IDAHO DEPARTMENT OF FISH AND GAME

Steven M. Huffaker, Director

Project W-170-R-27

Progress Report

MULE DEER

Study I, Job 2

July 1, 2002 to June 30, 2003

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SUBPROJECT:	1-7	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	2		

PERIOD COVERED: July 1, 2002 to June 30, 2003

STATEWIDE

SUMMARY

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

Mule deer are primarily browsers, so most of their diet is composed of the leaves and twigs of shrubs and trees, particularly during winter. Grasses and forbs can be important dietary components at certain times of the year, such as spring and early summer.

Winter range is a critical component of mule deer habitat. Mule deer are susceptible to high mortality during periods of prolonged deep snow and low temperatures. Winter range has long been recognized as an important habitat component, but our ideas about it have changed as we have learned more about how deer use it. In the 1950s and 1960s, most of our emphasis was on the food resources on winter range. This was reflected in plantings of bitterbrush and measurements of utilization of browse plants. It was obvious that the food resources of winter range were important, but it could not account for all the variation observed in winter range use.

Even under the best conditions, deer lose weight all winter long. The best "winter range" a mule deer has is the fat stored in the body during the spring, summer, and fall. Therefore, the condition of a deer at the start of winter depends on the quality of the habitat it occupies during the rest of the year. The main strategy of a mule deer in winter is to survive by minimizing energy loss and by eating enough to prolong fat reserves. Deer commonly seek winter ranