crowding and hunting behavior) factors as the best predictor of satisfaction with the hunting experience. A general lack of outreach and education efforts to support hunters and hunting was listed as the most commonly named constraint to effective hunter retention and recruitment (Responsive Management 2005, D.J. Case & Associates 2007).

## Predator Management

Management of predators to increase mule deer populations is a complex issue, in part because different segments of society value predators differently, and because previous research on effects of predator management is equivocal. Nonetheless, predator management is desired by many sportsmen and is an important tool for IDFG when used appropriately. The IFGC implemented a policy entitled "Policy for Avian and Mammalian Predation Management" to guide IDFG's implementation of predator management activities ([http://fishandgame.idaho.gov/cms/wildlife/plans/mam\\_predation.cfm](http://fishandgame.idaho.gov/cms/wildlife/plans/mam_predation.cfm)).

Primary potential predators of mule deer in Idaho include mountain lion (*Felis concolor*), black bear (*Ursus americanus*), gray wolf (*Canis lupus*), coyote (*Canis latrans*), and bobcat (*Lynx rufus*). Mountain lions and coyotes are considered the primary predators of mule deer in the state. Although wolves can be a significant predator on mule deer (Klein 1995), research in Idaho has demonstrated wolves are currently focusing on elk (*Cervus elaphus*) as primary prey (Hussemann 2002). If wolf populations expand and occupy areas of the state with limited elk numbers, it is likely white-tailed deer (*O. virginianus*) or mule deer would become the primary prey base.

Predation has a combination of compensatory and additive effects. Compensatory mortality occurs when 1 source of mortality offsets another source. An example of compensatory mortality would be a mule deer fawn in poor physical condition killed by a coyote during winter. The fawn likely would have died from malnourishment even if it had not been killed by a coyote. When compensatory mortality is occurring in a population, reducing 1 source of mortality will result in an increase in another source; with no net decrease in total mortality.

Compensatory mortality occurs most often when populations are near carrying capacity (Macnab 1985). Applying predator management actions when predation is largely compensatory will result in few benefits to prey populations.

Conversely, additive mortality results in an increase in total mortality. An example of additive mortality would be a healthy adult mule deer doe killed in a vehicle collision during summer. This doe would have likely survived if not for the accident. The further a population is below carrying capacity, the greater proportion of total mortality is additive (Macnab 1985). Applying predator management actions when predation is largely additive will generally increase prey survival and population numbers.

While application of predator management appears simple relative to compensatory or additive mortality, results are complicated by a host of additional dynamic factors including forage and cover conditions, weather, alternate prey abundance, deer physical condition and vulnerability to predation (Smith and LeCount 1979, Hamlin et al. 1984, Teer et al. 1991, Bartmann et al. 1992, Unsworth et al. 1999, Ballard et al. 2001). A single source of mortality can be compensatory under one set of conditions and additive under another. The challenge for wildlife managers is to understand enough about the intricacies and interactions of all the factors to determine if and when predator management could be effective, and therefore potentially appropriate. Generally, intensive studies are required to understand the relative role of all potential limiting factors for a mule deer population.

Between 1997 and 2002, Hurley et al. (unpublished data) studied the effects of increased harvest rates on coyotes and mountain lions in southeastern Idaho. Coyote predation on neonatal fawns during summer was offset by increased malnourishment during winter, indicating total annual coyote mortality was largely compensatory. The degree to which coyote predation was either additive or compensatory was influenced by alternate prey and weather conditions. During periods of low lagomorph and microtine populations and mild winter conditions, coyote predation was partially additive. Coyotes are considered a facultative predator of mule deer (Ballard et al. 2003) and prefer small mammals. Results from the southeastern Idaho study were consistent with other coyote removal studies reviewed by Ballard et al. (2003).

Conversely, mountain lion predation of mule deer in southeastern Idaho was considered largely additive (Hurley et al. unpublished data). Mule deer survival and recruitment increased with lion removal resulting in slight population increases during the most intense mountain lion removal periods. However, Logan et

al. (1996) determined mountain lion predation to be substantially compensatory during a period of severe drought in southern New Mexico. Mountain lions are considered an obligate predator of mule deer (Ballard et al. 2003) and their functional effect on mule deer populations is much less dependent on alternate prey abundance.

The relative degree to which predation on mule deer affects population levels varies considerably through time and space, and there is no simple method for determining if and when predator management can be used to increase deer populations. A cursory look at a deer herd or predator populations will not provide the information needed to determine if predation is limiting. Only after an in-depth evaluation of all the factors potentially affecting a deer herd can a scientifically-sound recommendation be made.

Although previous research on predation effects on ungulate populations has yielded ambiguous results (Connolly 1978), there are some general guidelines to consider when deciding whether to initiate predator management to benefit mule deer populations (Table 3).

### Mule Deer, White-tailed Deer, and Elk Interaction

Some hunters and wildlife managers have speculated on the impact of increasing white-tailed deer populations. Although white-tailed deer and mule deer have similar diets, whitetails generally are associated with more mesic habitat types and agricultural lands at lower elevations (i.e. river and stream riparian areas) than mule deer (Mackie 1981). Wood et al. (1989) found little evidence for direct competition between sympatric mule deer and white-tailed deer in eastern Montana, where mule deer and white-tailed deer maintained spatial separation. Conversely, Geist (1990) hypothesized that hybridization between white-tailed deer and mule deer will ultimately lead to the demise of mule deer. Empirical evidence for competition between white-tailed deer

and mule deer is far from conclusive. Nevertheless, the 2005-2014 Idaho White-tailed Deer Plan states "IDFG will not actively encourage expansion of white-tailed deer in southern Idaho. However, whitetails will be managed in suitable habitats in southern Idaho where substantial overlap with mule deer does not occur."

Of greater interest to many hunters and some wildlife managers is what impact increasing elk populations are having on mule deer. Lindzey et al. (1997) reviewed several deer and elk competition studies and concluded past research results were equivocal. Much of the past research was narrowly focused, of limited spatial and temporal scales, or too observational in nature to draw general conclusions (Lindzey et al. 1997). Complicating the issue is changing landscapes, where habitat change favors 1 species over another (Keegan and Wakeling 2003). Future research should incorporate controlled experimentation where elk and mule deer populations are independently manipulated and intensively monitored to determine whether competition affects populations (Keegan and Wakeling 2003).

Competition can occur in 2 forms; exploitative and interference. Exploitative competition occurs when 1 species uses limited resources, such as forage, thus making it unavailable for another species. Interference competition occurs when 1 species avoids another species, thus making habitat unavailable. Elk are considered diet generalists; capable of digesting a wide variety of forage including low quality grasses. Conversely, deer are considered selective concentrate feeders; requiring more digestible and higher quality forage (Wickstrom et al. 1984). In general, elk are capable of utilizing most mule deer forages, but mule deer are incapable of using many common elk forages. Exploitative competition of important mule deer shrubs on some winter ranges in Idaho is a concern. Interference competition, avoidance of elk by mule deer, has been documented (Lindzey et al. 1984, Johnson et al. 2000) and can be a concern if mule deer are relegated to lower quality habitats. Occupancy by elk of aspen

**Table 3. Guidelines for determining whether predator management activities can be expected to increase mule deer numbers (adapted from Ballard et al. 2003).**

Increased deer numbers likely	Increased deer numbers unlikely
Deer population below carrying capacity	Deer population near carrying capacity
Predation identified as a major cause of mortality	Predation not identified as a major cause of mortality
Predator management efforts can result in a significant decline in predator numbers (e.g., $\geq 70\%$ of existing coyote population)	Predator management efforts unlikely to achieve a significant reduction in predator numbers
Predator management efforts timed just prior to predator or prey reproductive periods	Predator management efforts haphazardly scheduled throughout the year
Predator management efforts focused on a small area (generally $< 400 \text{ mi}^2$ )	Predator management efforts scattered over large areas

(Populustremuloides) and mountain shrub communities (important mule deer fawn rearing habitats) in southern Idaho prompts the question whether mule deer are being displaced to lower quality habitats and therefore displaying reduced productivity and over-winter fawn survival.

Habitats have changed dramatically in Idaho over the past 150 years. In southern Idaho, excessive grazing, combined with fire suppression efforts, resulted in increased shrubs during the mid 1900s. In north Idaho, fires at the turn of the twentieth century converted thousands of acres of timbered forests to shrub fields. Mule deer select for, and are best adapted to, shrub dominated habitats. More recently, fire suppression efforts have resulted in tree-dominated forest communities and decadent shrub fields throughout the west (Lutz et al. 2003), including Idaho. Improved livestock grazing management has resulted in increased grasses on many western rangelands. Additionally, invasion of annual grasses and high fire frequencies have altered many shrub-steppe habitats. Many of these recent habitat changes favor elk.

Making a broad statement that elk have a competitive effect on mule deer populations is likely erroneous. Various mule deer populations throughout Idaho have fluctuated with and without elk. However, with a shrinking habitat base because of human development, it is probable that habitat changes, combined with higher elk populations, are impacting some mule deer herds in Idaho, particularly where the opportunity for exclusive use by mule deer of important habitats (e.g. winter range, fawn rearing) is limited. Even if competition with elk was known to be a factor affecting mule deer, long-term habitat changes and social acceptance for reduced elk numbers would be difficult challenges to overcome.

### Antlerless Harvest

Antlerless harvest is an important management tool used by wildlife managers to accomplish a number of management objectives: 1) increase productivity (e.g. recruitment of bucks) by decreasing population density, 2) address depredation concerns on private land, 3) provide additional hunting opportunity, and 4) increase opportunities for hunter recruitment and retention (e.g. youth hunts). The 2006 survey of Idaho mule deer hunters found a majority of deer hunters believed antlerless harvest was appropriate. However, the survey also indicated hunters needed adequate justification before accepting antlerless harvest (Sanyal et al. unpublished data).

Maintaining productive and healthy mule deer populations is a primary management objective for

IDFG. Populations managed below carrying capacity are typically characterized by high recruitment, including recruitment of bucks into the population, and low natural mortality of adults. Although the term carrying capacity is commonly used, it is nearly impossible to quantify.

The carrying capacity of the habitat changes from year to year dependent on a variety of factors. Fluctuations in climate and weather patterns, succession of plant communities, and human-induced changes to the landscape are constantly influencing carrying capacity. Estimating mule deer carrying capacity from landscape characteristics is challenging, but systematic monitoring of mule deer population characteristics can provide a reliable assessment of whether populations are nutritionally limited, and, therefore, likely to be near or at carrying capacity (Table 4, Ballard et al. 2003).

Table 5 is provided to help explain impacts of various antlerless harvest levels. The table was developed using a deterministic population model and assumes the population is below carrying capacity. Values in the table reflect the amount of antlerless harvest allowable for stable populations. Lower values (<1%) in the table result in immeasurable population impacts and allow for management flexibility such as dealing with depredations, or for providing very limited antlerless opportunity (e.g. youth hunts). Use of the table should be considered an adaptive process. As IDFG continues to monitor mule deer populations, this table will be reviewed and revised as necessary.

### Winter Feeding

Winter is a period of cold temperatures, reduced forage (availability and quality), and higher energy demands. Mule deer have evolved to survive most winters by migrating to lower elevations, reducing energy expenditures, and utilizing fat accumulated during summer and fall. However, there are occasional circumstances when emergency supplemental feed is a useful management tool (Dean et al. 2003). The Department is guided by a Commission policy on emergency feeding. The policy states IDFG does not sanction widespread supplemental feeding of big game, and that supplemental feeding is authorized only for reasons of public safety, property damage prevention, or to prevent excessive mortality that would affect recovery of the herd. While the policy does not specifically define excessive mortality, IDFG generally considers mortality rates of  $\geq 30\%$  of the adult female population, as defined by the Colorado Division of Wildlife, to be excessive (<http://wildlife.state.co.us/NR/rdonlyres/691A5DB5-565C-471E-9249-F08BB62C27E7/0/EmergencyWinterFeedingBaitingPolicy.pdf>).

**Table 4. Biological parameters and typical characteristics of a mule deer population approaching, or at, carrying capacity.**

Parameter	Characteristics	Notes
December fawn weight	Below long-term average, and declining over time	Long-term averages in Idaho: Southwest & south-central Idaho = 70-80 lbs Central Idaho = 60-70 lbs Eastern Idaho = 75-85 lbs Heise = 80-90 lbs
Fall yearling weight	Below long-term average, and declining over time	IDFG will begin developing long-term data
Adult doe annual natural mortality	>15%	Excluding harvest mortality, predator mortality a minor component of total mortality
Yearling antler length	Below long-term average, and declining over time	IDFG will begin analyzing existing long-term data
Over-winter fawn survival	Below long-term average, and declining over time	Independent of summer precipitation, and winter snow and temperature conditions
December fawn:doe ratio	Below long-term average, and declining over time	Predation not identified as a major source of juvenile mortality, independent of summer precipitation
Body condition	Below long-term average, and declining over time	Independent of summer precipitation
Doe age structure	Majority of does in older age classes	IDFG will analyze existing data, and increase monitoring efforts

**Table 5. Adult female (>1 year) harvest rates (%) that will maintain population stability for mule deer populations below carrying capacity.**

	40 Fawns:100 Does			60 Fawns:100 Does			80 Fawns:100 Does		
Over-Winter Fawn Survival	0.2	0.5	0.8	0.2	0.5	0.8	0.2	0.5	0.8
Annual adult Female Survival <sup>a</sup> (3-yr average)									
0.85	<1%	<1%	1%	<1%	1%	4%	1%	1%	9%
0.90	<1%	<1%	1%	<1%	1%	8.5%	1%	4.5%	13.5%
0.95	1%	1%	5.5%	1%	4.5%	13%	1%	9%	18%

<sup>a</sup>Excludes harvest mortality.

Since 1984, IDFG funds used for winter feeding have been generated by a \$0.75 charge added to all deer, elk, and pronghorn tags. These funds are maintained in a set-aside account only to be used for emergency winter feeding and winter range habitat improvement pursuant to Idaho Code 36-111.

Idaho Code 36-123 establishes citizen advisory committees in regions where emergency winter feeding occurs. These committees have developed criteria for determining when emergency conditions exist. Although criteria vary somewhat among regions, they are primarily based on measurable, science-based, environmental conditions such as snow depth, minimum temperatures, body condition entering winter, and winter range conditions. Additionally, the committees play an important liaison role between IDFG and local communities relative to winter feeding and the importance of maintaining quality winter ranges.

The Idaho State Department of Agriculture has developed rules, under authority granted by Idaho Code 25-207A, that prohibit the feeding of big game animals by private individuals in eastern Idaho. The rules were implemented to address concerns of potential brucellosis transmission between elk and livestock.

Artificially concentrating animals during stressful periods increases the likelihood of interspecific and intraspecific competition as well as disease transmission. Even with well planned operations and approved feed formulas, problems invariably occur when artificially feeding deer. Over the past 65 years, numerous studies have been conducted to evaluate nutritional considerations, health and stress-related problems as well as the economics of winter feeding. These include several studies conducted in Idaho and Utah (Doman and Rasmussen 1944, Pengelly 1953, Urness 1979). Intense competition at feed grounds seems to be particularly detrimental to

fawns, this segment of the population most susceptible to malnutrition.

Providing emergency supplemental feed can reduce, but not eliminate deer mortality. At the same time, one of the fundamental considerations for winter feeding, especially as a routine practice, is the artificiality of the situation created. When wildlife is treated more as a domesticated herd, even for relatively short periods of the annual cycle, it becomes easier for planners and land managers to overlook the importance of critical habitat components. A 50-acre feed site might seem a viable alternative to preserving 5,000 acres of secure native plant community if principles of wildlife management are not understood. But in the long term, important habitat needed for maintaining a truly wild and healthy population is lost to development. Supplemental feeding is generally considered by professionals as a poor substitute for quality summer and winter range. Reliance on supplemental feeding will eventually result in reduced mule deer populations.

### Mule Deer Habitat

No single factor impacts wildlife, including mule deer, more than habitat. As with all wildlife species, mule deer need adequate amounts of food, water, cover, and space throughout their lifetimes to survive. These fundamental requirements change throughout the year as mule deer use winter, summer, and transitional ranges. Positive or negative impacts to these seasonal habitats impact the distribution and abundance of mule deer, ultimately more than habitat. As with all wildlife species, mule deer need adequate amounts of food, water, cover, and space throughout their lifetimes to survive. These fundamental requirements change throughout the year as mule deer use winter, summer, and transitional ranges. Positive or negative impacts to these seasonal habitats impact the distribution and abundance of mule deer, ultimately affecting the associated recreational opportunities they provide.

Natural resource issues that diminish mule deer habitat such as wildfire and drought are common throughout the western states and impact a suite of wildlife across the landscape. Human-caused impacts to mule deer habitats can also influence their ability to sustain mule deer populations throughout the year. In Idaho, 4 primary habitat issues affecting mule deer are invasive plants, human development, wildfire, and ecological succession.

**Invasive Species.**— Dense infestations of invasive and noxious weeds have major impacts on ecological conditions that support the existence of wildlife. For example, invasive and noxious weeds displace native or desirable non-native plants and ultimately reduce wildlife

forage, alter thermal and landscape cover, change water flow and availability to wildlife, and may reduce territorial space necessary for wildlife survival. This disruptive process ultimately affects the quantity and quality of available habitat and will reduce mule deer populations.

Invasive and noxious weeds are plants that are not native to Idaho and cause harm to people and our environment. Most have come from Europe or Asia either accidentally or as ornamentals that have escaped. These plants have an advantage because the insects, diseases, and animals that would normally control them are not found locally. Because these plants have developed specialized mechanisms to survive, they are able to spread at an alarming rate.

Invasive and noxious weeds are moving into valued ecosystems and displacing native plants. The U.S. Department of Agriculture (2006) reported that “invasive and noxious weeds are expected to infest 140 million acres by 2010.” The Bureau of Land Management (BLM, 2007) estimates 4,600 acres of federal land in the West are lost each day to weed infestation.

To combat invasive plant species, strategies have been developed from information gathered by agency personnel, private landowners, surveys, interviews and from analyses of existing information. General management priorities on critical mule deer ranges include: 1) prevent establishment of potential invaders; 2) characterize new invaders; 3) reduce spread of weeds by treating transportation corridors and areas of concentrated activities, such as roads, trails, campgrounds, trailheads, parking lots, and gravel pits and satellite infestations of established invaders; 4) contain locally established invaders; 5) reduce density or slow spread of widespread established invaders; 6) map current noxious weed infestations; and 7) monitor sites for effectiveness of control actions.

The State of Idaho has adopted the Integrated Weed Management System (IWMS, <http://www.agri.idaho.gov/Categories/PlantsInsects/NoxiousWeeds/Documents/costshare/CostShareHandbook6/Exhibit%206%20Strat%20Plan.pdf>). The program is, “a system for the planning and implementation of selected methods of management for preventing, containing or controlling undesirable plant species or group of species using all available strategies and techniques.”

**Ecological Succession.**— Mule deer tend to be most productive in habitats that are in early to mid-seral stages. Evidence suggests that this is due to associated vegetation diversity and availability of high quality forage. The challenge is that nature is dynamic and communities do not remain in a single successional state. Thus, ability of a landscape to support deer varies with these changes

in habitat.

Deer diets vary seasonally and annually due to nutritional demands, plant phenology, and weather patterns. Herbaceous plants are very important because of their digestibility and nutrient content. Forbs however, are not always available and so shrubs become an important component of mule deer diets. Woody browse is used year-round by mule deer, but becomes critical when other forages are not available, particularly during winter. Shrubs are most common in early successional habitats. Overall plant diversity is also higher in recently disturbed areas.

Typically most of the edible biomass in late successional or climax forest systems is out of reach of terrestrial grazers, with trees using most of the available resources. In mature coniferous forests of the Rocky Mountains, >99% of total aboveground vegetation biomass may be tied up in trees, with <10% of this biomass in foliage that is largely inaccessible and unpalatable to deer (Wallmo 1981). Shrubs and herbaceous plants make up <1% of the total vegetation biomass in these late-seral systems (Wallmo et al. 1972, Gary 1974, Landis and Mogren 1975).

Forage supply for ruminant grazers is inversely related to the amount of tree overstory in forested habitats (Ffolliott and Clary 1972). In general, managing habitats for early to mid-seral states will prove most beneficial to mule deer. Exceptions to this might be on certain winter ranges where shrubs can take much longer to regenerate. Disturbance is crucial to maintaining high quality deer habitat. Traditionally, different fire cycles and human disturbance, such as logging, resulted in higher deer densities than occur in many areas today. In the short-term, weather patterns, especially precipitation, drive deer populations, but landscape-scale habitat changes will impact long-term deer trends.

**Human Development.**— Another primary issue impacting mule deer habitat is human development. Development can include construction associated with residential, commercial, agricultural, energy, infrastructure, and other human activities.

The U.S. Census Bureau reported that Idaho is the third fastest growing state in the union. The total population of Idaho increased 2.4 percent between 2004 and 2005. A Geographic Information System-based analysis of human population growth in Idaho was recently completed using census data and a projected housing density model was developed by D. Theobald of Colorado State University. This analysis indicated recent human population growth (2000 to 2004) has not been uniformly distributed across the state. Instead, recent growth has occurred primarily in distinct portions

of Idaho: greater Boise area, Teton Valley, greater Coeur d'Alene area, Magic Valley/Blaine County, and Bear Lake area (Figure 1). Similarly, housing density projections through the year 2030 indicate that most future human settlement will be clustered in several general areas of the state: greater Coeur d'Alene area, Palouse area, greater Boise area, Magic Valley/Blaine County, and eastern Snake River Plain/Teton Valley areas (Figure 2).

Several of the growth "hot spots" identified above are also portions of the state where important mule deer summer and winter habitats occur. As a result, mule deer populations that have already been adversely affected by past and current development are further threatened by predicted rapid human population expansion and associated development. Alternatively, there are portions of the state where the human population is stable or declining and where these trends are predicted to continue. Although mule deer habitats and populations are not completely secure in these areas, it appears that other factors will be more important in terms of mule deer management than development-related impacts.

Concomitant with human population growth, Idaho has experienced increased road construction and deer-vehicle collisions. Approximately 575 and 750 deer-vehicle collisions occurred in 2005 and 2006 (G. Burak, IDFG, unpublished data). Roads also fragment habitats and migration corridors and can alter deer seasonal migrations; reducing the potential of habitats to support healthy deer populations.

**Wildfire.**— Wildfire was a major ecological force that helped maintain historical plant communities, and today, few factors play as critical a role in mule deer habitat condition and health as wildfire. Historically, wildfires helped maintain a mosaic of plant communities (and successional stages within communities) across the landscape. However, current wildfire frequencies have departed significantly from historical regimes throughout many of the plant communities occupied by mule deer (USDI 2004). In general, current wildfire return intervals are too frequent in low elevation shrub-steppe communities and too infrequent in mid-to upper elevation shrub and aspen/conifer communities.

Shrub-steppe communities are a crucial component of mule deer habitat in Idaho. Historically, wildfires in low elevation sagebrush (*Artemisia* spp.)-steppe were small and patchy resulting in a mosaic of burned, recovering, and unburned lands (Howard 2002). The fire return interval in these communities was 60-110 years (85 years midrange; Whisenant 1990, Peters and Bunting 1994). In contrast, historical wildfires in mid-elevation shrub-steppe were of variable intensity and size and more frequent (10-25 years, 18 year midrange; Houston 1973, Harniss and Murray 1973). By the mid

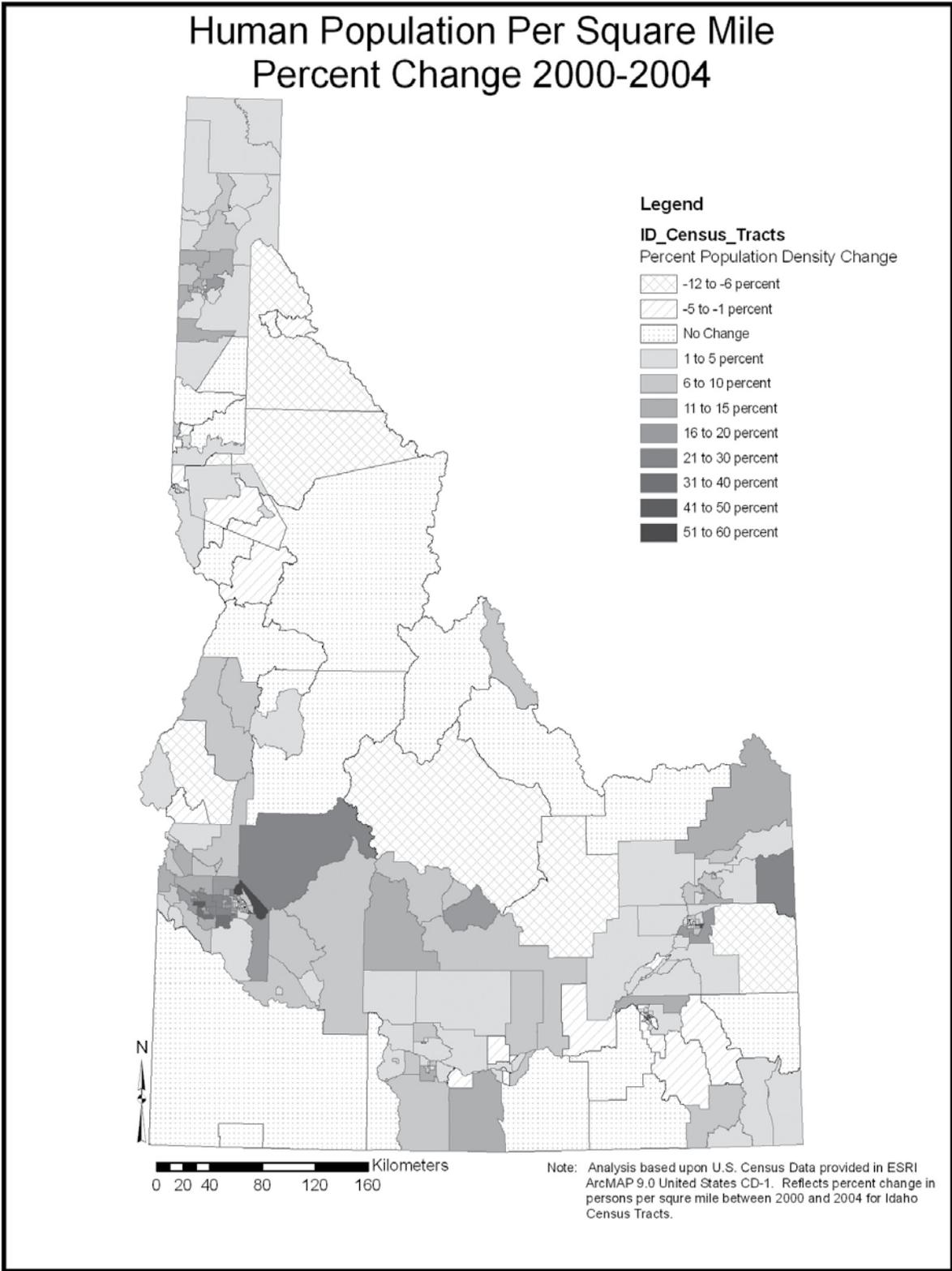


Figure 1. Percent change in human population by census block, Idaho, 2000–2004.

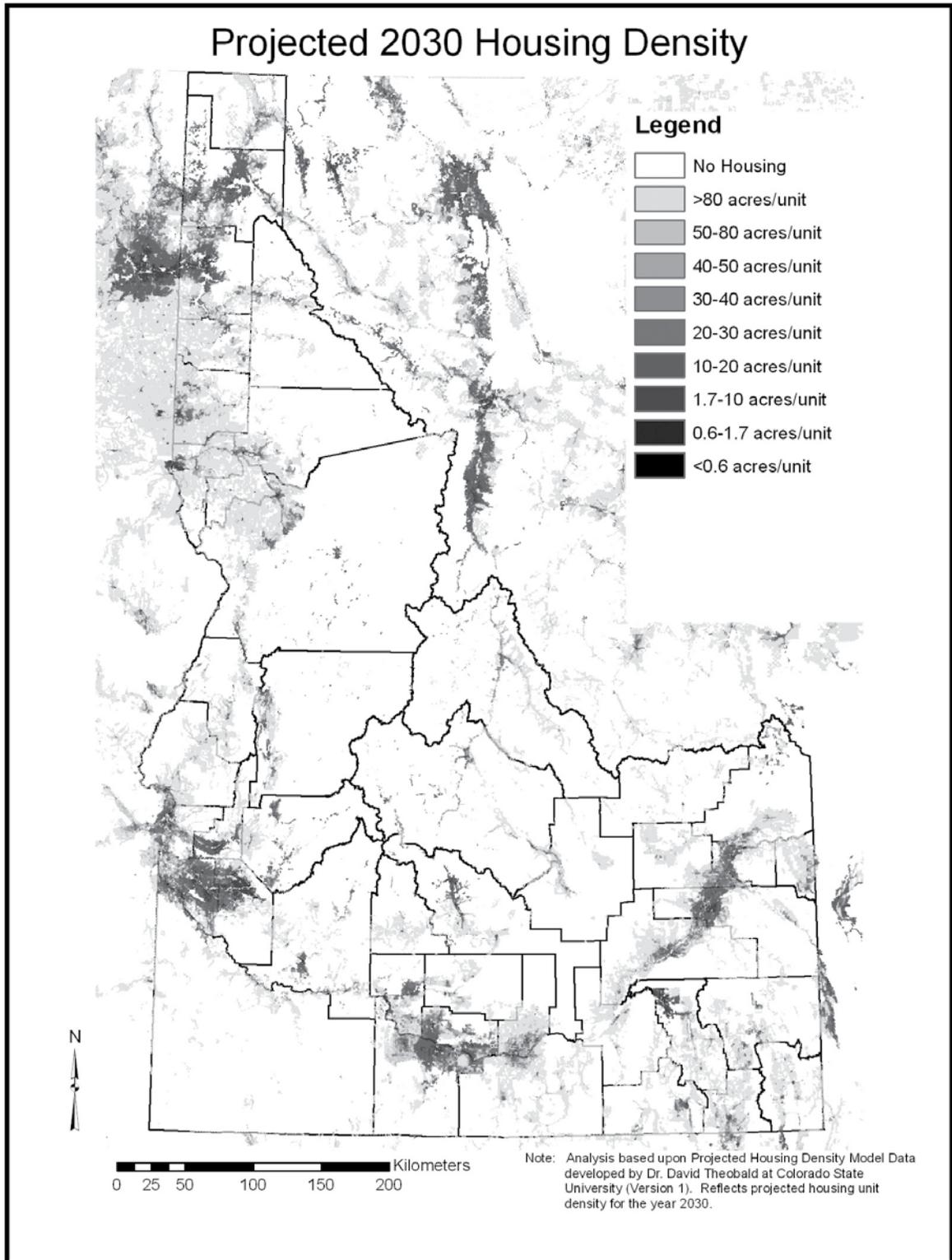


Figure 2. Projected housing unit density, Idaho, 2030.

## Population Monitoring

1900s, the combination of wildfire suppression and land use resulted in a trend toward monotypic stands of woody plants (such as sagebrush and rabbitbrush [*Chrysothamnus* spp.]) and the loss of important herbaceous understory vegetation. These factors, combined with the introduction and invasion of exotic annual grasses, has resulted in a current trend toward larger and more frequent wildfires in low elevation sagebrush-steppe communities (USDI 2004). Over the last several decades, >1 million acres of low elevation sagebrush-steppe in southern Idaho has been affected by wildfire. Fire return intervals in mid-elevation shrub communities also have departed from historic levels. Fires are now less frequent, increasing the potential for large, contiguous, stand-replacing events (USDI 2004).

In southern Idaho, shrub-steppe communities provide important summer and winter habitat and transition range for mule deer. The vast majority of mule deer winter habitat as mapped by IDFG occurs in shrub-steppe communities (IDFG, unpublished data). The aforementioned loss of low elevation sagebrush-steppe communities has had a considerable effect on mule deer habitats throughout southern Idaho. For example, 37 named fires have burned in the approximately 91,000-acre Stone Winter Range (GMU 56) since 1978. These fires have affected a combined total of approximately 97,500 acres, and approximately 38,740 acres (42% of winter range area) have burned at least twice during that 30-year period. The loss of low elevation sagebrush-steppe, coupled with the increased potential for large-scale wildfire in mid-elevation shrub communities, poses a significant threat to mule deer across southern Idaho.

Aspen/conifer communities provide important seasonal cover (security, fawning, and thermal) and forage resources for mule deer in Idaho. Under normal circumstances, aspen-dominated patches are often scattered throughout larger conifer-dominated stands, and conifer encroachment is a natural process within aspen stands. However, aspen is well adapted to fire and other disturbances and aspen-dominated stands were historically maintained through these processes (Jones and DeByle 1985). Historical fire frequencies in aspen/conifer communities ranged from 25 to 100 years (midrange 63 years) with a mixed pattern of severity (USDI 2004). Fires are currently much less frequent ( $\geq 100$  years), increasing the potential for landscape-scale events (Tausch et al. 1981, Miller and Rose 1999, USDI 2004). The use of targeted mechanical and prescribed fire treatments in aspen communities subject to conifer encroachment can help improve stand conditions and increase the extent of aspen dominated communities throughout the range of mule deer in Idaho.

Management decisions can be best made where information is available on population size, recruitment, over-winter fawn survival, and adult female survival (White and Bartmann 1998). The Department relies heavily on aerial surveys to monitor mule deer populations. Prior to the 1980s, winter surveys were primarily conducted in key drainages annually to determine population trend and collect composition data. Later, surveys were conducted attempting to estimate total numbers of deer in certain game management units every few years. Because not all animals are observed during aerial surveys (Caughley 1974), IDFG developed a "sightability model" that corrects for those deer not observed (Unsworth et. al. 1994). Beginning in the mid-1990s, annual aerial surveys, using the "sightability model," were conducted on 28 discrete winter ranges across southern Idaho. These winter range surveys provided reliable information on population composition, but were inadequate for determining overall abundance. Additionally, limiting monitoring to these winter ranges failed to detect potential changes occurring on the many smaller or peripheral winter ranges throughout Idaho.

A key factor affecting annual mule deer population change is over-winter fawn survival (Unsworth et. al. 1999), which can vary considerably from year to year. Beginning in 1998, IDFG began monitoring over-winter fawn survival by radio-marking approximately 250 fawns annually. This fawn monitoring program allows IDFG to rapidly detect major winter die-offs, and respond with appropriate management actions.

In 2005, IDFG began monitoring adult doe survival in select units, primarily in conjunction with research efforts on effects of wolf recovery on ungulate survival. Periodic population estimates combined with data on recruitment, over-winter fawn survival, and adult female survival allows wildlife managers to model populations annually, without the need for annual aerial surveys.

In the future, it will be essential to continued development of a monitoring program for mule deer that is less dependent on aerial surveys. The cost of helicopter rentals continues to escalate and availability of suitable helicopters and experienced pilots is declining. This plan implements a new monitoring program that incorporates tools designed to help reduce reliance on aerial surveys.

## Habitat Monitoring

Plant communities and the soil that supports them form the foundation upon which wildlife diversity and health of game populations are based. Plant communities

provide food and cover necessary for survival and reproduction. Plant communities are not static; they change over time in response to climatic conditions, land uses, and management practices. Range and wildlife managers must be aware of, and responsive to, changes in the ecosystems being managed. Effective habitat management requires an understanding of ecosystem processes and knowledge of current conditions and trends.

The primary benefit of habitat monitoring is to understand ecological responses to land management practices, document current condition of critical habitats, and evaluate ecological changes over time. Such information can provide impetus to land managers to develop and implement appropriate land management strategies and actions to benefit mule deer.

Vegetation monitoring protocols are utilized by land management agencies such as the USFS and BLM. However, these protocols were developed primarily for domestic animals such as cattle and sheep, and thus, the data recorded do not accurately measure habitat characteristics valued by most wildlife species, including mule deer. In addition, these data are not collected in areas known to be important seasonal ranges. Rather, they are collected in small samples across management zones specifically created for livestock. When rare plant issues become elevated and receive special funding, these same federal agencies often contract with the Conservation Data Center to perform ecological site evaluations and plant community studies for various habitats across Idaho. These studies have produced excellent baseline information that will be valuable for future monitoring opportunities.

In the past, IDFG personnel conducted browse surveys and collected other vegetation information to determine habitat use on mule deer ranges. These efforts were subsequently discontinued due to changes in IDFG priorities, lack of consistency, and other problems. The current emphasis is to count mule deer on winter range and measure survival rates across different population management units. Through computer modeling, deer population trends are predicted for different portions of the state. For the habitat program, the current emphasis is towards implementing projects to restore or improve habitat. Monitoring is typically short-term and intended to determine the level of success of individual restoration efforts. Noxious weed inventory and mapping on WMAs has become more sophisticated and will provide useful long-term monitoring data for important big game ranges. Neighboring state fish and game agencies that implement habitat monitoring programs include Wyoming (D. Stroud, Wyoming Game and Fish Department, personal communication) and Utah

(Davis, Utah Division of Wildlife Resources, personal communication) The Department is considering the merits of those programs and whether or not to adopt some of those procedures in Idaho. This is a significant commitment and will be considered carefully.

## Agriculture and Livestock

Agricultural practices and livestock management have evolved over time and managers have become more cognizant of maintaining healthy soil, water, and wildlife. Properly working farms and ranches can provide valuable wildlife habitat, and are generally preferred to some other forms of human land use for sustaining mule deer. Mule deer require open space and suitable habitat. Similarly, sustainable agriculture requires open space, fertile soils, and healthy rangeland. As traditional Idaho farms and ranches are sold, subdivided, and developed, mule deer habitat is lost forever.

Mule deer populations have benefited, and in some cases been negatively impacted, by agricultural activity. In many cases, crops themselves or associated irrigation systems have benefited mule deer. Standing crops as well as waste grain and hay stubble are used by mule deer, particularly during drought conditions. Early growth of winter wheat is at times heavily used by mule deer on transition and wintering areas. Conversely, some farming practices have converted native winter range into habitats of limited value to mule deer.

Since the late 1980s, the Conservation Reserve Program (CRP) has taken many acres out of agricultural production. Conversion to forbs, grasses, and some woody species has undoubtedly benefited mule deer. Over the past 20 years, some of these parcels have reverted to homogeneous stands of less productive grasses.

Irrigation systems such as diversions and storage reservoirs can de-water natural riparian areas or create barriers to migration corridors. The elimination of small riparian areas or seasonally dewatering stream reaches can significantly reduce habitat, especially for fawning. Smaller stock water impoundments can provide free water for mule deer during drier months.

Several research efforts have investigated potential competition for forage between livestock and mule deer. There is generally less foraging overlap between mule deer and cattle than between elk and cattle (Torstenson et al. 2006). However, heavy livestock grazing can significantly reduce forage and cover available to mule deer on summer and transition range, particularly during low precipitation years. Forage competition is more likely to occur with domestic browsers such as sheep and goats.

Skovlin et al. (1968) found that both elk and deer use of pastures decreased with increased use by cattle. However, cattle grazing is used by some wildlife management agencies (e.g. Montana Fish, Wildlife, and Parks) to improve plant vigor and increase habitat capacity on elk winter ranges.

Competition for space is another consideration that has been studied both spatially and temporally (Skovlin et al. 1968, Dusek 1975, Austin and Urness 1986, Peek and Krausman 1996, Coe et al. 2001, Stewart et al. 2002, Coe et al. 2004). During certain critical periods, the presence of domestic livestock and associated human activity may have an impact on mule deer use of habitat.

Some fencing systems can result in hazards or even barriers to movements. Wire fences that are poorly designed for wildlife can actually trap mule deer, causing direct mortality or debilitating injury. Woven wire fences can create nearly impassable barriers (Schmidt and Gilbert 1978). Even some configurations of rail fences are barriers that can disrupt passage. Guidelines for wildlife friendly fencing are available (BLM 1985, Wyoming Game and Fish Department 2004).

In summary, agriculture practices and livestock grazing are neither inherently beneficial nor detrimental to mule deer. Impacts to deer are determined more by how farming and ranching is conducted, and how the specific mule deer population uses the landscape.

## The Mule Deer Initiative

The Mule Deer Initiative (MDI) is an adaptive management program with a holistic focus on mule deer. The MDI has 3 basic goals: 1) increase mule deer numbers, 2) increase mule deer hunter satisfaction, and 3) protect and improve mule deer habitat. To meet these goals, IDFG developed an action plan that addresses 6 key elements currently affecting mule deer management: 1) habitat management, 2) population management, 3) predator management, 4) communication/public involvement, 5) enforcement, and 6) access. The MDI Action Plan can be viewed on the IDFG website at [http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer\\_draft.pdf](http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf).

The MDI is designed to focus management efforts in a specific geographic area in southeastern Idaho to maximize potential for success. This area was known for great mule deer hunting in the past, but has been slow to recover since population declines in the early 1990s. The MDI core area currently includes GMUs 56, 57, 66, 66A, 69, 70, 71, 72, 73, 73A, 74, 75, 76, 77, and 78. The overall strategy is to implement on-the-ground projects designed to improve the mule deer hunting experience.

Monitoring will be conducted to assess relative effects of various projects, and those projects found to be successful will be implemented elsewhere in Idaho.

Although the geographic scope of the MDI is limited, the benefits will be shared throughout Idaho. The overarching goal is to increase our knowledge and management capabilities of mule deer habitat and populations statewide. The MDI was the primary catalyst for revising the Idaho Mule Deer Management Plan. The Idaho Mule Deer Management Plan is now the umbrella under which MDI exists in southeastern Idaho.

## Biological Investigations

Biological investigations are conducted to provide wildlife managers with improved knowledge and tools for managing mule deer populations. Recent investigations have included estimating fawn and adult female survival rates and examining cause-specific mortality (Scott et al. 2006, Zager et al. 2007), and evaluating effects of predator management on mule deer populations (Hurley and Zager 2007, Hurley et al. unpublished data).

Research efforts have also provided data on seasonal movement patterns of mule deer populations to help define populations and protect habitat. The current, ongoing Statewide Ungulate Ecology project is a long-term effort designed to measure population performance, effects of predation, and effects of habitat and nutrition on mule deer and elk populations (Zager et al. 2007).

Implementation of the revised population monitoring protocol will require continued assessment of mule deer survival rates. While mule deer populations will be censused at least once every 5 years, annual estimates of fawn and adult female survival are necessary to estimate populations in non-survey years. Samples of fawns and adult does will be radio-monitored annually in each Population Management Unit (PMU) to provide seasonal survival estimates.

Future investigations may examine the influence of mule deer hunting season length and timing on buck survival. Predicting the outcome of management decisions is often difficult due to complex interactions of season structure, road and trail density, weather conditions, and landscape characteristics. Research efforts will be designed to improve understanding of what factors affect buck survival during hunting seasons so that appropriate management tools can be applied with predicted outcomes.

Habitat is the key factor influencing the reproductive performance and overall health of mule deer populations. Research to examine links between habitat characteristics

and population parameters would provide a basis for making landscape-scale decisions to benefit mule deer populations and their habitat. Habitat change through natural succession or catastrophic stand replacement continues to occur across Idaho's mule deer ranges. Habitat loss, fire suppression, invasive plants, and conifer encroachment into aspen stands are examples of habitat change that can negatively affect mule deer populations. A better understanding how habitat changes affect mule deer populations would allow IDFG to prioritize management efforts to provide the greatest benefit to mule deer. Wildlife research provides the foundation upon which management decisions are made and will remain an integral part of Idaho's mule deer management program.

## Depredation

Mule deer can create depredation concerns when foraging on agricultural crops or rangeland vegetation. These situations can occur due to overabundant deer populations, drought conditions, or in areas where cropland is adjacent to deer habitat. Idaho Code 36-1108 identifies statutory requirements that must be met and appropriate actions IDFG must take to address depredation situations.

The Department has Landowner/Sportsmen Coordinators located in each of the 7 regions to assist with addressing depredations. They coordinate with conservation officers and private landowners to alleviate, and where possible, eliminate damages caused by deer. Hazing, permanent fencing, depredation hunts, kill permits, continued use agreements, and perpetual easements are just some of the tools incorporated into depredation management strategies.

## Illegal Harvest and Commercialization

Illegal harvest and commercialization of mule deer result in lost opportunities for wildlife enthusiasts and hunters. Research suggests that illegal harvest may be 1-3 times that of legal harvest (Vilkitis 1968). This level of exploitation, along with commercialization of mature bucks, highlights the need for innovative enforcement and management efforts. Preventive measures, focused enforcement, and reduced commercial opportunities could increase legally harvestable deer numbers.

As an ever increasing monetary value is placed on fish and wildlife resources, the incentive to violate will increase as well. A quick search of the internet for "mule deer" results in a list of hundreds of antlers and deer parts for sale, with new lists turning over every few days. Antler buyers, taxidermist, wildlife artists,

"trophy collectors", and sports stores are but a few of those involved in the commercialization of wildlife. If this commercialization was confined to legally harvested animals or shed antlers, there would not be a problem.

Currently, there are few regulations requiring those dealing in wildlife parts to demonstrate that they were legally obtained. The impacts of the world trade in ivory or rhinoceros (*Diceros bicornis* and *Ceratotherium simum*) horn on elephant (*Loxodonta africana*) and rhinoceros population exemplify the negative impact that illegal harvest can have on a population. Currently, Idaho has a restriction on the sale of "picked up" bighorn sheep horns to reduce trafficking in illegally taken animals. However, no such protection exists in Idaho for other species.

In the U.S., the trade in wildlife and wildlife products has grown substantially. The U.S. Fish and Wildlife Service (USFWS) estimated a 62% increase in the wildlife trade from 1992-2003 (USFWS 2005). Investigating illegal trafficking in wildlife most often involves covert operations and lengthy periods of investigations. Department conservation officers and USFWS special agents involved in covert operations have successfully investigated numerous cases of illegal trafficking in wildlife parts. Dick Smith, former Deputy of the USFWS, ranks wildlife and wildlife parts as the world's third most lucrative illegal contraband (Roberts 1996).

Very large-antlered mule deer may be the most difficult of the North American game animals to obtain today due to the relatively low numbers and high commercial value of those remaining. Management efforts to maintain and improve populations, along with enforcement efforts to protect those populations, are necessary to provide the public with legally harvestable numbers of mule deer. Resource allocations of money and manpower combined with regulations to reduce the ease of illegal commercialization will help reduce increasing pressure on Idaho's wildlife resources. Protecting the public's legal use of Idaho wildlife is a primary objective for IDFG.

## Interagency Coordination

Nearly 70% of Idaho is comprised of lands administered by state and federal government agencies while the remaining 30% is private property. Interagency coordination and consultation with private entities and local governments have important long-term implications for mule deer populations and habitat throughout Idaho. The Department's ability to provide land management agencies, county planners, and private landowners with accurate, science-based information, coupled with practical and timely technical review of land-use proposals, is a key element of interagency and

organization coordination.

The Department's opportunities to improve interagency and organization coordination fall within 2 broad categories: long-term, landscape scale land-use planning, and short-term, site-specific, project-level implementation. Land-use planning efforts, such as Forest Plan and Resource Management Plan revisions, travel planning, and county comprehensive planning, afford IDFG opportunities to assist federal, state, and local governments in developing long-term management plans that balance natural resource use with resource conservation. Department involvement in site-specific, project-level implementation, including rangeland and timber management projects; special-use permitting; and industrial, commercial, and residential development, provide avenues to implement strategies which protect important resources, improve resource conditions, minimize resource impacts, and mitigate unavoidable effects.

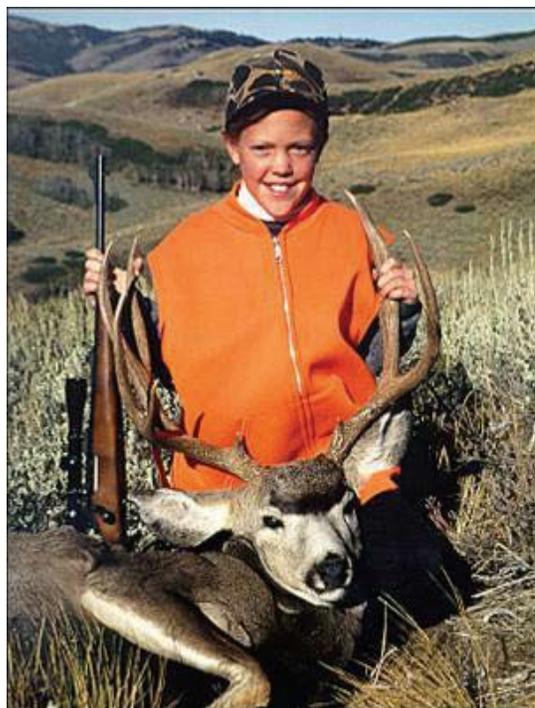
### Public Understanding of Mule Deer Management

A critical component of wildlife resource management is ensuring the public is provided information. There are numerous programs implemented by IDFG on a continual basis that are part of the mule deer management process. Programs include habitat improvement measures, predator control activities, population surveys, and use of working groups/committees designed to address issues affecting mule

deer in Idaho (Winter Feeding Advisory Committees, Road Mortality Working Groups, Aspen Working Group, etc.). Information about these programs must be readily available to hunters and any other parties interested in understanding the management of mule deer in Idaho through the use of both traditional and innovative communication/outreach methods. The Department uses newsletters, public meetings, workshops, radio, television, newspapers, internet, and other communication tools to share information with stakeholders. However, the way society receives information is changing, and will continue to change. The Department will keep up with evolving media formats and communications strategies.

### Citizen Involvement and Outreach

Mule deer and other wildlife are property of the state to be managed for the benefit of Idaho residents. The IDFG strategic plan states the following vision: "The Idaho Department of Fish and Game shall work with the citizens of Idaho in providing abundant, diverse fish and wildlife and ensuring a rich outdoor heritage for all generations." In developing management programs, it is imperative IDFG understands the expectations and desires of mule deer enthusiasts. How IDFG engages public involvement is guided by a "Regulatory and Public Involvement Process" policy approved by the IFGC in 2006. The Department provides a variety of opportunities for public involvement including public meetings; mail, telephone, and web-based surveys; news media; task groups; and workshops.



## STATEWIDE MANAGEMENT DIRECTION

Statewide mule deer management direction (Table 6) was tiered down from the IDFG strategic plan (The Compass) and provides higher resolution for management objectives taking into account stakeholder desires, agency resources, and resource

opportunities and challenges that exist in Idaho. Table 7 assigns performance targets and strategies to specific management directions. These targets and strategies will form the foundation for future annual work plans, performance evaluations, and budget requests.

**Table 6. Department strategic plan objectives and corresponding mule deer management direction.**

Compass objective	Mule deer management direction
Maintain or improve game populations to meet the demand for hunting, fishing, and trapping	Implement a mule deer monitoring program that provides annual estimates of population abundance
	Manage mule deer populations commensurate with habitat capabilities to maximize reproductive performance and overall herd health
	Implement biological investigations to improve population and habitat management capabilities
	Reduce illegal harvest and commercialization of unlawfully taken mule deer
	Manage winter ranges to minimize the negative effects of disturbance to mule deer and reduce illegal harvest
	Implement proactive measures to reduce and minimize mule deer depredations
Increase the capacity of habitat to support fish and wildlife	Improve key winter, summer and transitional habitats on public and private lands that provide for mule deer populations that meet or exceed statewide objectives
	Evaluate a cost-effective and reliable habitat monitoring protocol
	Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts
	Increase IDFG involvement in short-term, site-specific, project review and implementation
Eliminate the impacts of fish and wildlife diseases on fish and wildlife populations, livestock, and humans	Minimize the influence of disease as a limiting factor in mule deer populations
Maintain a diversity of fishing, hunting, and trapping opportunities	Provide mule deer hunting opportunities that reflect the preferences and desires of hunters
Sustain fish and wildlife recreation on public land	Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives
Increase the variety and distribution of access to private land for fish and wildlife recreation	Maintain, improve, and/or manage access to hunting areas
Maintain broad public support for fish and wildlife recreation and management	Emphasize the recruitment and retention of mule deer hunters
Improve citizen involvement in the decision-making process	Increase citizen involvement in mule deer management
Increase public knowledge and understanding of Idaho's fish and wildlife	Increase public understanding of mule deer ecology and management
Improve funding to meet the legal mandates and public expectations	Seek new sources of funding for mule deer management efforts
Increase opportunities for wildlife viewing and appreciation	Increase opportunities for mule deer observation, photography, and other nonconsumptive uses of mule deer

**Table 7. Compass objective, statewide mule deer management direction, performance targets, and strategies.**

Management Direction	Performance Targets	Strategies
<b>Compass objective: Maintain or improve game populations to meet the demand for hunting, fishing, and trapping</b>		
<p>Implement a mule deer monitoring program that provides annual estimates of population abundance</p> <p>POP<sup>a</sup></p>	<p>Develop an annual assessment for each PMU of population status, over-winter fawn survival, adult doe survival, pre-winter fawn/doe ratios, post-season buck/doe ratios, body condition, and adult doe age structure</p>	<p>Estimate mule deer abundance at the PMU level every 3-5 years using the aerial sightability model</p> <p>Collect annual biological data on condition, recruitment, survival, and sex and age structure</p> <p>Use population models to estimate population status and trend in years when sightability estimates are not available</p> <p>Establish long- and short-term numerical population objectives that represent maintenance of, or increase in, current mule deer populations</p>
<p>Manage mule deer populations commensurate with habitat capabilities to maximize reproductive performance and overall herd health</p> <p>POP</p>	<p>Maintain fawn/doe ratios at or above long-term averages</p> <p>Maintain natural adult doe annual mortality at &lt;15%</p> <p>Maintain yearling buck antler growth rates at or above long-term average</p> <p>Maintain over-winter fawn survival at or above long-term average</p> <p>Increase deer populations within the MDI emphasis area so the average number of deer in 2005–2014 is 40% higher than the average during 1995-2004</p> <p>Achieve objectives of the MDI Action Plan (<a href="http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf">http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf</a>)</p>	<p>Manage populations below the maximum carrying capacity of the habitat to ensure optimal herd condition and no long-term degradation of habitat</p> <p>Use antlerless harvest as a management tool to achieve population goals and provide hunting opportunity</p> <p>Utilize an antlerless harvest decision process that considers habitat condition, population reproductive performance, survival, physiological condition, and population objectives</p>
<p>Manage mule deer populations commensurate with habitat capabilities to maximize reproductive performance and overall herd health</p> <p>POP</p>	<p>Increase mountain lion harvest for 1-3 years following significant decline in mule deer populations</p> <p>Harvest &gt;70% of coyotes annually in specific focal areas (e.g., winter and fawn rearing ranges)</p> <p>Develop a statewide map of crucial mule deer winter ranges where elk could be a competitive concern by Jan 2009</p> <p>Maintain elk densities at &lt;1 elk/mi<sup>2</sup> in crucial mule deer winter range</p>	<p>Implement predator management activities where mule deer populations are not meeting objectives and predation is identified as a major source of mortality</p> <p>Direct use of Animal Damage Control Funds to manage predators in priority areas</p> <p>Encourage hunter-harvest of predators through news releases, articles, and the website</p> <p>Minimize potential competition between elk and mule deer populations</p> <p>Work with hunters to identify areas where elk populations will be managed to benefit mule deer</p> <p>Focus increased harvest on elk populations in areas crucial to mule deer</p>

continued

Management Direction	Performance Targets	Strategies
<p>Manage mule deer populations commensurate with habitat capabilities to maximize reproductive performance and overall herd health (continued)</p> <p>POP</p>	<p>Implement emergency winter feeding only when consistent with Commission policy</p> <p>Complete revision of emergency feeding criteria and guidelines by Jan 2009</p> <p>Number of mule deer fed annually below 1997-2006 average</p>	<p>Utilize Regional Winter Feeding Advisory Committees to promote quality winter range</p> <p>Review and revise existing emergency winter feeding criteria to ensure consistency with Commission policy</p> <p>Implement emergency winter feeding only when necessary to 1) protect private property, 2) alleviate a public safety issue, or 3) prevent excessive mortality (&gt;30% adult doe mortality)</p>
<p>Implement biological investigations to improve population and habitat management capabilities</p> <p>POP/HAB</p>	<p>Ability to reliably predict buck harvest rates based on landscape characteristics and hunting season framework</p> <p>Ability to link landscape characteristics to mule deer population parameters</p> <p>Understanding of how major habitat changes affect mule deer populations</p> <p>Ability to determine when, where, and how elk competition potentially limit mule deer</p>	<p>Determine the effect of season timing and length on buck survival</p> <p>Evaluate the effects of antler point restrictions on buck survival</p> <p>Determine how statewide changes in habitat (i.e., invasive plants, fire frequency, etc.) influence mule deer population dynamics</p> <p>Continue research on competition between elk and mule deer</p>



Management Direction	Performance Targets	Strategies
<p>Reduce illegal harvest and commercialization of unlawfully taken mule deer</p> <p>ENF</p>	<p>Increase the number of mule deer violations detected by 30%</p> <p>Increase budget for enforcement by 10%</p> <p>Increase mule deer related enforcement efforts by 10%</p> <p>Develop and provide training materials about wildlife commercialization to other law enforcement agencies by Sep 2008</p> <p>Increase use of Citizens Against Poaching Hotline by &gt;25% by 2017</p> <p>Increase number of volunteers assisting enforcement by 10% by 2012</p>	<p>Increase targeted enforcement activities</p> <p>Increase enforcement personnel</p> <p>Expand the Special Investigations Unit</p> <p>Monitor harvest of large-antlered mule deer on winter ranges</p> <p>Increase use of electronic surveillance equipment</p> <p>Increase efforts, including internet monitoring, to detect illegal wildlife trafficking</p> <p>Increase awareness of other law enforcement agencies in wildlife commercialization issues</p> <p>Meet with IOGLB annually to collaborate on enforcement issues</p> <p>Broaden IDFG's authority to administer, license, monitor and inspect taxidermists, meat cutters and others involved in the handling and processing of mule deer meat and parts</p> <p>Evaluate implementing rules that only allow possession of naturally shed antlers (i.e., no intact skull plates)</p> <p>Promote citizen involvement, including increased use of volunteers and watch groups, in enforcement issues</p> <p>Publicize the value of illegal harvest and the losses to hunting and viewing opportunities</p> <p>Use local media, IDFG's website and publications, and Idaho Game Warden magazine to improve the public's knowledge of wildlife enforcement issues</p> <p>Explore non-traditional citizen reporting of violations (i.e., websites) and increase rewards offered the public's knowledge of wildlife enforcement issues</p>



Management Direction	Performance Targets	Strategies
<p>Manage winter ranges to minimize the negative effects of disturbance to mule deer and reduce illegal harvest</p> <p>ENF/HAB/POP</p>	<p>Develop plans to monitor human activities on important winter ranges by Dec 2008</p> <p>Increase monitoring activities in priority areas by 10% by May 2009</p> <p>Develop proposals for managing winter range access where necessary by May 2010</p>	<p>Decrease negative effects of disturbance during winter on overall health and survival of mule deer populations</p> <p>Utilize volunteers (e.g., Adopt-A-Winter-Range) to monitor use and identify problems on selected winter ranges</p> <p>Increase use of electronics and remote sensing technology to monitor human activities on winter ranges</p> <p>Work with land management agencies to manage human activities on winter ranges</p> <p>Improve signing and publicity of winter range issues</p>
<p>Implement proactive measures to reduce and minimize mule deer depredations</p> <p>POP/COM</p>	<p>Reduce damage claims below the 2002-2007 average</p> <p>Provide educational materials explaining the role of sportsmen in depredation issues and landowner relations by Sep 2009</p>	<p>Work with county commissions to minimize depredations and mitigate for new developments in mule deer habitat</p> <p>Distribute brochures informing landowners how to avoid damage</p> <p>Emphasize use of permanent solutions (e.g., stackyards and depredation release agreements)</p> <p>Use targeted antlerless harvest to remove deer causing depredation problems</p> <p>Whenever possible, allow youth hunters, hunters with disabilities, or veterans to harvest depredating deer</p> <p>Inform sportsmen of their role in reducing depredation problems and the importance of maintaining positive relationships with landowners</p> <p>Investigate use of easements associated with new development as mitigation for loss of habitat</p>



Management Direction	Performance Targets	Strategies
<b>Compass Objective: Increase the capacity of habitat to support fish and wildlife</b>		
<p>Improve key winter, summer, and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB/POP/NRP</p>	<p>Directly enhance 10,000 acres of mule deer habitat on public and private lands annually</p> <p>Establish 30,000 acres of forb strips and 2,000,000 shrub seedlings in at least 500 different locations within the MDI emphasis area by 2014</p> <p>Work with conservation organizations, elected officials, and private landowners to provide long-term conservation measures for 30,000 acres of important mule deer habitat by 2014</p> <p>Develop a prioritized list of properties and projects for protection, restoration, or enhancement of mule deer habitat in each region by Jan 2010 then updated annually</p> <p>Contact 50 landowners annually regarding potential habitat improvement practices to benefit mule deer on their private land</p> <p>Develop mitigation guidelines for adverse impacts to mule deer by Jan 2010</p> <p>Adopt WAFWA Mule Deer Working Group habitat guidelines</p> <p>Achieve objectives of the MDI Action Plan (see MDI Action Plan at <a href="http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf">http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf</a>.)</p>	<p>Assess and prioritize habitats for protection, restoration, or enhancement</p> <p>As opportunities arise, acquire interest in property where IDFG management can provide exceptional benefits to mule deer and associated recreation</p> <p>Work with land management agencies to identify key mule deer habitats for rehabilitation efforts following wildfires</p> <p>Disseminate the WAFWA mule deer habitat management guidelines to all land management agencies</p> <p>Encourage adoption and use of WAFWA mule deer habitat guidelines by state and federal land management agencies</p> <p>With assistance from the Lands Committee, develop a clearinghouse for providing federal/state and NGO Grant, Easement, and Cost-Share program information and opportunities to landowners</p> <p>Utilize and build upon contacts and partnerships made through existing programs such as HIP, MDI, Access Yes!, and Farm Bill Programs, etc.</p> <p>Provide incentives and assistance to landowners to improve habitat on private land</p> <p>Support use of non-native plant materials for restoration where native plant reestablishment is not feasible</p> <p>Work in cooperation with other agencies and local governments to prevent introduction and spread of invasive species</p> <p>Seek mitigation for adverse impacts to mule deer habitats</p> <p>Promote post-fire restoration strategies for mule deer that emphasize native plants</p> <p>Develop a specialized team for fast response to fire restoration efforts</p> <p>Use emergency winter feeding funds to improve winter range habitat</p> <p>Promote/encourage livestock management practices that are compatible with mule deer habitat</p> <p>Promote rejuvenation of aspen stands on public and private lands</p>
<p>Evaluate a cost-effective and reliable habitat monitoring protocol</p> <p>HAB/POP</p>	<p>Implement habitat monitoring pilot projects on 2 important mule deer ranges by Jul 2009</p>	<p>Convene a team of biologists to evaluate habitat monitoring needs and appropriate protocols</p>

Management Direction	Performance Targets	Strategies
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>NRP/HAB/POP</p>	<p>IDFG participation in all land-use planning efforts</p> <p>Commitment from USFS and BLM to support MDI, the Idaho Mule Deer Management Plan, and WAFWA habitat management guidelines by 2010</p> <p>Complete standardized technical assistance comment and mitigation guidelines by Nov 2008</p> <p>Completion of highway corridor/linkage database by Jul 2008</p> <p>Encourage county use of the highway corridor/linkage database in making land-use decisions by 2009</p> <p>Identify 3 prime locations for reducing highway mortalities and begin discussions with appropriate entities to implement corrective measures by Jul 2009</p>	<p>Increase IDFG involvement in city and county comprehensive planning</p> <p>Assist other agencies in developing GIS-based decision support tools with mule deer as a focal species</p> <p>Review, update, and implement MOU obligations with other agencies</p> <p>Increase IDFG involvement at all levels of long-term, federal agency land-use planning efforts (e.g., resource management, travel, forest, grazing, etc.), and actively pursue opportunities for IDFG involvement on interdisciplinary teams</p> <p>Develop statewide standardized guidelines for technical assistance comments to avoid, minimize, and/or mitigate impacts of land uses on mule deer</p> <p>Increase cost-share partnerships above 2007 levels</p> <p>Minimize/reduce population level impacts from highway mortality</p> <p>Continue partnership with the Idaho Transportation Department (ITD) and Federal Highway Administration to reduce mule deer highway mortality and identify and implement strategies to protect important mule deer linkage corridors</p>
<p>Increase IDFG involvement in short-term, site-specific, project review and implementation</p> <p>NRP/HAB/POP</p>	<p>Fulfill all mule deer data requests annually</p> <p>Provide comments on 100% of land-use proposals that affect mule deer</p>	<p>Share mule deer data in a user-appropriate format with agencies and partners</p> <p>Provide site-specific technical review to avoid, minimize, and mitigate impacts to mule deer</p> <p>Identify cost-share partners for habitat improvement projects on state, federal, and private property</p> <p>Use the Idaho Mule Deer Management Plan as the basis for technical review and comment on project proposals that affect mule deer</p>
<p><b>Compass objective: Eliminate the impacts of fish and wildlife diseases on fish and wildlife populations, livestock, and humans</b></p>		
<p>Minimize the influence of disease as a limiting factor in mule deer populations</p> <p>POP</p>	<p>Collect samples from ≥500 mule deer annually to monitor for Chronic Wasting Disease (CWD)</p> <p>Test ≥10 deer from each emergency feeding operation for diseases of concern</p>	<p>Maintain populations at levels where disease transmission is not a significant concern</p> <p>Monitor occurrence and prevalence of diseases</p> <p>Implement the Emergency CWD Response Plan upon detection</p> <p>Implement winter feeding only in areas where significant communicable disease risks are low (e.g., CWD)</p>

Management Direction	Performance Targets	Strategies
<b>Compass objective: Maintain a diversity of fishing, hunting, and trapping opportunities</b>		
Provide mule deer hunting opportunities that reflect the preferences and desires of hunters	Maintain $\geq 80,000$ mule deer hunters and 350,000 mule deer hunter-days annually	Continue to offer general season mule deer hunting opportunities to provide annual hunting experiences for friends and family
	Provide $\geq 1$ "quality" or "high-quality" buck hunting opportunity in each region by 2008	Distribute additional "quality" and/or "high-quality" hunting opportunities equitably throughout the state
	Maintain $\geq 15$ bucks per 100 does in general season hunts	Implement habitat improvements, hunting season restrictions, motorized vehicle rules, and/or predator management actions to achieve buck management objectives
	Achieve a hunter satisfaction level $>60\%$ for the total hunting experience by 2012	Provide a diversity of hunting opportunities in each region
POP	Conduct a statewide mule deer hunter opinion survey by 2012 to gauge hunter opinions and measure satisfaction with mule deer management and hunting opportunities	Provide information to hunters allowing them to align hunting experience desires with available opportunities
	Improve drawing odds by $\geq 10$ percentage points in "quality" and "high-quality" hunts by 2010	Maintain mule deer hunting and viewing opportunities on all IDFG-managed lands
	Maintain $<50\%$ of hunters identify hunter crowding as a significant issue affecting satisfaction in 2012	Implement changes in the controlled hunt application process that would result in better drawing odds for hunters
		Provide hunting seasons that are $\geq 15$ days
		Maintain a uniform general season opening date
		Provide information to hunters about the hunter density they can expect in each hunt or GMU
		Maintain multiple weapon type hunting opportunities
<b>Compass objective: Sustain fish and wildlife recreation on public land</b>		
Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives	Eliminate "improper use" of OHVs as the most important factor contributing to dissatisfaction of mule deer hunters by 2012	Encourage a balance of motorized and nonmotorized hunting experiences, addressing deer vulnerability as a priority
NRP/HAB/ENF/POP	$\geq 50\%$ of hunters support managed motorized vehicle access	Work with federal and state land management agencies on travel planning and access issues
	$\geq 50\%$ of hunters support the MVR	Continue to implement and evaluate the MVR where necessary to achieve biological and social objectives
	Achieve buck management objectives in each game management unit by 2012	Evaluate need for the Motorized Vehicle Rule after implementation of USFS travel policy
	Increase OHV enforcement efforts by 30% by 2009	



Management Direction	Performance Targets	Strategies
<b>Compass objective: Increase the variety and distribution of access to private land for fish and wildlife recreation</b>		
<p>Maintain, improve, and/or manage access to hunting areas</p> <p>POP/HAB</p>	<p>Review regional Access Yes! priorities by Mar 2009</p> <p>Increase funding for Access Yes! by ≥50% by 2017</p> <p>Access to 1 million acres of private land by 2010</p> <p>Access through private land to 1 million acres of public land by 2010</p> <p>Meet with the Idaho Outfitters and Guides Licensing Board annually to discuss issues of mutual interest</p> <p>Provide access to 75,000 acres of mule deer range within the MDI emphasis area annually</p>	<p>Work with Idaho Outfitters and Guides Licensing Board to reduce or eliminate conflicts between hunters and outfitters on public and private lands</p> <p>Maintain Access Yes! as a priority IDFG program</p> <p>Secure access across private to public lands for mule deer hunting and viewing</p>
<b>Compass objective: Maintain broad public support for fish and wildlife recreation and management</b>		
<p>Emphasize recruitment and retention of mule deer hunters</p> <p>POP/COM/ENF</p>	<p>Hunters constitute greater than 10% of Idaho's population by 2017</p> <p>Increase participation of youth hunters by 20% by 2017</p> <p>Implement improvements to the Hunter Education Program that make is easier for youth and first time hunters to go hunting by 2009</p> <p>Integrate MDI information into all Hunter Education classes</p>	<p>Promote participation in youth hunts</p> <p>Simplify regulations and remove impediments to hunter participation</p> <p>Implement biennial rules for big game species</p> <p>Continue to offer general, either-sex youth hunting opportunity</p> <p>Continue to provide controlled antlerless youth hunting opportunity</p> <p>Emphasize use of youth hunts to help achieve antlerless harvest objectives</p> <p>Consider new opportunities for first-time deer hunters</p> <p>Publicize available hunting opportunities suitable for participation by senior hunters or hunters with disabilities</p> <p>Increase communication directed at youth to reinforce the role of hunting in conservation</p> <p>Include hunter education in school curriculums as an elective</p> <p>Provide a section on the IDFG website that appeals to youth and provides links to web-based material including games, pod-casts, downloadable mp3 clips, and instructional videos</p>

Management Direction	Performance Targets	Strategies
<b>Compass objective: Improve citizen involvement in the decision-making process</b>		
<p>Increase citizen involvement in mule deer management</p> <p>COM/POP</p>	<p>Increase attendance at public meetings and open houses regarding mule deer management by 50% over the next 10 years</p> <p>Reduce the time gap between a decision and feedback to those who provided input to 10 business days after the decision was made</p>	<p>Develop and maintain a public involvement invitation list</p> <p>Invite the public to events through newspapers, direct mail, radio, roadside marquis, 'gov docs', pod-casts, and website</p> <p>Provide incentives to draw the public to meetings and open houses, including donated outdoor/recreation items for free drawings, among others</p> <p>Direct mail a feedback letter to those who provided input into a decision regarding mule deer management</p> <p>Submit requests for public comments and advertise meetings in NGO and other agency newsletters</p> <p>Investigate new methods for providing information and obtaining public input</p>



Management Direction	Performance Targets	Strategies
<b>Compass objective: Increase public knowledge and understanding of Idaho's fish and wildlife</b>		
<p>Increase public understanding of the value of mule deer and their ecology and management</p> <p>COM/HAB/POP</p>	<p>Distribute a guide to mule deer hunting in Idaho by December 2008</p> <p>Place Hook and Bulletin boards at 12 different vendor locations throughout each region</p> <p>Release a monthly message or article statewide to all newspapers and other media outlets about mule deer management</p> <p>Package the July 2007 Mule Deer Management Workshop in Pocatello ("Mule Deer 101") for use in all regions by Mar 2008</p> <p>Issue a special Mule Deer Edition of Fish and Game News each year or have a mule deer focus in each Fish and Game News</p> <p>Conduct 1 survey to evaluate public understanding of mule deer management by 2017</p> <p>During 2008 establish a monthly monitoring of web hits on IDFG mule deer-focused pages</p> <p>Increase website usage on mule deer-focused pages by 10% each year</p> <p>Prepare a "white paper" on the value of the state's wildlife and the scope of illegal commercialization by Sep 2008</p> <p>Increase MDI e-mail list to 10,000 by 2014</p> <p>Increase attendance of non-hunters to management workshops by 25% over the next 10 years</p> <p>Maintain &gt;50% support by hunters for antlerless harvest</p> <p>Deliver a "Wild about Mule Deer" program to 250 teachers</p> <p>Achieve objectives of the MDI Action Plan (see MDI Action Plan at <a href="http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf">http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf</a>.)</p>	<p>Develop and distribute information describing available mule deer hunting experiences and opportunities</p> <p>Submit mule deer related information, requests for public comments, etc. to newsletters put out by NGOs and other agencies</p> <p>Improve support of mule deer hunting by non-hunters</p> <p>Encourage use of IDFG website to acquire information about mule deer</p> <p>Develop educational materials to illustrate the role and history of hunting in society and conservation</p> <p>Provide educational materials to middle schools and high schools</p> <p>Increase educational materials on mule deer hunting displayed at each nature center, museum exhibit, fair display, IDFG office lobbies, and other appropriate venues</p> <p>Develop a brochure explaining mule deer habitat requirements</p> <p>Develop materials that help hunters explain why they hunt on a personal basis</p> <p>Distribute information on benefits of antlerless harvest</p>
<b>Compass objective: Improve funding to meet the legal mandates and public expectations</b>		
<p>Seek new sources of funding for mule deer management efforts.</p> <p>POP/HAB/ENF/COM/NRP</p>	<p>Increase budget for mule deer management by ≥25% by 2013</p>	<p>Improve public and legislative recognition of the value of mule deer to Idaho's economy</p> <p>Work with Governor's office and the legislature to increase funding for mule deer management</p> <p>Work with USFS, BLM, Idaho Department of Parks and Recreation, and Idaho Power on additional funding for enforcement to achieve common goals</p>

Management Direction	Performance Targets	Strategies
<b>Compass objective: Increase opportunities for wildlife viewing and appreciation</b>		
Increase opportunities for mule deer observation, photography, and other nonconsumptive uses of mule deer  COM/HAB	Implement management actions that result in >60% of citizens surveyed reporting satisfaction with opportunities to view, photograph, or otherwise use mule deer resources	Develop lists of mule deer viewing and photography opportunities by Jan 2009 Publicize nonconsumptive and intrinsic values of mule deer and their habitat Provide interpretive signing, kiosks, printed materials for WMAs where mule deer are present Survey opinions of hunters and non-hunters about nonconsumptive uses and the intrinsic value of mule deer

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## MULE DEER POPULATION MANAGEMENT UNITS

Statewide direction and guidance for mule deer management is shown in Tables 6 and 7. However, at the local level, mule deer management strategies and priorities may be different because of variation in population dynamics, habitat condition, hunter characteristics, and social attitudes. The tables in Appendix B provide specific priorities, performance targets, and strategies to be implemented at the mule deer population level.

Fifteen individual Population Management Units (PMUs) were delineated based on mule deer movement and other biological data, similar habitats, and similar management priorities (Figure 3). Short-term and long-term management objectives for populations (maintain or increase) and recreational opportunities (hunter-days) have been established for each PMU. Short-term management objectives can be attained through immediate hunting season structures, notwithstanding catastrophic environmental events (i.e., severe winters, fires, etc.). Long-term management objectives will require completion of a majority of the strategies outlined in this plan, particularly habitat management efforts.

Within the next 5 years, following completion of aerial surveys in PMUs 1-13, population objectives for total number of deer will be developed by IDFG, reviewed by the public, and presented to the IFGC for adoption. Objectives for total number of deer will not be established for PMUs 14 and 15 where mule deer densities are low and management emphasis will be for other species.

## FINANCIAL PLAN

Management of mule deer in Idaho is almost entirely funded by sportsmen. Although many non-hunting citizens of Idaho enjoy the presence of mule deer, IDFG receives no state general funds for management. The 2 primary sources of revenue are state generated license/tag sales and federal funding available through the Pittman-Robertson Wildlife Restoration Program administered by the USFWS. Historically, mule deer management has received a disproportionately high percentage of state and federal funds. Additionally, IDFG implements a limited number of mule deer projects funded by sportsmen organizations and cost-share agreements with the USFS and BLM.

Management goals in this plan are ambitious and will require public support and additional funding to accomplish. Particularly, attainment of long-term population objectives will require extensive habitat management activities with associated costs. Short-term management objectives can likely be met with existing funding. The Department will continue to work with the Governor's Office, other elected officials, federal land management agencies, conservation organizations, private landowners, and sportsman to secure the necessary funding for attainment of long-term management goals. While it's anticipated a vast majority of mule deer management program costs will continue to be borne by hunters, IDFG will actively pursue nontraditional funding sources, especially for those program activities that benefit all Idaho citizens. As a priority program for IDFG, mule deer management will continue to receive a disproportionately high percentage of wildlife management funding.

## Mule Deer Population Management Units

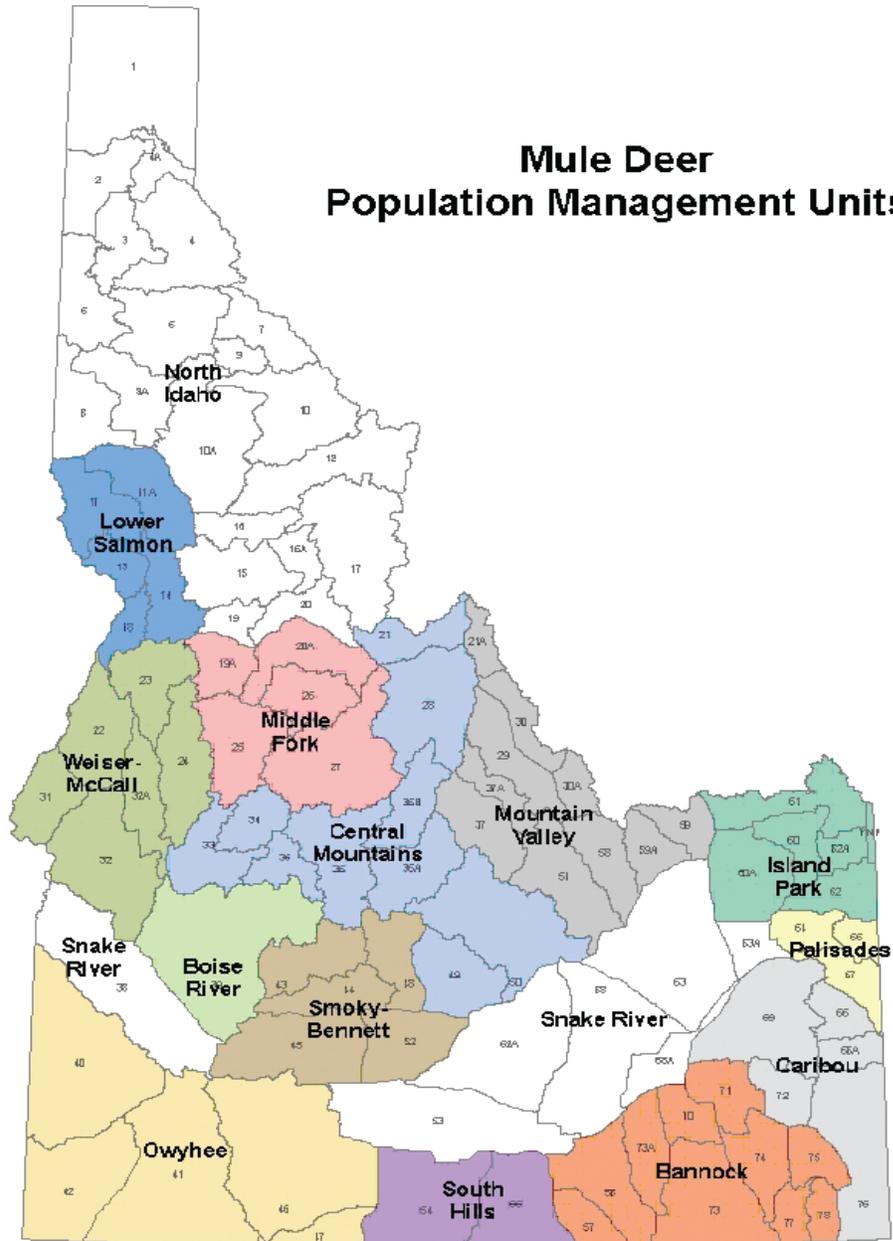


Figure 3. Mule deer population management units.

## LITERATURE CITED

- Austin, D. D., and P. J. Urness. 1986. Effect of cattle grazing on mule deer diet and area selection. *Journal of Range Management* 39:18-21.
- Bates, J. D., R. F. Miller, and T. J. Svejcar. 2000. Understory dynamics in cut and uncut western juniper woodlands. *Journal of Range Management* 53:119-126.
- Ballard, W. B., D. Lutz, T. W. Keegan, L. H. Carpenter, and J. C. deVos, Jr. 2001. Deer-predator relationships: a review of recent North American studies with emphasis on mule and black-tailed deer. *Wildlife Society Bulletin* 29:99-115.
- Ballard, W. B., D. Lutz, T. W. Keegan, L. H. Carpenter, and J. C. deVos, Jr. 2003. Deer-predator relationships. Pages 177-218 in deVos, J. C., Jr., M. R. Conover, and N. E. Headrick, editors. *Mule deer conservation: issues and management strategies*. Berryman Institute Press, Utah State University, Logan, USA.
- Bartmann, R. M., G. C. White, and L. H. Carpenter. 1992. Compensatory mortality in a Colorado mule deer population. *Wildlife Monographs* 121.
- Bennett, L. E. 1999. Current shrub management issues in Wyoming—a white paper prepared for the Wyoming Game and Fish Department. Contract Number 06SC0403104. Cheyenne, USA.
- Bureau of Land Management (BLM). 1985. Fencing. U.S. Department of Interior, Bureau of Land Management, Manual Handbook H-1741-1.
- Bureau of Land Management (BLM). 2007. Invasive species. Bureau of Land Management Learning Landscapes. <<http://www.blm.gov/education/LearningLandscapes/explorers/lifetime/invasive.html>> Accessed 7 January 2008.
- Case, D. J. 2004. Waterfowl hunter think tank: understanding the relationship between waterfowl hunting regulations and hunters satisfaction/participation, with recommendations for improvements to agency management and conservation programs. Wildlife Management Institute, Washington, D.C., USA.
- Caughley, G. 1974. Bias in aerial survey. *Journal of Wildlife Management* 38:921-933.
- Coe, P. K., B. K. Johnson, J. W. Kern, S. L. Findholt, J. G. Kie, and M. J. Wisdom. 2001. Responses of elk and mule deer to cattle in summer. *Journal of Range Management* 54:A51-76.
- Coe, P. K., B. K. Johnson, K. M. Stewart, and J. G. Kie. 2004. Spatial and temporal interactions of elk, mule deer, and cattle. Pages 656-669 in *Transactions of the 69th North American Wildlife and Natural Resources Conference*.
- Connolly, G. E. 1978. Predators and predator control. Pages 369-394 in J. L. Schmidt and D. L. Gilbert, editors. *Big game of North America*. Stackpole, Harrisburg, Pennsylvania, USA.
- Cooper, A. B., and J. W. Unsworth. 2000. Southwest region big game modeling. Completion Report, Project W-160-R-127, Idaho Department of Fish and Game, Boise, USA.
- D. J. Case & Associates. 2007. Best practices for hunting and shooting recruitment and retention. Report from the Think Tank Meeting 7-9 May 2007. Warwick, Rhode Island. <<http://www.nssf.org/hhp/BestPractices-ThinkTank-May2007.pdf>>. Accessed 11 October 2007.
- Dean, R., B. B. Compton, P. Douglas, J. Ellenberger, J. McGowan, E. Miquez, and S. Werbelow. 2003. Feeding deer and elk by state governments in the western U.S.A. *Western States and Provinces Deer and Elk Workshop* 5:2-9.
- Doman, E. R., and D. I. Rasmussen. 1944. Supplemental feeding of mule deer in northern Utah. *Journal of Wildlife Management* 8:317-338.
- Dusek, G. L. 1975. Range relations of mule deer and cattle in prairie habitat. *Journal of Range Management* 39:605-16.

- Enck, J. W., D. J. Decker, and T. L. Brown. 2000. Status of hunter recruitment and retention in the United States. *Wildlife Society Bulletin* 28:817-824.
- Ffolliott, P. F., and W. P. Clary 1972. A selected and annotated bibliography of understory-overstory relationships. Technical Bulletin 198, Agricultural Experiment Station, University of Arizona, Tucson, USA.
- Gary, H. J. 1974. Canopy weight distribution affects wind speed and temperature in lodgepole pine forest. *Forestry Science* 20:369-371.
- Geist, V. 1990. Mule deer country. North American Hunting Club, Minnetonka, Minnesota, USA.
- Gordon, J., and D. Mulkey. 1978. Income multipliers of community impact analyses—what size is reasonable? *Journal of Community Development Society of America* 9(1):86-93.
- Hamlin, K. L., S. J. Riley, D. Pyrah, A. R. W. Dood, and R. J. Mackie. 1984. Relationships among mule deer fawn mortality, coyotes, and alternate prey species. *Journal of Wildlife Management* 48:489-499.
- Hammit, W. E., C. D. McDonald, and M. E. Patterson. 1990. Determinants of multiple satisfaction for deer hunting. *Wildlife Society Bulletin* 18:331-337.
- Harniss, R. O., and R. B. Murray. 1973. Thirty years of vegetal change following burning of sagebrush-grass range. *Journal of Range Management* 26:322-325.
- Hurley, M. A., J. W. Unsworth, P. Zager, E. O. Garton, D. M. Montgomery, and C. L. Maycock. Unpublished. Mule deer survival and population response to experimental reduction of coyotes and mountain lions. Idaho Department of Fish and Game, Boise, USA.
- Hurley, M., and P. Zager. 2007. Southeast mule deer ecology. Idaho Department of Fish and Game. Federal Aid in Wildlife Restoration Completion Report, Project W-160-R-33, Boise, USA.
- Husseman, J. 2002. Prey selection patterns of wolves and cougars in east-central Idaho. Thesis, University of Idaho, Moscow, USA.
- Houston, D. B. 1973. Wildfire in northern Yellowstone National Park. *Ecology* 54:1111-1117.
- Howard, J. L. 1999. *Artemisia tridentata* subsp. *wyomingensis*. Fire effects information system, U.S. Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. <<http://www.fs.fed.us/database/feis/plants/shrub/arttriv/all.html>> Accessed 7 January 2008.
- Idaho Department of Fish and Game (IDFG). 1998. Black bear management plan 1999-2010: status and objectives of Idaho's black bear resource. Idaho Department of Fish and Game, Boise, USA.
- Idaho Department of Fish and Game (IDFG). 1999. White-tailed deer, mule deer, and elk management plan. Idaho Department of Fish and Game, Boise, USA.
- Idaho Department of Fish and Game (IDFG). 2000. Policy for avian and mammalian predation management. Adopted by Idaho Fish and Game Commission, 24 August 2000. Idaho Department of Fish and Game, Boise, USA.
- Idaho Department of Fish and Game (IDFG). Mountain lion management plan 2002-2010. Idaho Department of Fish and Game, Boise, USA.
- Idaho Department of Fish and Game (IDFG). White-tailed deer management plan 2004-2014. Idaho Department of Fish and Game, Boise, USA.
- Idaho Department of Fish and Game (IDFG). 2005a. Idaho comprehensive wildlife conservation strategy. Idaho Conservation Data Center, Idaho Department of Fish and Game, Boise, USA.
- Idaho Department of Fish and Game (IDFG). 2005b. The compass: Idaho Department of Fish and Game strategic plan. Idaho Department of Fish and Game, Boise, USA.
- Idaho Department of Fish and Game (IDFG). The mule deer initiative action plan. Idaho Department of Fish and Game, Boise, USA.

- Idaho Department of Fish and Game (IDFG). Idaho wolf population management plan 2008-2012. Idaho Department of Fish and Game, Boise, USA. In preparation.
- Idaho Department of Fish and Game (IDFG) and Idaho State Animal Damage Control Board. 2005. Memorandum of Understanding between Idaho Department of Fish and Game and Idaho State Animal Damage Control Board. Boise, USA.
- Idaho Wolf Legislative Oversight Committee. 2002. Idaho wolf conservation and management plan as modified by 56th Idaho Legislature, second regular session. <[http://fishandgame.idaho.gov/cms/wildlife/wolves/state/wolf\\_plan.pdf](http://fishandgame.idaho.gov/cms/wildlife/wolves/state/wolf_plan.pdf)>. Accessed 11 October 2007.
- Johnson, B. K., J. W. Kern, M. J. Wisdom, S. L. Findholt, and J. G. Kie. 2000. Resource selection and spatial separation of elk and mule deer in spring. *Journal of Wildlife Management* 64:685-697.
- Jones, J. R. and N. V. DeByle. 1985. Fire. Pages 77-81 in N. V. DeByle and R. P. Winokur, editors. *Aspen: ecology and management in western United States*. General Technical Report RM-119. U.S. Forest Service, Rocky Mountain Forest and Range Experiment Station, Fort Collins, Colorado, USA.
- Keegan, T. W., and B. F. Wakeling. 2003. Elk and deer competition. Pages 139-150 in deVos, J. C., Jr., M. R. Conover, and N. E. Headrick, editors. *Mule deer conservation: issues and management strategies*. Berryman Institute Press, Utah State University, Logan, USA.
- Klein, D. R. 1995. The introduction, increase, and demise of wolves on Coronation Island, Alaska. Pages 275-280 in L. N. Carbyn, S. H. Fritts, and D. R. Seip, editors. *Ecology and conservation of wolves in a changing world*. Canadian Circumpolar Institute, University of Alberta, Edmonton, Canada.
- Landis, T. D. and E. W. Mogren. 1975. Tree strata biomass of subalpine spruce-fir stands in southwestern Colorado. *Forestry Science* 21:9-12.
- Lindzey, F. G., W. G. Hepworth, T. A. Mattason, and A. F. Reese. 1997. Potential for competitive interactions between mule deer and elk in the western United States and Canada: a review. Wyoming Cooperative Fisheries and Wildlife Research Unit, Laramie, USA.
- Logan, K. A., L. L. Sweanor, T. K. Ruth, and M. G. Hornocker. 1996. *Cougars of the San Andres Mountains, New Mexico*. New Mexico Department of Game and Fish. Federal Aid in Wildlife Restoration Final Report, Project W-128-R, Santa Fe, USA.
- Lutz, D. W., B. F. Wakeling, L. H. Carpenter, D. Stroud, M. Cox, D. McWhirter, S. Rosenstock, L. C. Bender, and A. F. Reeve. 2003. Impacts and changes to mule deer habitat. Pages 13-61 in deVos, J. C., Jr., M. R. Conover, and N. E. Headrick, editors. *Mule deer conservation: issues and management strategies*. Berryman Institute Press, Utah State University, Logan, USA.
- Mackie, R. J. 1981. Interspecific relationships. Pages 487-508 in O. C. Wallmo, editor. *Mule and black-tailed deer of North America*. University of Nebraska Press, Lincoln, USA.
- Macnab, J. 1985. Carrying capacity and related slippery shibboleths. *Wildlife Society Bulletin* 13:403-410.
- Miller, R. F. and J. A. Rose. 1999. Fire history and western juniper encroachment in sage-steppe. *Journal of Range Management* 52:550-559.
- Mule Deer Working Group. 2004. North American mule deer conservation plan. Western Association of Fish and Wildlife Agencies.
- Peek, J. M., and P. R. Krausman. 1996. Grazing and mule deer. Pages 183-192 in P. R. Krausman, editor. *Rangeland Wildlife*. Society of Range Management. Denver, Colorado, USA.
- Pengelly, W. L. 1953. Coeur d'Alene deer management study. Completion Report. Idaho Department of Fish and Game, Boise, USA.

- Peters, E. F. and S. C. Bunting. 1994. Fire conditions pre- and post-occurrence of annual grasses on the Snake River Plain. Pages 31-36 in Proceedings—Ecology, Management, and Restoration of Intermountain Rangelands Symposium. U.S. Forest Service INT-GTR-313, Ogden, Utah, USA.
- Responsive Management. 2005. Hunter retention and recruitment in North Carolina: analysis and implications from the "Maintaining the Heritage" 2005 workshop. <[http://www.ncwildlife.org/pg04\\_HuntingTrapping/nc\\_hunter\\_retention.pdf](http://www.ncwildlife.org/pg04_HuntingTrapping/nc_hunter_retention.pdf)>. Accessed 21 September 2007.
- Roberts, A. M. 1996. The trade in drugs and wildlife. *The Animals' Agenda* 16(5):34-35.
- Schmidt, J. L., and D. L. Gilbert, editors. 1978. Big game of North America, ecology and management. Stackpole, Harrisburg, Pennsylvania, Wildlife Management Institute, Washington, D.C., USA.
- Sanyal, N., E. Krumpel, and D. Coombs. 2007. Mule deer hunting in Idaho: understanding the needs and experiences of hunters. University of Idaho, Moscow, USA. <<http://fishandgame.idaho.gov/cms/hunt/MDI/MuleDeerResults.pdf>> Accessed 7 January 2008.
- Scott, M., M. Hurley, and P. Zager. 2006. Mule deer ecology. Federal Aid in Wildlife Restoration Completion Report, Project W-160-R-33, Idaho Department of Fish and Game, Boise, USA.
- Skovlin, J. M., P. J. Edgerton, and R. W. Harris. 1968. The influence of cattle management on deer and elk. *Transactions of the North American Wildlife and Natural Resources Conference* 33:169-181.
- Smith, R. H., and A. LeCount. 1979. Some factors affecting survival of desert mule deer fawns. *Journal of Wildlife Management* 43:657-665.
- Stewart, K. M., R. T. Bowyer, J. G. Kie, N. J. Cimon, and B. K. Johnson. 2002. Temporospatial distributions of elk, mule deer, and cattle: resource partitioning and competitive displacement. *Journal of Mammalogy* 83:229-244.
- Tausch, R. J., N. E. West, and A. A. Nabi. 1981. Tree age and dominance patterns in Great Basin pinyon-juniper woodlands. *Journal of Range Management* 34:259-264.
- Teer, J. G., D. L. Draw, T. L. Blankenship, W. F. Andelt, R. S. Cook, J. G. Kie, F. F. Knowlton, and M. White. 1991. Deer and coyotes: the Welder experiments. *Transactions of the North American Wildlife and Natural Resources Conference* 56:550-560.
- Torstenson, W. L., J. C. Mosley, T. K. Brewer, M. W. Tess, and J. E. Knight. 2006. Elk, mule deer, and cattle foraging relationships on foothill and mountain rangeland. *Rangeland Ecology and Management* 59:80-87.
- U.S. Department of Agriculture (USDA). 2006. Integrated management of weeds and other pests. Agriculture Research Service, Rangeland, Pasture and Forages Program. <<http://www.ars.usda.gov/research/programs/programs.htm?npnumber=205&docid=859#imwop>> Accessed 7 January 2008.
- U.S. Forest Service Rocky Mountain Research Station, Fire Sciences Laboratory. 2002. Fire effects information system, species *Artemisia tridentata* ssp. *wyomingensis*. <<http://www.fs.fed.us/database/feis/plants/shrub/arttriv/all.html>> Accessed 7 January 2008.
- U.S. Department of Interior (USDI). 2004. Draft fire, fuels, and related vegetation management direction plan amendment and environmental impact statement. Bureau of Land Management, Upper Snake River District, Idaho Falls, Idaho, USA.
- U.S. Fish and Wildlife Service (USFWS). 2002. 2001 national survey of fishing, hunting, and wildlife-associated recreation. U.S. Department of Interior, Fish and Wildlife Service and U.S. Department of Commerce, Census Bureau.
- U.S. Fish and Wildlife Service (USFWS). 2005. U.S. wildlife trade: an overview for 1997-2003. U.S. Fish and Wildlife Service, Law Enforcement Intelligence Unit. <<http://www.fws.gov/le/pdf/files/Wildlife%20Trade%20Overview%20Report.pdf>> Accessed 7 January 2008.

- Unsworth, J. W., F. A. Leban, D. J. Leptich, E. O. Garton, and P. Zager. 1994. Aerial survey: user's manual, Second edition. Idaho Department of Fish and Game, Boise, USA.
- Unsworth, J. W., D. F. Pac, G. C. White, and R. M. Bartmann. 1999. Mule deer survival in Colorado, Idaho, and Montana. *Journal of Wildlife Management* 63:315-326.
- Urness, P. J. 1979. Supplemental feeding of big game in Utah. Utah Division of Wildlife Resources Publication Number 80-8, Salt Lake City, USA.
- Vallentine, J. 1989. Grazing management. Academic Press, San Diego, California, USA.
- Vilkitis, J. R. 1968. Characteristics of big game violators and extent of their activity in Idaho. Thesis, University of Idaho, Moscow, USA.
- Wallmo, O. C., editor. 1981. Mule and black-tailed deer of North America. University of Nebraska Press, Lincoln, USA.
- Wallmo, O. C., W. L. Regelin, and D. W. Reichert. 1972. Forage use by mule deer relative to logging in Colorado. *Journal of Wildlife Management* 36:1025-1033.
- Whisenant, S. G. 1990. Changing fire frequencies on Idaho's Snake River Plains: ecological and management implications. Pages 4-10 in E. D. McArthur, E. M. Romney, S. D. Smith, and P. T. Tueller, editors. Proceedings of a symposium on cheatgrass invasion, shrub die-off, and other aspects of shrub biology and management. U.S. Forest Service General Technical Report INT-276. Intermountain Forest and Range Experiment Station, Ogden, Utah, USA.
- White, G. C., and R. M. Bartmann. 1998. Mule deer management – what should be monitored? Pages 104-118 in J. C. deVos, Jr., editor. Proceedings of the 1997 Deer/Elk Workshop, Rio Rico, Arizona. Arizona Game and Fish Department. Phoenix, USA.
- White, G. C., D. J. Freddy, R. B. Gill, and J. H. Ellenberger. 2001. Effect of adult sex ratio on mule deer and elk productivity in Colorado. *Journal of Wildlife Management* 65:543-551.
- Wickstrom, M. L., C. T. Robbins, T. A. Hanley, D. E. Spalinger, and S. M. Parish. 1984. Food intake and foraging energetics of elk and mule deer. *Journal of Wildlife Management* 48:1285-1301.
- Wood, A. K., R. J. Mackie, and K. L. Hamlin. 1989. Ecology of sympatric populations of mule deer and white-tailed deer in a prairie environment. Montana Department of Fish, Wildlife, & Parks, Helena, USA.
- Wyoming Game and Fish Department. 2004. Fencing guidelines for wildlife. Habitat Extension Bulletin Number 53, revised version. <<ftp://ftp-fc.sc.egov.usda.gov/WY/Range/Fencing%20Guidelines%20for%20Wildlife%20Habitat%20Extension%20Bulletin.pdf>> Accessed 7 January 2008.
- Zager, P., G. Pauley, M. Hurley, and C. White. 2007. Statewide ungulate ecology. Idaho Department of Fish and Game, Federal Aid in Wildlife Restoration Progress Report, Project W-160-R-34, Boise, USA.

# APPENDIX A

## 2006 Idaho Mule Deer Hunter Opinion Survey

### Executive Summary

#### Motives for Deer Hunting

In all 7 IDFG regions, mule deer hunters scored social motivations as being more important than harvesting a large buck. Hunting for meat was considered moderately important. The social domains (family, friends, and values) are far more important than harvest-related motivations for most hunters. Compared to hunters in 1987, 2006 hunters exhibit slightly weaker attachment to other motivations (experiencing nature, developing hunting skills, etc.). Only 2 motivations (doing something with family and developing close friendships) show greater importance in the 2006 survey.

Hunters in the Clearwater, Southeast, and Salmon regions rated harvesting a large buck the highest (moderately important) while hunters in the Southwest, Magic Valley, and Upper Snake regions scored it as somewhat important. Non-resident hunters scored harvesting a large buck as more important than Idaho residents.

Mule deer hunters in Idaho value hunting for the meat as moderately important. In 6 of the 7 regions, hunters scored "putting meat on the table" either higher or the same as harvesting a large buck.

#### Where to Hunt Motives

Hunters take many things into consideration when deciding where to hunt. The most important determinants in selecting where to hunt were "an area where I can hunt every year" and "an area I am familiar with" scored highest. Just slightly less important was an area where I "don't have to compete with ATV's," and "an area close to home."

#### Selecting a Hunt Area

Idaho mule deer hunters primarily choose their hunting area based upon available access to public lands, closely followed by the greatest chance of harvesting success, and where they can also hunt elk during mule deer season. Access to private land and hunting in areas where they can hunt with any weapon had almost no effect on their decisions. An area with many mule deer but few mature bucks was generally considered to be negative.

#### Weapons

Over 90% of mule deer hunters use rifles and 2/3 use rifles only. After rifles, compound bows were most popular. The Panhandle Region has the highest percentage of muzzleloader hunters and multiple weapon hunters. The use of "traditional" and "modern" muzzleloaders was approximately equal.

#### Hunting Unit Use

About half of the mule deer hunters hunt in 2 or 3 units every year and over one-third hunt in the same unit every year. Magic Valley Region hunters hunted in more different units than any other region, most likely because of the lower number of general hunts available.

#### Reasons for not hunting mule deer every year

In 5 regions, work schedule was the most frequently reported reason for not hunting every year. Low deer numbers was scored highest in the Southeast Region. Also in the Southeast Region, ATV activity and too many hunters scored high. When asked which item was the most important reason for not hunting every year, low deer numbers (20%), work schedule (15%), and hunted other game (13%) were the most commonly cited reasons.

#### Motorized Vehicle Rule

Only half of mule deer hunters were aware of the IDFG Motorized Vehicle Rule. Hunters generally support the rule; slightly above neutral.

#### Travel modes

Hunters reported they "usually" or "always" hunted on foot. Hunters used ATVs sometimes and more than pack animals. About one-half of deer hunters reported owning an ATV or motorbike.

#### Reasons for using an ATV/motorbike

The 2 most important reasons for using an ATV were to hunt with others who use ATVs and to retrieve big game. The ownership and use of ATVs has increased significantly since the last survey in 1987.

### ATV Restrictions

When asked if ATV and motorbike use was further restricted, the highest scores were "I would still hunt in Idaho" and "I would hunt without an ATV or motorbike." The next highest score was "I would enjoy hunting more."

### Elk/Deer Interaction

There was not broad support for decreasing elk to increase mule deer.

### Desirable Kinds of Mule Deer

Large bucks were most highly desired, followed by medium bucks and any mule deer.

### Additional Restrictions to Manage for Larger and More Bucks

Among resident hunters, regional acceptance of additional restrictions to manage for more and larger bucks ranged from 59% to 71%. Controlled hunts were most acceptable and giving up the ability to hunt every year least acceptable. This apparent dichotomy between annual hunting opportunity and controlled hunts makes sense from the Idaho perspective. Currently, hunters can apply for controlled hunts and if not drawn, choose a general hunt somewhere.

There was general acceptance of road and trail closures as a tool to manage for more and larger bucks. When forced to choose between being able to hunt frequently or hunting for large bucks, 69% of respondents chose hunt frequency.

### Satisfaction

Hunters were most satisfied with having the opportunity to hunt. A majority were also positive about the overall quality of their hunting experience, the amount of access, and the length and timing of the season. Less than a majority were positive about the number and size of bucks seen and number of ATVs encountered. Satisfaction in 2006 did not vary by type or size of deer harvested.

### Antlerless Hunts

More than 90% of respondents felt that antlerless hunting is appropriate and >55% have participated in antlerless hunts and would do so again. However, respondents generally needed more information to justify antlerless hunting. Willingness to participate in antlerless hunts was highest in the Magic Valley Region (63%) and lowest in the Panhandle Region (29%). Youth hunts and controlled hunts were most acceptable methods of harvesting antlerless deer.

### Hunter Congestion

Overall, hunter crowding was not identified as a major issue. However, when asked how to reduce crowding issues, longer seasons was the most preferred with having to choose a single species (deer or elk) the least preferred. Hunters were split over using stratified hunts, controlled hunts, or zones (like elk management).

### Hunt in Special Weapons Seasons

When asked why hunters chose to hunt in primitive weapon seasons, "to hunt when fewer hunters are afield" and "to expand my hunting season" were the most important reasons.

### Conservation Officers

Statewide, 57% of hunters have been checked by a conservation officer. The majority of respondents believed officers were professional, friendly, and knowledgeable; 52% of respondents rated their encounters with officers as excellent or outstanding.



## APPENDIX B

### Population Management Unit Tables

# Mule Deer Statewide

Management Objectives	
Short-Term Objective	Long-Term Objective
TBD	TBD
Increase	Increase
> 350,000	> 450,000

Square Miles =	83,542	3-Year Averages
% Public Land =	69%	Hunters per square mile =
Major Land Type =	Varies	Harvest per square mile =
		Success Rate =
		1.3
		0.34
		26%

Population Status										
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn: Doe	58	64	61	60	56	63	61	56		
Buck: Doe	20	19	17	16	19	21	22	16		
Fawn Survival	57%	71%	40%	69%	54%	76%	31%	69%		
Adult Doe Survival	ND	ND	ND	ND	ND	ND	87%	89%		

Note: Fawn: Doe expressed as fawns per 100 does, Buck: Doe expressed as bucks per 100 does

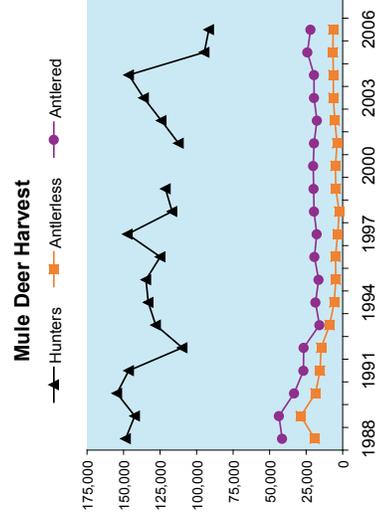
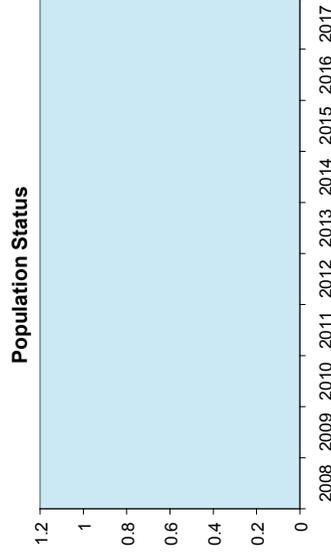
Fawn Survival = overwinter fawn survival (December - May)

Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality

Harvest Statistics					
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points
1988	148,600	978,000	19,238	41,508	
1989	142,400	1,089,800	28,670	43,650	
1990	154,500	1,188,000	18,677	33,197	
1991	146,500	1,810,000	15,433	26,790	
1992	109,770	866,000	14,725	26,679	44%
1993	128,000	835,000	8,884	15,863	44%
1994	133,063	655,000	5,833	18,599	44%
1995	134,722	691,800	4,713	16,478	43%
1996	124,795	616,500	5,028	19,318	48%
1997	147,244	503,400	3,437	17,737	38%
1998	116,771	803,055	2,393	19,656	38%
1999	121,364	667,898	4,695	19,955	33%
2000	112,320	779,879	5,000	20,100	26%
2001	124,200	761,851	5,463	17,607	33%
2002	136,200	532,044	6,332	19,605	42%
2003	146,500	698,165	6,332	19,605	38%
2004	94,800	399,708	6,746	24,128	38%
2005	91,644	419,892	6,476	22,084	38%
2006					
2007					

Note: Harvest data prior to 1998 does not include primitive weapon harvest.

Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.



## Mule Deer Lower Salmon Population Management Unit (Game Management Units 11, 11A, 13, 14, 18)



Management Objectives	
Short-Term Objective	Long-Term Objective
TBD	TBD
Increase*	Increase*
>2,500	>3,500

Square Miles =	2,788	3-Year Averages
% Public Land =	37%	Hunters per square mile =
Major Land Type =	Agriculture/Range	Harvest per square mile =
		Success Rate =
		0.2
		0.17
		77%

Population Status		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer											

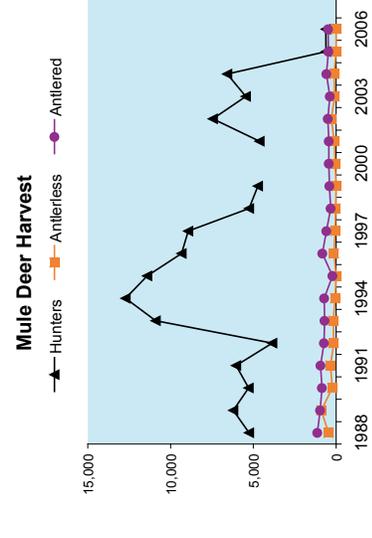
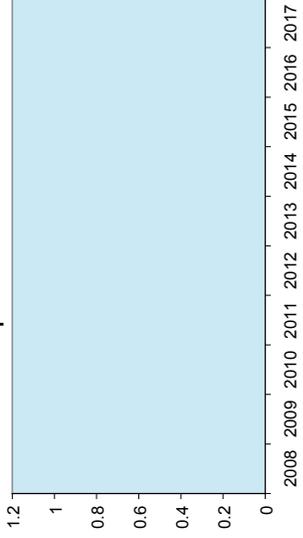
Note: Estimates in red are based on information other than sightability surveys.

Population Parameters		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe		49	ND	52	58	47	63	ND	ND	ND	
Buck:Doe		21	ND	18	27	23	20	ND	ND	ND	
Fawn Survival		ND									
Adult Doe Survival		ND									

Note: Fawn:Doe expressed as fawns per 100 does; Buck:Doe expressed as bucks per 100 does

Fawn Survival = overwinter fawn survival (December - May)

Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



Year	Hunters		Hunter Days		Deer Harvest	
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points	
1988	5,257	27,204	469	1,135		
1989	6,214	33,056	885	960		
1990	5,287	84,353	235	851		
1991	6,045	81,549	339	937		
1992	3,862	22,570	144	729		
1993	10,896	77,784	171	699		
1994	12,713	89,177	57	721		
1995	11,417	78,824	0	216		
1996	9,331	56,895	140	831		
1997	8,930	41,817	55	589		
1998	5,256	31,699	20	329		
1999	4,722	30,089	0	399		
2000	4,626	23,634	64	442		
2001	7,445	34,568	105	441		
2002	5,453	25,183	89	506		
2003	6,580	33,331	120	373	68%	
2004	612	2,985	0	584	64%	
2005	618	2,878	0	463	72%	
2006				486	69%	
2007						

Note: Harvest data prior to 1998 does not include primitive weapon harvest.

Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Unit		ND	ND	1,662	ND	1,747	1,722	2,645	1,937	ND	ND
Various		ND	ND	1,662	ND	1,747	1,722	2,645	1,937	ND	ND

Note: ND = no survey data available

**Management direction, performance targets, and strategies  
for the Lower Salmon PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
Provide mule deer hunting opportunities that reflect preferences and desires of hunters  POP <sup>a</sup>	Conduct 1-2 public meetings annually to discern hunter desires and input  Manage to provide “quality” or “high-quality” opportunity based on hunter input while maintaining existing number of hunter days	Evaluate hunter desires and expectations
Maintain, improve, and manage access to hunting areas  POP	Maintain AccessYes! agreements on 10,000 acres	Work to maintain public hunting access
Improve key winter, summer and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives  HAB	Work with land management agencies to enhance seed mixes used for post-fire restoration whenever possible  Coordinate annually with land managers to develop control strategies for yellow starthistle ( <i>Centaurea solstitialis</i> ) on winter ranges  Treat 1,000 acres for yellow starthistle annually on Craig Mountain WMS	Enhance/restore native plant communities on winter ranges  Use appropriate herbicides and methods to reduce noxious weeds, especially yellow starthistle on Craig Mountain WMA
Implement proactive measures to reduce and minimize mule deer depredations  POP	Mule deer depredation complaints and claims are reduced below 2007 levels	Increase antlerless harvest in Unit 11A

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer Weiser-McCall Population Management Unit (Game Management Units 22, 23, 24, 31, 32, 32A)



Square Miles =	5116	3-Year Averages
% Public Land =	56%	Hunters per square mile =
Major Land Type =	Rangeland	Harvest per square mile =
		Success Rate =
		2.8
		0.95
		34%

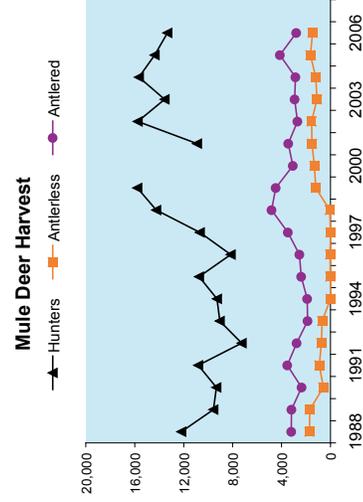
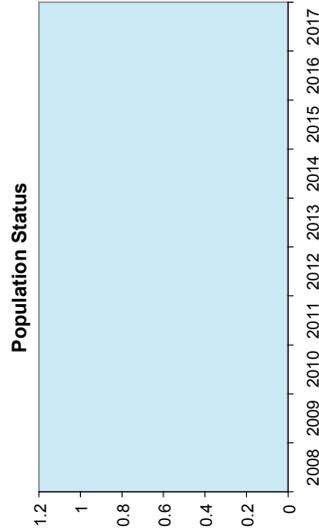
Management Objectives		Long-Term Objective	
# of Deer	TBD	TBD	
Pop. Goal	Maintain	Maintain	
Hunter Days	>50,000	>50,000	

Population Status		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer											

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Do	52	77	61	53	47	58	70				
Buck:Do	9	9	7	5	11	12	10				
Fawn Survival	35%	53%	49%	64%	32%	44%	68%				
Adult Doe Survival	ND	ND	ND	ND	89%	84%					

Note: Fawn:Do expressed as fawns per 100 does, Buck:Do expressed as bucks per 100 does  
Fawn Survival = overwinter fawn survival (December - May)  
Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



Year	Hunters	Hunter Days	Deer Harvest		% 4+ Points
			Antlerless	Antlered	
1988	12,195	56,321	1,730	3,200	
1989	9,561	44,906	1,700	3,196	
1990	9,326	42,719	585	2,359	
1991	10,806	49,237	917	3,524	
1992	7,265	37,355	748	2,767	
1993	9,048	60,599	687	1,875	
1994	9,277	54,185	0	1,903	
1995	10,746	66,134	17	2,389	
1996	8,157	44,490	40	2,532	
1997	10,672	46,424	0	3,490	
1998	14,246	75,155	59	4,824	
1999	15,790	86,853	1,203	4,471	
2000	10,896	45,921	1,324	3,075	
2001	15,752	66,762	1,506	3,458	
2002	13,558	55,024	1,113	2,695	
2003	14,363	60,742	1,209	2,859	25%
2004	13,321	58,182	1,463	2,805	31%
2005					30%
2006					27%
2007					

Note: Harvest data prior to 1998 does not include primitive weapon harvest.  
Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys		1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Unit	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

**Management direction, performance targets, and strategies  
for the Weiser-McCall PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
<p>Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives.</p> <p>NRP/HAB/ENF/POP<sup>a</sup></p>	<p>Eliminate “improper use” of OHVs as the most important factor contributing to dissatisfaction of mule deer hunters</p> <p>Achieve &gt;50% support for the Motorized Vehicle Rule</p> <p>Achieve &gt;50% support for managed motorized vehicle access</p>	<p>Work with federal and state land management agencies on travel planning and access issues</p> <p>Evaluate the need to maintain the MVR in GMUs 32 and 32A to achieve biological and social objectives</p> <p>Evaluate need for the Motorized Vehicle Rule in GMUs 22 and 31 after implementation of USFS travel policy</p>
<p>Improve key winter, summer, and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB</p>	<p>Work with BLM to map distribution and develop control strategies for medusahead (<i>Taeniatherum caput-medusae</i>)</p> <p>Treat 1,000 acres of noxious weeds annually</p> <p>Rejuvenate 2,500 acres of mule deer winter range annually</p>	<p>Work with BLM to reduce cheatgrass and medusahead infestations in GMU 32</p> <p>Use appropriate herbicides and methods to reduce noxious weeds, especially rush skeletonweed (<i>Chondrilla juncea</i>) on Andrus WMA</p> <p>Work with Payette National Forest to use prescribed fire for winter range rejuvenation</p>
<p>Maintain, improve, and/or manage access to hunting areas</p> <p>POP</p>	<p>Maintain AccessYes! agreements on over 100,000 acres of private land annually</p>	<p>Work with Potlatch Corporation to maintain public hunting access to corporate lands</p>
<p>Emphasize recruitment and retention of mule deer hunters</p> <p>POP/COM/ENF</p>	<p>Maintain participation of youth hunters at 2007 levels</p>	<p>Prioritize youth antlerless hunting opportunity for population management</p>
<p>Provide mule deer hunting opportunities that reflect preferences and desires of hunters</p> <p>POP</p>	<p>Implement ≥1 “quality” or “high-quality” buck hunting opportunity</p>	<p>Evaluate hunter desires and expectations for GMUs in the Weiser River drainage</p> <p>Implement a mixture of general and special management frameworks consistent with hunter desires</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>NRP/HAB/POP</p>	<p>Encourage use of decision support tools in land-use planning efforts</p> <p>Seek IDFG participation in all land-use planning efforts</p>	<p>Increase IDFG involvement at all levels of city and county comprehensive planning</p> <p>Assist Adams and Valley counties in developing GIS-based decision support tools (Blaine County Model) with mule deer as a focal species</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer Middle Fork Population Management Unit (Game Management Units 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

	4,246	3-Year Averages
Square Miles =	99%	Hunters per square mile = 0.5
% Public Land =	Forest	Harvest per square mile = 0.17
Major Land Type =		Success Rate = 37%



### Population Status

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

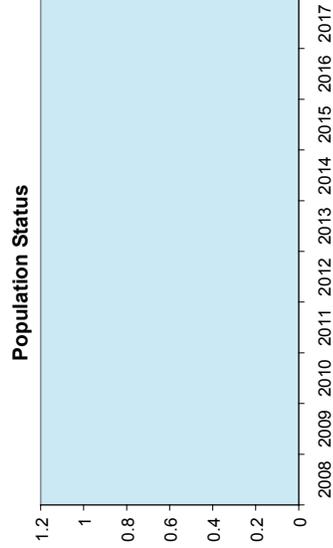
### Population Parameters

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	35	45	48	63	ND	54	ND	54		
Buck:Doe	22	24	26	22	ND	27	ND	19		
Fawn Survival	ND	ND	ND	ND	ND	ND	35%	68%		
Adult Doe Survival	ND	ND	ND	ND	ND	ND	85%	86%		

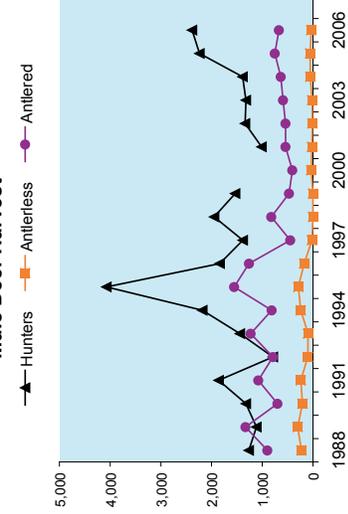
Note: Fawn:Doe expressed as fawns per 100 does; Buck:Doe expressed as bucks per 100 does

Fawn Survival = overwinter fawn survival (December - May)

Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



### Mule Deer Harvest



### Harvest Statistics

Year	Hunters	Hunter Days	Deer Harvest		% 4+ Points
			Antlerless	Antlered	
1988	1,266	7,554	227	901	
1989	1,116	6,835	301	1,332	
1990	1,322	8,836	209	700	
1991	1,861	10,654	240	1,078	
1992	788	5,959	103	791	
1993	1,440	8,727	97	1,228	
1994	2,181	13,640	242	814	
1995	4,071	25,040	289	1,555	
1996	1,839	11,570	173	1,260	
1997	1,383	7,382	19	449	
1998	1,950	9,962	0	821	
1999	1,533	7,964	0	471	
2000			35	406	
2001	1,012	5,066	20	541	
2002	1,338	7,780	14	543	
2003	1,321	6,915	17	588	60%
2004	1,389	7,892	54	636	57%
2005	2,237	12,714	56	752	65%
2006	2,383	14,110	33	670	60%
2007					

Note: Harvest data prior to 1998 does not include primitive weapon harvest.

Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

### Previous Trend Area Surveys

Unit	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

**Management direction, performance targets, and strategies for the Middle Fork PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
Improve key winter, summer and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives HAB <sup>a</sup>	Rejuvenate 2,500 acres of mule deer winter range annually	Work with Payette National Forest and RMEF to use prescribed fire for winter range rejuvenation in the South Fork Salmon River drainage

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer

### Central Mountains Population Management Unit (Game Management Units 21, 28, 33, 34, 35, 36, 36A, 36B, 49, 50)

Management Objectives	
Short-Term Objective	Long-Term Objective
TBD	TBD
Pop. Goal	Increase
Hunter Days	>65,000

Square Miles =	8,145	3-Year Averages
% Public Land =	91%	Hunters per square mile =
Major Land Type =	Forest/Rangeland	Harvest per square mile =
		Success Rate =
		1.5
		0.42
		29%



Population Status										
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

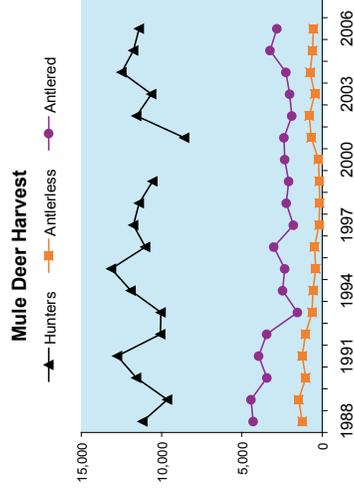
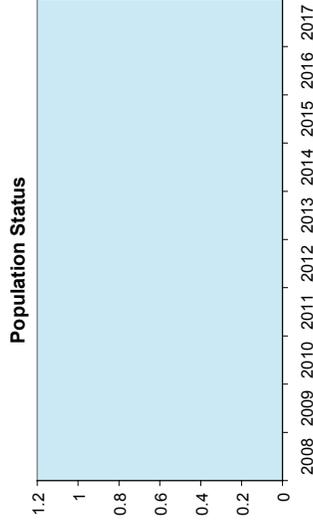
Note: Estimates in red are based on information other than sightability surveys.

Population Parameters										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doer	45	50	54	56	49	58	48	60		
Buck:Doer	13	13	15	16	17	27	14	19		
Fawn Survival	36%	77%	58%	39%	34%	77%	15%	67%		
Adult Doe Survival	ND	ND	ND	ND	ND	ND	82%	88%		

Note: Fawn:Doer expressed as fawns per 100 does; Buck:Doer expressed as bucks per 100 does

Fawn Survival = overwinter fawn survival (December - May)

Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



Year	Hunters	Hunter Days	Deer Harvest	
			Antlerless	Antlered
1988	11,185	58,514	1,248	4,298
1989	9,648	51,224	1,461	4,428
1990	11,571	66,657	1,025	3,437
1991	12,751	67,337	1,247	3,955
1992	10,084	57,686	1,040	3,458
1993	10,048	63,811	1,532	634
1994	11,915	69,870	572	2,471
1995	13,128	85,303	407	2,333
1996	11,009	61,582	475	3,019
1997	11,759	63,731	196	1,796
1998	11,398	64,171	156	2,238
1999	10,558	58,838	183	2,083
2000			229	2,328
2001	8,578	35,122	682	2,374
2002	11,559	52,611	808	1,891
2003	10,631	44,640	462	2,030
2004	12,483	56,309	757	2,255
2005	11,757	55,684	592	3,241
2006	11,400	54,025	551	2,820
2007				

Note: Harvest data prior to 1998 does not include primitive weapon harvest.

Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys										
Unit	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

**Management direction, performance targets, and strategies  
for the Central Mountains PMU .**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
Implement a mule deer monitoring program that provides annual estimates of population abundance  POP <sup>a</sup>	Evaluate seasonal movement patterns of mule deer that summer in GMU 49 but winter in other GMUs by 2010  Collect weights from ≥15 hunter-harvested fawns and 15 hunter-harvested yearlings annually in GMU 49 to increase data on herd condition and health	Continue to monitor radio-collared mule deer during spring and fall migration periods to assess timing of seasonal movements to GMU 50 winter ranges  Capture and radio-collar additional mule deer to determine migratory movements to GMUs 50, 52, and 52A
Provide mule deer hunting opportunities that reflect preferences and desires of hunters  POP	Conduct 2-4 public meetings annually to discern hunter desires and input  Manage some GMUs to provide “quality” or “high quality” opportunity based on hunter input	Provide hunting opportunities that meet the needs and desires of hunters
Improve key winter, summer, and transitional habitats on public and private lands that provide for mule deer populations that meet or exceed statewide objectives  HAB	Coordinate in treatment of 1,000 acres of invasive and noxious weeds annually  Attend 1-3 aspen working group meetings annually  Cooperate in 1-3 aspen restoration projects totaling more than 50 acres annually  Modify or remove >2 miles of fence annually to facilitate mule deer movements and effectiveness of habitat  Coordinate with the land management agencies to maintain existing riparian exclosures and fence ≥1 new area in need of protection annually  Use telemetry data or fecal plots to examine habitat use changes related to management changes by 2012	Work with land management agencies to identify and prioritize watersheds for aspen enhancement projects  Identify riparian areas where protection with fencing would benefit mule deer  Identify fence segments that impede mule deer movement and effective use of habitat  Continue efforts in Blaine County to minimize impacts of development on mule deer habitat  Work with Idaho Department of Lands (IDL) to enhance seed mixes used for post-fire restoration efforts  Initiate projects to modify habitat through different grazing schemes to determine changes in use by mule deer
Manage winter ranges to minimize negative effects of disturbance to mule deer and reduce illegal harvest  POP/NRP/ENF	Actively participate in the BLM-Blaine County travel management planning process	Minimize human disturbance to mule deer on important winter ranges in GMU 49  Incorporate appropriate access restrictions into the BLM/Blaine County travel management plan
Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives ENF	Develop an enforcement action plan in areas where conflicts between motorized and nonmotorized hunters are greatest	Improve compliance with the MVR
Increase public understanding of mule deer ecology and management COM/ POP/HAB	Conduct 1 workshop each year	Increase public support of mule deer management programs

Management Direction	Performance Targets	Strategies
<p>Increase IDFG involvement in short-term, site-specific, project review and implementation</p> <p>HAB/POP/NRP</p>	<p>Comment on all county, state, and federal land-use activities with potential to affect mule deer habitat annually</p> <p>Submit 1-2 project proposals through state/federal agencies or NGOs to benefit mule deer annually</p> <p>Reduce deer/vehicle collisions on Highway 75 in the Wood River Valley by 50% by 2017</p> <p>Reduce deer/vehicle collisions in the PMU by 25% by 2012</p>	<p>Work with ITD and appropriate local entities to identify and prioritize highway segments for projects that will reduce deer/vehicle collisions</p> <p>Manage deer populations, including use of antlerless harvest to reduce deer-vehicle collisions</p> <p>Continue collaboration with Blaine County to minimize impacts of development on mule deer habitat</p> <p>Actively pursue opportunity for IDFG involvement at the interdisciplinary team level in development of BLM Shoshone Field Office Resource Management Plan</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy



# Mule Deer Boise River Population Management Unit (Game Management Unit 39)



Management Objectives	
Short-Term Objective	Long-Term Objective
TBD	TBD
Maintain	Maintain
>40,000	>40,000

Square Miles =	2,444	3-Year Averages
% Public Land =	76%	Hunters per square mile =
Major Land Type =	Forest/Rangeland	Harvest per square mile =
		Success Rate =
		4.4
		1.35
		30%

Population Status										
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	66	73	71	76	51	53	56	57		
Buck:Doe	19	17	17	14	15	13	28	16		
Fawn Survival	58%	90%	48%	57%	38%	76%	59%	46%		
Adult Doe Survival	ND	ND	ND	ND	ND	ND	96%	95%		

Note: Fawn:Doe expressed as fawns per 100 does, Buck:Doe expressed as bucks per 100 does

Fawn Survival = overwinter fawn survival (December - May)

Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality

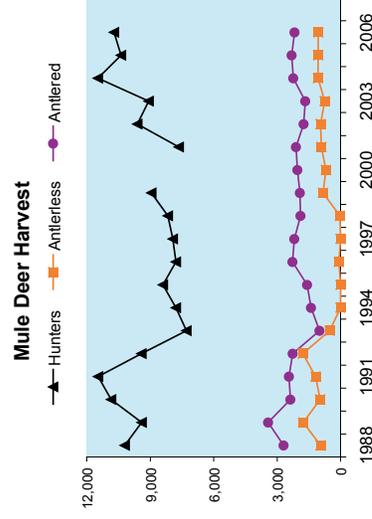
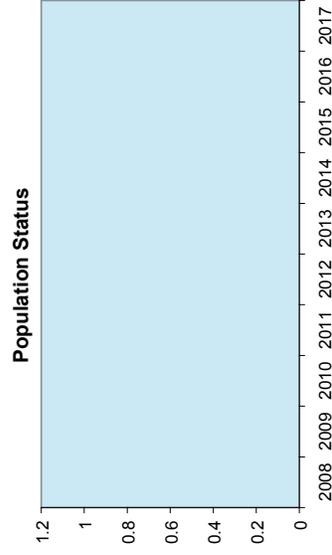
Harvest Statistics					
Year	Hunters	Hunter Days		Deer Harvest	
		Hunters	Antlerless	Antlered	% 4+ Points
1988	10,203	47,386	945	2,688	
1989	9,408	41,772	1,762	3,422	
1990	10,851	45,032	967	2,367	
1991	11,459	48,815	1,176	2,437	
1992	9,415	45,851	1,781	2,265	
1993	7,286	39,987	514	997	
1994	7,782	44,354	0	1,400	
1995	8,400	45,964	0	1,579	
1996	7,783	39,991	77	2,271	
1997	7,935	37,649	0	2,186	
1998	8,163	43,038	33	1,897	
1999	8,951	44,822	831	1,923	
2000			694	2,039	
2001	7,650	31,258	904	2,104	
2002	9,606	40,829	946	1,750	
2003	9,075	38,020	747	1,664	23%
2004	11,477	50,920	1,063	2,234	35%
2005	10,381	42,288	1,065	2,313	29%
2006	10,712	44,461	1,056	2,174	31%
2007					

Note: Harvest data prior to 1998 does not include primitive weapon harvest.

Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys										
Unit	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
39	21,422	ND	ND	21,047	ND	27,799	ND	26,569	ND	ND

Note: ND = no survey data available



**Management direction, performance targets, and strategies  
for the Boise River PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
<p>Improve key winter, summer and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB<sup>a</sup></p>	<p>Coordinate in treatment of 1,000 acres of invasive and noxious weeds annually</p> <p>Provide input on 3-5 development proposals on winter range habitats annually to minimize impacts to mule deer</p> <p>All land management agencies have mule deer habitat management guidelines</p> <p>Provide consultation on 3-5 projects annually to improve conditions for mule deer</p> <p>Submit 1-2 project proposals through state/federal agencies or NGOs to benefit mule deer annually</p>	<p>Use appropriate herbicides and methods to reduce invasive and noxious weeds on mule deer winter ranges, especially rush skeleton weed</p> <p>Work with other agencies and NGOs to protect winter range habitats along Boise Front and Danskin Front ranges</p> <p>Disseminate mule deer habitat management guidelines to all land management agencies</p> <p>Coordinate with land managers on projects that benefit mule deer</p> <p>Initiate projects through cost-share programs that benefit mule deer</p>
<p>Manage winter ranges to minimize negative effects of disturbance to mule deer and reduce illegal harvest</p> <p>HAB/COM</p>	<p>1-2 news articles annually in print media about impacts of human and pet disturbance of mule deer on winter range</p>	<p>Distribute information on impact of winter range disturbance</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>NRP/POP</p>	<p>Reduce vehicle collisions along Warm Springs Rd and Hwy 21 by 10%</p>	<p>Reduce deer-vehicle collisions and improve public safety</p>
<p>Maintain, improve, and manage access to hunting areas</p> <p>POP</p>	<p>Replacement or improvement of 20% of signs annually at critical access points and areas of disturbance on Boise River WMA</p>	<p>Improve public understanding of access regulations</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>HAB/NRP</p>	<p>Attend 4 meetings of Ada and Boise County Planning and Zoning Committees annually</p> <p>Participate in ≥2 meetings with land managers and NGOs on land acquisition or trade opportunities</p>	<p>Work with other agencies and NGOs to protect winter range habitats along Boise Front and Danskin Front ranges</p> <p>Maintain or increase involvement with county planning committees and provide input on development proposals from early stages</p>
<p>Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives</p> <p>ENF/NRP</p>	<p>Patrol 100 hours annually</p> <p>Assist land managers with sign installation on ≥5 motorized closure signs annually</p>	<p>Assist with patrol and enforcement of new Boise National Forest travel plan regulations</p> <p>Implement coordinated enforcement patrols on key mule deer winter ranges</p> <p>Target areas where MVR complaints are most common</p>
<p>Provide mule deer hunting opportunities that reflect preferences and desires of hunters</p> <p>POP</p>	<p>General any-weapon season structure with 20-30% hunter success</p> <p>25-35% mature bucks in harvest</p> <p>5-25 bucks/100 does post-season</p> <p>Maintain existing number of days in special buck hunt opportunities (early controlled buck hunt and general and controlled archery season)</p>	<p>Implement antlerless harvest when appropriate and at appropriate levels, including depredation hunts</p> <p>Implement a mixture of general and special management frameworks to provide quality or “high-quality” hunting opportunities</p> <p>Identify and manage deer population at appropriate density level</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

# Mule Deer

## Smoky-Bennett Population Management Unit (Game Management Units 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	>25,000

Square Miles =	3,982	3-Year Averages
% Public Land =	72%	Hunters per square mile =
Major Land Type =	Rangeland/Forest	Harvest per square mile =
		Success Rate =
		1.6
		0.7
		44%



Population Status		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Year	# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe		78	56	61	69	51	84	69	71		
Buck:Doe		34	42	34	34	33	38	34	31		
Fawn Survival		ND									
Adult Doe Survival		ND									

Note: Fawn:Doe expressed as fawns per 100 does, Buck:Doe expressed as bucks per 100 does  
 Fawn Survival = overwinter fawn survival (December - May)  
 Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality

### Harvest Statistics

Year	Hunters		Hunter Days		Deer Harvest	
	Hunters	Hunter Days	Antlerless	Antlered	% 4+ Points	
1988	7,799	37,301	2,227	3,701		
1989	8,089	41,681	4,422	3,045		
1990	6,824	35,871	1,866	2,275		
1991	7,890	37,055	2,816	2,190		
1992	7,056	29,874	4,346	2,107		
1993	3,321	21,245	1,824	1,025		
1994	3,498	22,030	898	993		
1995	3,648	22,646	1,157	1,445		
1996	3,916	19,298	1,165	1,564		
1997	4,728	23,308	1,222	1,324		
1998	3,990	21,203	1,130	1,450		
1999	4,446	22,688	1,278	1,802		
2000			1,415	1,861		
2001	3,894	14,145	1,835	1,848		
2002	5,016	19,837	1,737	1,536		
2003	4,951	18,391	1,176	1,451		48%
2004	7,996	33,112	1,459	1,563		42%
2005	5,592	21,381	1,205	1,415		42%
2006	5,494	21,571	1,317	1,439		47%
2007						

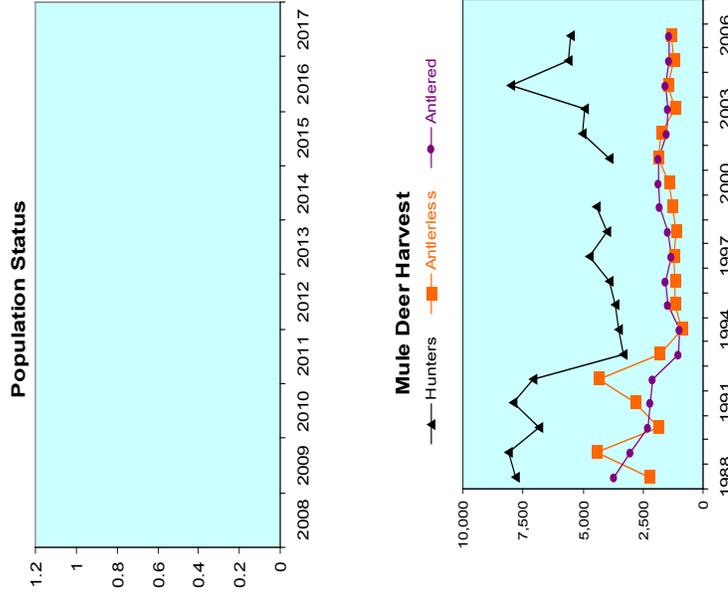
Note: Harvest data prior to 1998 does not include primitive weapon harvest.

Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

### Previous Trend Area Surveys

Unit	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



**Management direction, performance targets, and strategies  
for the Smoky-Bennett PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
Implement a statewide mule deer monitoring program that provides annual estimates of population abundance  POP <sup>a</sup>	Evaluate the efficacy of conducting ground-based pre-winter herd compositions surveys by January 2009 to reduce reliance on helicopters for surveys	Conduct pre-winter herd composition surveys in GMUs 45 and 52 by ground and helicopter  Compare ground-based herd composition surveys
	Create a database that reliably tracks physiological condition of mule deer wintering in GMU 45	Obtain pre-winter weights of ≥30 yearlings and 30 fawns annually  Measure yearling antler lengths and points at opening weekend check stations
Improve key winter, summer, and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives  HAB	Plant an average of 5,000 native shrub seedlings annually	Encourage use of native plant species for restoration projects and fire rehabilitation efforts on winter ranges  Work with BLM and IDL to enhance seed mixes used for post-fire restoration  Work with BLM to map distribution and develop control strategies for medusahead  Annually review and revise, as necessary, mule deer winter range polygons
	Improve 100 acres of aspen habitat annually	Identify and map potential aspen projects on BLM, USFS, IDL, and private lands  Collaborate with land management agencies on grant proposals for funding of aspen projects
Maintain, improve, and/or manage access to hunting areas  POP	Annually monitor use of Access Yes! properties to ensure efficient and effective use of funds	Install sign-in boxes at new and existing Access Yes! properties to monitor use
Manage winter ranges to minimize the negative effects of disturbance to mule deer and reduce illegal harvest  NRP/HAB/ENF/POP	Implement a winter range access management plan on important winter ranges in GMUs 45 and 52 by January 2009  Minimize human disturbance to mule deer on important winter ranges in Unit 48 by 2010	Develop a winter range access management proposal for consideration by BLM  Increase efforts to monitor human activities on winter ranges by IDFG personnel and volunteers  Increase enforcement patrols and surveillance activities  Identify areas where cross-country motorized travel by antler-shed collectors is a concern  Actively participate in the BLM/Blaine County travel management planning process

continued

Management Direction	Performance Targets	Strategies
<p>Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives</p> <p>NRP/HAB/ENF/POP</p>	<p>Reduce conflicts between motorized and nonmotorized hunters by 2012</p>	<p>Continue enforcement of the MVR in GMUs 45, 52, and 48</p> <p>Assist USFS with enforcement of the Motorized Vehicle Use Map on the Ketchum and Fairfield ranger districts</p> <p>Increase efforts to help hunters align their expectations regarding hunter densities and ATV/motorbike use, especially in GMU 43</p>
<p>Increase IDFG involvement in short-term, site-specific, project review and implementation</p> <p>NRP</p>	<p>Provide comments on 100% of land-use proposals that affect mule deer</p>	<p>Provide site-specific technical review of projects to avoid, minimize, and mitigate impacts to mule deer</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>NRP</p>	<p>Participate in all land-use planning efforts</p>	<p>Actively pursue opportunity for IDFG involvement at the interdisciplinary team level in development of BLMs Shoshone Field Office Resource Management Plan</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy



## Mule Deer Owyhee Population Management Unit (Game Management Units 40, 41, 42, 46, 47)



Management Objectives	
# of Deer	TBD
Pop. Goal	Increase
Hunter Days	>17,500

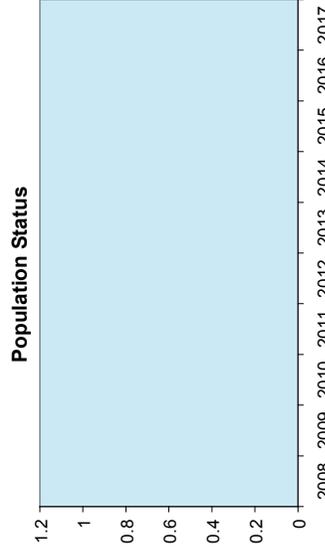
3-Year Averages	
Square Miles =	9,015
% Public Land =	85%
Major Land Type =	Desert/Rangeland
Hunters per square mile =	0.5
Harvest per square mile =	0.19
Success Rate =	40%

Population Status										
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	ND	65	ND							
Buck:Doe	ND	21	ND							
Fawn Survival	ND									
Adult Doe Survival	ND									

Note: Fawn:Doe expressed as fawns per 100 does, Buck:Doe expressed as bucks per 100 does  
Fawn Survival = overwinter fawn survival (December - May)  
Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality

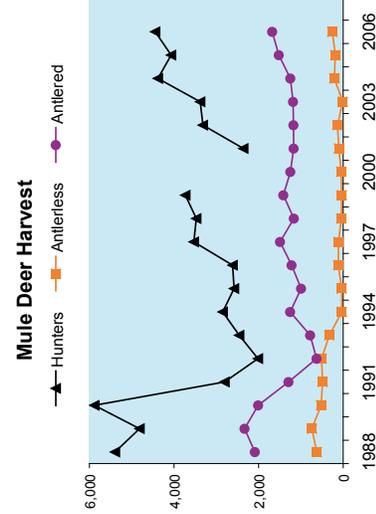


Harvest Statistics					
Year	Hunters	Hunter Days	Deer Harvest		% 4+ Points
			Antlerless	Antlered	
1988	5,397	17,901	626	2,086	
1989	4,817	19,259	742	2,333	
1990	5,884	21,364	522	2,012	
1991	2,803	10,481	489	1,294	
1992	2,015	9,779	513	630	
1993	2,460	13,863	326	782	
1994	2,850	15,339	33	1,253	
1995	2,579	13,521	35	995	
1996	2,615	10,274	119	1,219	
1997	3,530	14,452	111	1,491	
1998	3,471	15,173	45	1,167	
1999	3,733	18,649	36	1,415	
2000			48	1,247	
2001	2,362	6,940	102	1,171	
2002	3,316	10,711	135	1,176	
2003	3,382	10,558	12	1,183	24%
2004	4,379	15,416	208	1,251	20%
2005	4,067	13,332	185	1,524	22%
2006	4,442	14,454	259	1,678	19%
2007					

Note: Harvest data prior to 1998 does not include primitive weapon harvest.  
Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys										
Unit	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



**Management direction, performance targets, and strategies  
for the Owyhee PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
<p>Improve key winter, summer and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB<sup>a</sup></p>	<p>Plant an average of 5,000 native shrub seedlings annually</p> <p>Assist with rehabilitation efforts on IDL lands for the 2007 Murphy Complex Fire</p> <p>Provide consultation on 2-3 projects annually to improve conditions for mule deer</p>	<p>Enhance native plant communities on winter range</p> <p>Work with IDL and BLM to enhance seed mixes used for post-fire restoration whenever possible</p> <p>Recommend or provide seed mixes that will benefit mule deer</p> <p>Collect and sow sagebrush seed adapted to the area</p> <p>Disseminate mule deer habitat management guidelines to all land management agencies</p> <p>Coordinate with land managers on projects that benefit mule deer</p>
<p>Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives</p> <p>ENF/NRP</p>	<p>Patrol 100 hours annually – Southwest Region</p> <p>Annually assist land managers with installation of ≥5 signs for motorized vehicle rules</p>	<p>Assist with patrol and enforcement of new Owyhee Canyonlands Initiative travel regulations upon adoption</p> <p>Assist BLM with road/trail designation</p> <p>Implement coordinated enforcement patrols on key mule deer winter ranges</p> <p>Target areas where MVR complaints are most common</p>
<p>Implement a mule deer monitoring program that provides annual estimates of population abundance</p> <p>POP</p>	<p>Sightability survey estimates for PMU by 2010</p> <p>Fawn survival monitoring implemented by 2011 in PMU</p>	<p>Increase knowledge of population status, trend, and movements within PMU</p> <p>Increase information sharing among Idaho, Oregon, and Nevada wildlife agencies on “transboundary” deer populations</p>
<p>Implement proactive measures to reduce and minimize mule deer depredations</p> <p>POP</p>	<p>Reinstate ≥30-day antlerless youth hunt in agricultural areas in GMUs 40 and 41</p>	<p>Target general season antlerless harvest to reduce need for kill permits and depredation in chronic problem areas</p>
<p>Increase IDFG involvement in short-term, site-specific, project review and implementation</p> <p>NRP</p>	<p>Provide comments on 100% of land-use proposals that affect mule deer</p>	<p>Provide site-specific technical review of projects to avoid, minimize, and mitigate impacts to mule deer</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>NRP</p>	<p>Participate in all land-use planning efforts</p>	<p>Continue IDFG involvement at the interdisciplinary team level in development of BLMs Jarbidge Field Office Resource Management Plan</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer South Hills Population Management Unit (Game Management Units 54, 55)



Management Objectives	
Short-Term Objective	Long-Term Objective
TBD	TBD
Pop. Goal	Increase
Hunter Days	>10,000

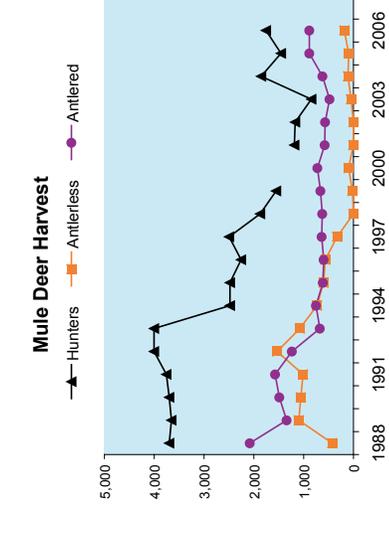
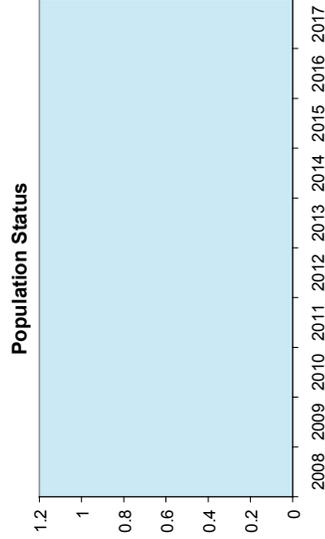
Square Miles =	2,378	3-Year Averages
% Public Land =	56%	Hunters per square mile =
Major Land Type =	Rangeland	Harvest per square mile =
		Success Rate =
		0.7
		0.39
		55%

Population Status		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Year	# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe		53	59	56	52	66	69	50	46		
Buck:Doe		23	23	26	16	30	29	28	25		
Fawn Survival		59%	63%	59%	80%	85%	73%	45%	69%		
Adult Doe Survival		ND									

Note: Fawn:Doe expressed as fawns per 100 does; Buck:Doe expressed as bucks per 100 does  
Fawn Survival = overwinter fawn survival (December - May)  
Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



Year	Hunters	Hunter Days	Deer Harvest		% 4+ Points
			Antlerless	Antlered	
1988	3,700	12,182	425	2,081	
1989	3,654	12,252	1,099	1,341	
1990	3,700	12,980	1,055	1,488	
1991	3,755	12,536	1,013	1,573	
1992	4,005	11,134	1,534	1,235	
1993	4,005	13,303	1,077	674	
1994	2,480	8,676	731	752	
1995	2,480	8,448	600	613	
1996	2,255	6,634	567	596	
1997	2,496	11,409	329	639	
1998	1,875	8,642	0	626	
1999	1,552	7,411	20	661	
2000			99	724	
2001	1,189	5,435	3	579	
2002	1,169	5,994	1	568	
2003	846		47	479	33%
2004	1,852	8,248	109	622	43%
2005	1,457	5,963	97	887	41%
2006	1,757	8,366	184	886	48%
2007					

Note: Harvest data prior to 1998 does not include primitive weapon harvest.  
Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

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

Note: ND = no survey data available

**Management direction, performance targets, and strategies for the South Hills PMU.**

Management Direction	Performance Targets	Strategies
<p>Manage winter ranges to minimize negative effects of disturbance to mule deer and reduce illegal harvest</p> <p>ENF/POP<sup>a</sup></p>	<p>Evaluate, recommend, and implement needed access restrictions to winter ranges by Sep 2010</p>	<p>Monitor compliance with existing Indian Springs and Dry Creek winter range closures.</p> <p>Evaluate need for winter range access restrictions in GMU 55</p>
<p>Implement a statewide mule deer monitoring program that provides annual estimates of population abundance</p> <p>POP</p>	<p>Estimate buck mortality from hunter-harvest in relation to road densities in GMU 54 by 2010</p> <p>Evaluate efficacy of ground-based pre-winter herd compositions surveys by Jan 2010 to reduce reliance on helicopter for surveys</p> <p>A database that reliably tracks the physiological condition of mule deer in the PMU</p>	<p>Compile and analyze existing radio telemetry and survival data for GMU 54</p> <p>Radio-collar and monitor an additional 25 bucks during hunting season</p> <p>Conduct pre-winter herd composition surveys in GMU 54 by ground and helicopter</p> <p>Obtain pre-winter weights of ≥30 yearlings and 30 fawns annually</p> <p>Measure yearling antler lengths and points at opening weekend check stations</p>
<p>Improve key winter, summer, and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB</p>	<p>Plant an average of 5,000 native shrub seedlings annually</p> <p>Treat an average of 100 acres of aspen stands annually</p>	<p>Work with College of Southern Idaho Horticulture Department to develop overwinter grow-out techniques that result in improved survivorship at field transplant sites</p> <p>Monitor success of shrub planting efforts</p> <p>Work with BLM and IDL to enhance seed mixes used for post-fire restoration</p> <p>Work with land management agencies to ensure sites are available for enhancement and restoration projects</p> <p>Work closely with BLM and USFS to ensure juniper management projects in winter ranges are carefully designed to benefit mule deer</p>
<p>Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives</p> <p>ENF/POP</p>	<p>Assess whether additional motorized vehicle use restrictions are necessary following implementation of the Motorized Vehicle Use Map (MVUM) on the Sawtooth National Forest by March 2009</p>	<p>Monitor buck survival using radio telemetry</p> <p>Assess hunter opinions and satisfaction at check stations</p>
<p>Increase IDFG involvement in short-term, site-specific, project review and implementation</p> <p>NRP</p>	<p>Provide comments on 100% of land-use proposals that affect mule deer</p>	<p>Provide site-specific technical review of projects to avoid, minimize, and mitigate impacts to mule deer</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>NRP</p>	<p>Participate in all land-use planning efforts</p>	<p>Actively pursue opportunity for IDFG involvement at the interdisciplinary team level in development of BLMs Burley Field Office Resource Management Plan</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer Bannock Population Management Unit (Game Management Units 56, 57, 70, 71, 73, 73A, 74, 75, 77, 78)

Management Objectives	
Short-Term Objective	Long-Term Objective
TBD	TBD
Increase	Increase
>35,000	>50,000

Square Miles =	5,470	3-Year Averages
% Public Land =	48%	Hunters per square mile =
Major Land Type =	Rangeland/Forest	Harvest per square mile =
		Success Rate =
		2.0
		0.45
		23%

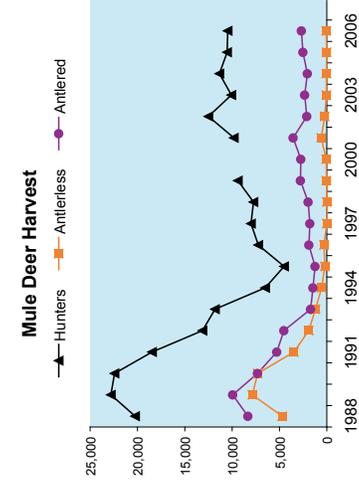
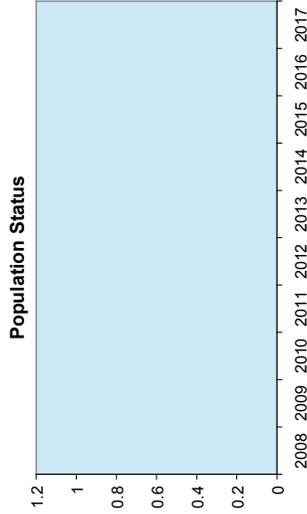


Population Status										
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	65	71	65	65	44	58	56	49		
Buck:Doe	21	22	14	21	11	14	17	14		
Fawn Survival	54%	76%	30%	89%	50%	73%	ND	76%		
Adult Doe Survival	88%	88%	88%	ND	ND	ND	ND	100%		

Note: Fawn:Doe expressed as fawns per 100 does, Buck:Doe expressed as bucks per 100 does  
Fawn Survival = overwinter fawn survival (December - May)  
Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



Year	Hunters		Hunter Days		Deer Harvest		% 4+ Points
	Hunters	Antlered	Hunter Days	Antlerless	Antlered	Antlerless	
1988	20,245		84,724	4,719	8,336		
1989	22,813		104,488	7,866	9,938		
1990	22,421		103,390	7,304	7,318		
1991	18,463		79,026	3,471	5,279		
1992	13,134		64,131	1,907	4,531		
1993	11,811		74,376	1,202	1,709		
1994	6,514		34,867	541	1,461		
1995	4,508		26,007	197	1,233		
1996	7,245		37,326	300	1,895		
1997	8,009		39,243	9	1,789		
1998	7,743		41,047	0	1,964		
1999	9,396		50,034	34	2,786		
2000				56	2,751		
2001	9,813		37,067	589	3,566		
2002	12,510		54,905	218	2,105		
2003	10,080		36,303	41	2,332	29%	
2004	11,343		21,104	38	2,060	35%	
2005	10,525		43,199	23	2,521	43%	
2006	10,458		42,556	69	2,678	45%	
2007							

Note: Harvest data prior to 1988 does not include primitive weapon harvest.  
Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys										
Unit	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

**Management direction, performance targets, and strategies  
for the Bannock PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
<p>Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives</p> <p>NRP/HAB/ENF/POP<sup>a</sup></p>	<p>Assess motorized vehicle use by hunters following implementation of the Motorized Vehicle Use Map on the Sawtooth National Forest by March 2009</p>	<p>Encourage a net reduction in motorized road and trail densities in GMU 56 from 2007 level</p> <p>Improve buck security habitat</p> <p>Increase nonmotorized hunting opportunities</p>
<p>Maintain, improve, and manage access to hunting areas</p> <p>POP</p>	<p>Increase Access Yes! bids in GMUs 56 and 57 by 50% by 2012</p>	<p>Contact landowners that have suitable mule deer habitat</p> <p>Contact landowners that have property well suited for MDI funded habitat projects</p>
<p>Provide mule deer hunting opportunities that reflect preferences and desires of hunters</p> <p>POP</p>	<p>Maintain season lengths approximately equal to adjoining GMUs/PMUs</p> <p>Offer ≥1 “quality” or “high-quality” buck hunting opportunity</p>	<p>Seek alternatives to antler-point regulations in GMUs 56, 70, 73</p> <p>Provide a mix of general and controlled hunting opportunities</p>
<p>Improve key winter, summer and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB</p>	<p>Interseed 1000 acres of existing fields with forbs, shrubs, or other browse species per year</p> <p>Complete removal and replacement of the Stone Deer Fence by June 2008</p> <p>Actively pursue restoration and improvement efforts of the Stone winter range to mitigate effects of multiple fires</p>	<p>Enhance and improve Conservation Reserve Program lands to benefit mule deer</p> <p>Work with BLM to ensure the Stone Deer Fence is replaced with a wildlife-friendly, barbed wire fence to facilitate deer movement to important winter ranges</p> <p>Implement GMU 56 winter range plan and update as needed</p>
<p>Achieve objectives of the MDI Action Plan</p> <p>POP/HAB/COM/ENF/NRP</p>	<p>Multiple (see MDI Action Plan at <a href="http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf">http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf</a>)</p>	<p>Multiple (see MDI Action Plan at <a href="http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf">http://fishandgame.idaho.gov/cms/hunt/MDI/muledeer_draft.pdf</a>)</p>
<p>Increase IDFG involvement in short-term, site-specific, project review and implementation</p> <p>NRP</p>	<p>Provide comments on 100% of land-use proposals that affect mule deer</p>	<p>Provide site-specific technical review of projects to avoid, minimize, and mitigate impacts to mule deer</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>NRP</p>	<p>Participate in all land-use planning efforts</p>	<p>Actively pursue opportunity for IDFG involvement at the interdisciplinary team level in development of BLMs Burley Field Office Resource Management Plan</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer Caribou Population Management Unit (Game Management Units 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

	3-Year Averages
Square Miles =	3,875
% Public Land =	56%
Major Land Type =	Rangeland/Forest
Hunters per square mile =	2.2
Harvest per square mile =	0.43
Success Rate =	19%



### Population Status

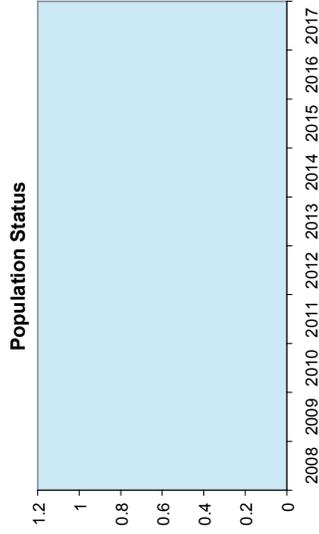
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

### Population Parameters

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	70	68	61	55	52	66	59	60		
Buck:Doe	15	17	8	15	13	17	13	9		
Fawn Survival	79%	75%	8%	76%	56%	56%	36%	84%		
Adult Doe Survival	ND	86%								

Note: Fawn:Doe expressed as fawns per 100 does, Buck:Doe expressed as bucks per 100 does  
Fawn Survival = overwinter fawn survival (December - May)  
Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



### Harvest Statistics

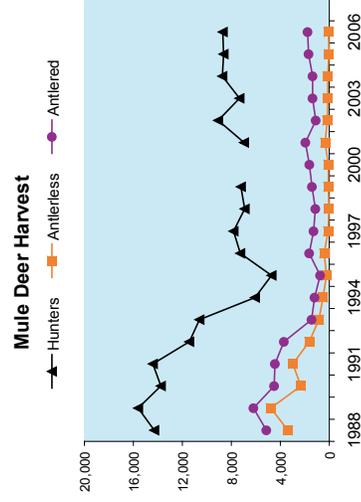
Year	Hunters	Hunter Days	Deer Harvest		% 4+ Points
			Antlerless	Antlered	
1988	14,300	67,372	3,376	5,132	
1989	15,606	80,306	4,776	6,193	
1990	13,761	67,253	2,332	4,512	
1991	14,399	70,747	2,969	4,436	
1992	11,435	67,963	1,647	3,711	
1993	10,596	72,009	850	1,442	
1994	6,057	31,121	526	1,200	
1995	4,711	27,283	221	744	
1996	7,267	41,292	420	1,640	
1997	7,824	45,633	90	1,279	
1998	6,910	40,698	35	1,134	
1999	7,212	46,778	79	1,416	
2000			77	1,633	
2001	6,958	29,832	334	1,959	
2002	9,078	42,073	158	1,102	
2003	7,329	28,505	131	1,361	25%
2004	8,738	41,685	125	1,361	30%
2005	8,629	42,593	31	1,694	33%
2006	8,703	43,859	73	1,771	38%
2007					

Note: Harvest data prior to 1998 does not include primitive weapon harvest.  
Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

### Previous Trend Area Surveys

Unit	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



## Management direction, performance targets, and strategies for the Caribou PMU.

Management Direction	Performance Targets	Strategies
<p>Improve key winter, summer, and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB<sup>a</sup></p>	<p>Complete population surveys to monitor response of habitat improvements</p> <p>Complete winter range management plans as specified in the MDI Action Plan</p> <p>Interseed 1,000 acres of existing fields with forbs, shrubs, or other browse species per year</p> <p>Implement large-scale habitat improvement projects on summer range averaging &gt;1,000 acres each year</p> <p>Radio-monitor mule deer annually to collect data on seasonal movements and habitat use</p> <p>Complete research of mule deer habitat use on Tex Creek WMA by 2012</p>	<p>Protect and enhance Wolverine (GMU 69) winter range</p> <p>Protect and enhance Soda Hills winter range</p> <p>Enhance and improve Conservation Reserve Program lands to benefit mule deer</p> <p>Protect and enhance Tex Creek winter ranges</p> <p>Improve knowledge of summer habitat use by adult does in the Tex Creek herd</p>
<p>Manage mule deer populations commensurate with habitat capabilities to maximize reproduction performance and overall herd health</p> <p>POP</p>	<p>Complete an investigation of impacts of elk to wintering mule deer populations</p> <p>Address conflicts through management to maintain separation of mule deer and elk on winter range as warranted</p>	<p>Minimize potential competition between mule deer and elk</p>
<p>Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives</p> <p>HAB</p>	<p>Manage access on IDFG-managed lands to minimize disturbance from snowmobiles and ATVs</p>	<p>Reduce disturbance to wintering mule deer on WMAs</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>POP</p>	<p>Provide technical assistance to ITD and other transportation agencies to utilize road redesign, reconstruction, public information, and signing opportunities to enhance mule deer and other wildlife passage and public safety</p>	<p>Minimize population level impacts from highway mortality</p>
<p>Provide mule deer hunting opportunities that reflect the preferences and desires of hunters</p> <p>POP</p>	<p>Maintain season lengths approximately equal to adjoining GMUs or PMUs</p> <p>Maintain or exceed plan criteria for buck/doe ratios</p>	<p>Improve hunting opportunities and hunter satisfaction</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer Palisades Population Management Unit (Game Management Units 64, 65, 67)



Square Miles =	994	3-Year Averages
% Public Land =	52%	Hunters per square mile =
Major Land Type =	Rangeland/Forest	Harvest per square mile =
		Success Rate =
		1.9
		0.35
		18%

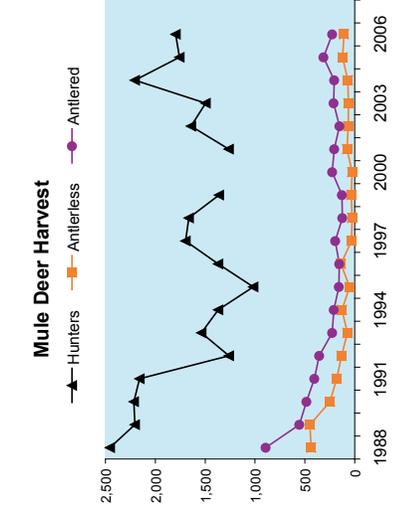
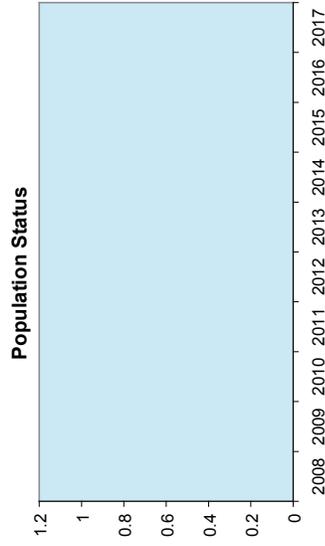
Management Objectives		Short-Term Objective	Long-Term Objective
# of Deer	TBD	TBD	
Pop. Goal	Maintain	Increase	
Hunter Days	>7,500	>9,000	

Population Status		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Year											
# of Deer											

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	ND	62	73	76	73	96	ND	83	ND		
Buck:Doe	ND	25	21	22	33	39	ND	ND	ND		
Fawn Survival	62%	74%	36%	36%	92%	54%	68%	16%	64%		
Adult Doe Survival	ND	ND	ND	ND	ND	93%	95%				

Note: Fawn:Doe expressed as fawns per 100 does, Buck:Doe expressed as bucks per 100 does  
Fawn Survival = overwinter fawn survival (December - May)  
Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



Year	Hunters	Hunter Days	Deer Harvest	
			Antlerless	Antlered
1988	2,456	10,844	438	894
1989	2,206	9,936	450	555
1990	2,216	12,382	249	484
1991	2,159	10,860	182	405
1992	1,261	6,801	133	356
1993	1,537	10,833	74	225
1994	1,368	7,084	129	209
1995	1,018	6,887	51	159
1996	1,370	9,054	139	154
1997	1,696	9,161	33	196
1998	1,663	8,433	26	125
1999	1,360	7,611	34	128
2000			26	226
2001	1,264	5,075	78	206
2002	1,641	7,116	66	152
2003	1,496	5,429	64	212
2004	2,206	10,406	70	206
2005	1,757	8,323	123	313
2006	1,796	8,408	107	226
2007				

Note: Harvest data prior to 1998 does not include primitive weapon harvest.  
Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys		1999	2000	2001	2002	2003	2004	2005	2006	2007
Unit	67	1,777	ND	1,542	2,252	ND	2,503	ND	2,911	ND

Note: ND = no survey data available

**Management direction, performance targets, and strategies  
for the Palisades PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
<p>Improve key winter, summer, and transitional habitats on public and private land that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB<sup>a</sup></p>	<p>Protect 640 acres of habitat on Heise winter range by 2011</p>	<p>Work with USFS, BOR, and private landowners to identify ways to improve and protect Swan Valley winter range</p> <p>Work with private landowners to protect key winter ranges</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>HAB/NRP</p>	<p>Pursue citation of the Idaho Mule Deer Management Plan in BLM's revised Medicine Lodge Resource Management Plan</p> <p>A plan with USFS to enhance the Swan Valley winter range and affect ≥1,000 acres with that plan by 2011</p>	<p>Incorporate Region 6 environmental staff biologist on BLM interdisciplinary team</p>
<p>Reduce illegal harvest and commercialization of unlawfully taken mule deer</p> <p>ENF</p>	<p>Conduct 6 joint OHV patrols/year with USFS, BLM, and County</p> <p>Evaluation of buck mortality</p>	<p>Increase OHV patrols</p> <p>Radio-mark and monitor bucks to determine cause of mortality</p> <p>Determine impacts of poaching in this PMU</p>

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer Island Park Population Management Unit (Game Management Units 60, 60A, 61, 62, 62A)



Management Objectives	
Short-Term Objective	Long-Term Objective
TBD	TBD
Pop. Goal	Increase
Hunter Days	>20,000

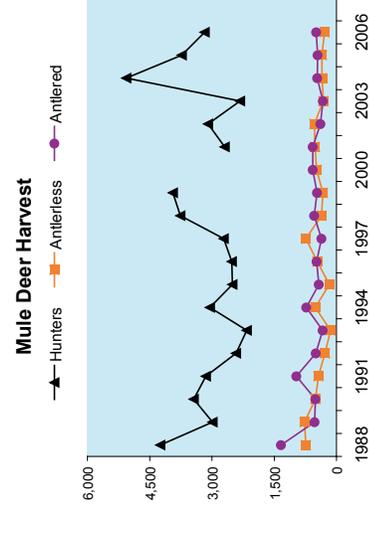
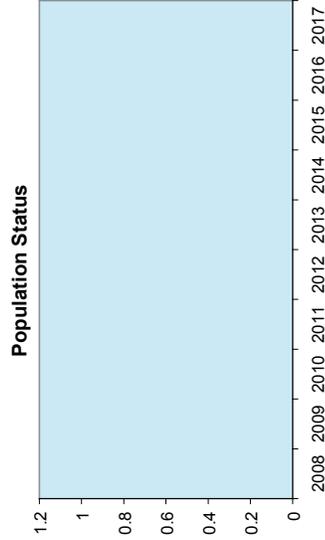
Square Miles =	2,886	3-Year Averages
% Public Land =	62%	Hunters per square mile =
Major Land Type =	Forest/Desert	Harvest per square mile =
		Success Rate =
		1.4
		0.28
		20%

Population Status										
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	ND	79	73	92	75	99	79	ND	ND	ND
Buck:Doe	ND	24	19	21	21	43	31	ND	ND	ND
Fawn Survival	ND	ND	ND	ND	84%	ND	ND	ND	ND	ND
Adult Doe Survival	ND	ND	ND	ND	ND	ND	93%	95%		

Note: Fawn: Doe expressed as fawns per 100 does; Buck: Doe expressed as bucks per 100 does  
Fawn Survival = overwinter fawn survival (December - May)  
Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality



Year	Hunters	Hunter Days	Deer Harvest	
			Antlerless	Antlered
1988	4,243	19,936	737	1,338
1989	2,986	14,803	770	527
1990	3,441	15,291	508	507
1991	3,146	14,396	435	967
1992	2,420	11,679	279	497
1993	2,159	13,411	141	331
1994	3,050	16,931	514	727
1995	2,508	15,896	172	426
1996	2,522	16,200	463	480
1997	2,719	13,050	738	363
1998	3,760	21,098	362	538
1999	3,940	23,200	328	466
2000			477	573
2001	2,692	10,868	517	572
2002	3,095	14,123	530	386
2003	2,321	8,812	317	328
2004	5,063	27,411	347	461
2005	3,725	19,882	349	456
2006	3,176	19,171	287	488
2007				

Note: Harvest data prior to 1998 does not include primitive weapon harvest.  
Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys										
Unit	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

**Management direction, performance targets, and strategies  
for the Island Park PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts  HAB/NRP <sup>a</sup>	Pursue citation of the Idaho Mule Deer Management Plan in BLM's revised Medicine Lodge Resource Management Plan  Protection of an additional 3,000 acres at Sand Creek WMA	Incorporate the Region 6 environmental staff biologist on the BLM interdisciplinary team  Work with private landowners to protect key winter ranges
Reduce illegal harvest and commercialization of unlawfully taken mule deer  ENF	6 joint OHV patrols/year with USFS, BLM, and County  Winter range patrol schedule	Increase OHV patrols  Schedule weekly patrols beginning Nov 15 through antler drop each year

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer Mountain Valley Population Management Unit (Game Management Units 21A, 29, 30, 30A, 37, 37A, 51, 58, 59, 59A)

Management Objectives	
# of Deer	Long-Term Objective
Pop. Goal	TBD
Hunter Days	Increase
	>25,000

3-Year Averages	
Square Miles =	4,988
% Public Land =	87%
Major Land Type =	Forest/Rangeland
Hunters per square mile =	1.1
Harvest per square mile =	0.32
Success Rate =	30%



Population Status										
Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

Population Parameters										
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doer	59	45	60	58	37	72	56	46		
Buck:Doer	16	10	11	11	12	23	19	11		
Fawn Survival	32%	81%			57%	88%	17%	70%		
Adult Doe Survival	ND	ND	ND	ND	ND	ND	91%	96%		

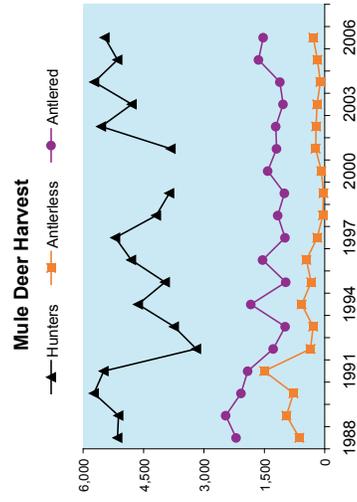
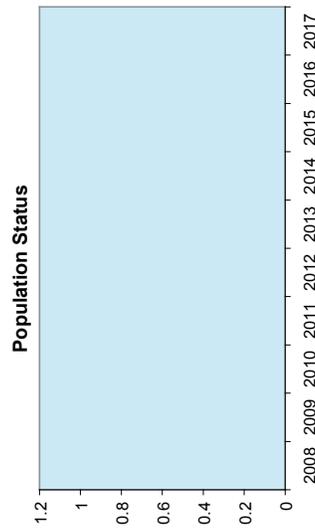
Note: Fawn:Doer expressed as fawns per 100 does, Buck:Doer expressed as bucks per 100 does  
Fawn Survival = overwinter fawn survival (December - May)  
Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality

	Hunters	Hunter Days	Deer Harvest	
			Antlerless	Antlered
1988	5,144	24,856	629	2,200
1989	5,120	27,463	951	2,458
1990	5,730	26,705	776	2,077
1991	5,489	24,113	1,504	1,914
1992	3,189	19,959	351	1,279
1993	3,740	26,361	290	981
1994	4,633	26,566	569	1,832
1995	3,968	25,240	339	966
1996	4,805	27,200	455	1,542
1997	5,198	26,432	186	984
1998	4,187	20,835	49	1,167
1999	3,860	19,249	27	1,001
2000			84	1,413
2001	3,826	13,534	223	1,196
2002	5,550	21,266	215	1,214
2003	4,791	16,959	192	1,036
2004	5,721	25,390	109	1,114
2005	5,144	22,054	181	1,642
2006	5,464	22,465	283	1,527
2007				

Note: Harvest data prior to 1998 does not include primitive weapon harvest.  
Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

Previous Trend Area Surveys										
Unit	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
29	592	521	676	730	798	885	685	ND	ND	ND
30/30A	ND	1,411	1,792	1,453	996	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	1,391	1,900	1,407	ND	2,323	ND	1,740

Note: ND = no survey data available



**Management direction, performance targets, and strategies  
for the Mountain-Valley PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
Provide mule deer hunting opportunities that reflect preferences and desires of hunters  POP <sup>a</sup>	Conduct 2-4 public meetings annually to discern hunter desires and input  Provide an appropriate number of units managed to provide “quality” or “high-quality” opportunity based on hunter input	Evaluate hunter desires and expectations  Implement a mixture of general and special management frameworks
Improve key winter, summer, and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives  HAB	Coordinate in treatment of 1,000 acres of invasive and noxious weeds annually  Attend 1-3 aspen working group meetings annually  Cooperate in 1-3 aspen restoration projects totaling 50 acres annually  Coordinate with land management agencies to maintain existing riparian enclosures and fence ≥1 new area in need of protection annually  Use telemetry data or fecal plots to examine habitat use changes  Modify or remove >2 miles of fence annually  Use telemetry data or fecal plots to examine habitat use changes	Use appropriate herbicides to reduce invasive and noxious weeds on mule deer winter ranges  Identify and prioritize watersheds for aspen restoration or enhancement projects  Maintain existing enclosure fences and identify new areas in need of fencing in critical deer riparian areas  Monitor potential changes in mule deer use of modified habitat  Identify and retrofit fence segments that are not necessary or need modification  Coordinate with land managers on projects that benefit mule deer  Initiate projects through cost-share programs that benefit mule deer  Initiate projects to modify habitat through different grazing schemes to determine changes in use by mule deer
Reduce illegal harvest and commercialization of mule deer ENF	Patrol 100 hours on winter ranges annually	Implement coordinated enforcement patrols on key mule deer winter ranges
Improve management of motorized vehicle use to reduce conflicts between motorized and nonmotorized hunters and meet buck management objectives. ENF	Develop an enforcement action plan in areas where conflicts between motorized and nonmotorized hunters are greatest	Increase compliance with the MVR
Increase public understanding of mule deer ecology and management COM/POP/HAB	Conduct 1 workshop each year	Increase public support of management programs
Increase IDFG involvement of short-term, site-specific, project review and implementation  HAB/POP/NRP	Reduce deer-vehicle collisions by 10% by 2010  Submit 1-2 project proposals through state/federal agencies or NGOs to benefit mule deer annually  Provide consultation on 10-15 projects annually to improve conditions for mule deer	Manage deer populations to reduce deer-vehicle collisions

<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer Snake River Population Management Unit (Game Management Units 38, 52A, 53, 63, 63A, 68, 68A, 68B)



### 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 =	0.3
Major Land Type =	Desert/Agriculture	Harvest per square mile =	0.06
		Success Rate =	19%

### Population Status

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

### Population Parameters

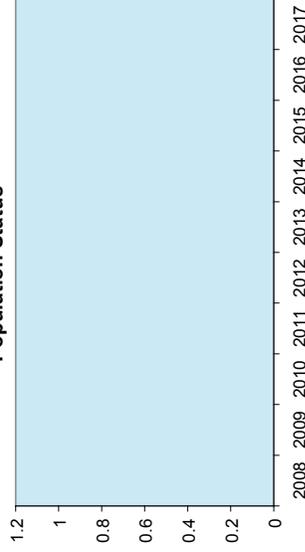
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	ND									
Buck:Doe	ND									
Fawn Survival	ND									
Adult Doe Survival	ND									

Note: Fawn:Doe expressed as fawns per 100 does; Buck:Doe expressed as bucks per 100 does

Fawn Survival = overwinter fawn survival (December - May)

Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality

### Population Status



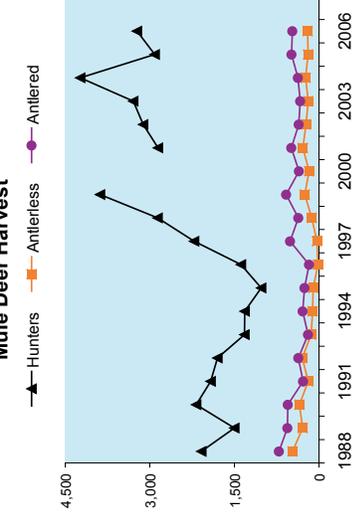
### Harvest Statistics

Year	Hunters	Hunter Days	Deer Harvest	
			Antlerless	Antlered
1988	2,086	8,462	467	709
1989	1,499	6,675	289	559
1990	2,178	8,789	349	553
1991	1,920	8,551	189	282
1992	1,799	8,581	297	365
1993	1,322	7,269	140	194
1994	1,318	7,772	115	289
1995	1,023	5,579	102	255
1996	1,383	8,350	18	177
1997	2,213	13,060	35	512
1998	2,861	16,392	127	366
1999	3,880	22,335	254	580
2000			174	356
2001	2,854	9,431	286	492
2002	3,117	14,679	231	357
2003	3,294	12,690	192	332
2004	4,233	21,237	236	372
2005	2,914	12,208	194	487
2006	3,228	15,220	202	471
2007				

Note: Harvest data prior to 1998 does not include primitive weapon harvest.

Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

### Mule Deer Harvest



### Previous Trend Area Surveys

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

Note: ND = no survey data available

**Management direction, performance targets, and strategies  
for the Snake River PMU.**

<b>Management Direction</b>	<b>Performance Targets</b>	<b>Strategies</b>
<p>Improve key winter, summer, and transitional habitats that provide for mule deer populations that meet or exceed statewide objectives</p> <p>HAB<sup>a</sup></p>	<p>Restore 100,000 acres of habitat in GMUs 53 and 52A to healthy sagebrush-steppe communities by 2017</p>	<p>Encourage and support BLM restoration projects to increase sagebrush habitat and native plant communities</p> <p>Assist IDL to improve habitat and enhance seed mixes used for post-fire restoration of IDL lands, whenever possible</p>
<p>Implement a mule deer monitoring program that provides annual estimates of population abundance</p> <p>POP</p>	<p>Increase knowledge of mule deer migration patterns and winter use areas in GMUs 52A and 53 by Jun 2012</p> <p>Revise winter range polygons as additional data becomes available</p>	<p>Radio-collar mule deer to determine migratory movements from GMUs 49, 50, and 52</p> <p>Use fixed-wing aerial surveys to periodically monitor and document winter mule deer distribution</p>
<p>Increase IDFG involvement in long-term, landscape-scale, land-use planning efforts</p> <p>NRP</p>	<p>Actively participate in development of Shoshone and Burley BLM Field Office Resource Management Plans</p>	<p>Work with BLM to improve mule deer habitat in GMUs 52A and 53</p>
<p>Increase IDFG involvement in short-term, site-specific, project review and implementation</p> <p>NRP</p>	<p>Provide comments on all proposed projects and developments in mule deer habitat</p>	<p>Assist counties and land management agencies to minimize negative affects of projects and developments in mule deer habitats</p>

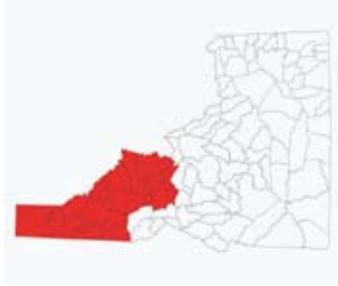
<sup>a</sup>Program Lead: POP – Populations; HAB – Habitat; ENF – Enforcement; COM – Communications; NRP – Natural Resource Policy

## Mule Deer

### North Idaho Population Management Unit (Game Management Units 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
TBD	TBD
Maintain	Maintain
>25,000	>25,000

3-Year Averages	
Square Miles =	16,997
% Public Land =	69%
Major Land Type =	Forest
Hunters per square mile =	0.3
Harvest per square mile =	0.07
Success Rate =	24%



### Population Status

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
# of Deer										

Note: Estimates in red are based on information other than sightability surveys.

### Population Parameters

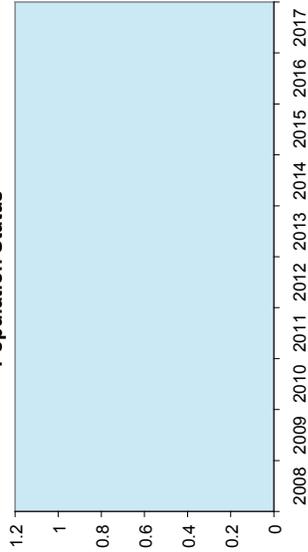
Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Fawn:Doe	ND									
Buck:Doe	ND									
Fawn Survival	ND									
Adult Doe Survival	ND									

Note: Fawn:Doe expressed as fawns per 100 does, Buck:Doe expressed as bucks per 100 does

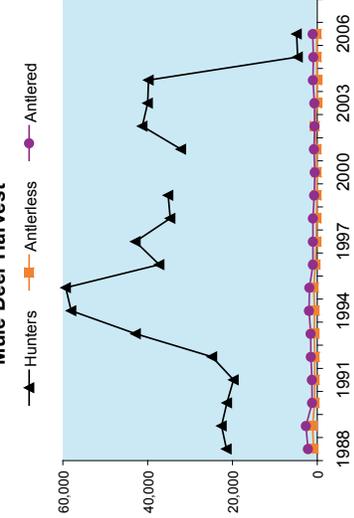
Fawn Survival = overwinter fawn survival (December - May)

Adult Doe Natural Survival = annual survival (June - May) excluding harvest mortality

### Population Status



### Mule Deer Harvest



### Harvest Statistics

Year	Hunters	Hunter Days	Deer Harvest		% 4+ Points
			Antlerless	Antlered	
1988	21,413	170,683	875	2,189	
1989	22,569	171,588	1,139	2,697	
1990	21,306	284,389	645	1,202	
1991	19,735	295,998	649	1,281	
1992	24,836	184,854	570	1,529	
1993	42,836	431,335	729	1,548	
1994	58,030	559,963	642	1,941	
1995	59,297	585,526	845	1,858	
1996	37,291	274,532	467	1,016	
1997	42,856	250,429	268	1,012	
1998	34,682	201,162	205	1,035	
1999	35,155	215,829	146	731	
2000			139	608	
2001	32,125	187,205	176	778	
2002	41,280	246,958	574	622	
2003	39,979	236,161	76	700	52%
2004	39,829	238,966	100	1,020	56%
2005	4,651	29,084	143	948	56%
2006	4,854	31,337	147	1,065	56%
2007					

Note: Harvest data prior to 1998 does not include primitive weapon harvest.

Hunter numbers and hunter days prior to 2005 include white-tailed deer and mule deer hunters.

### Previous Trend Area Surveys

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

Note: ND = no survey data available



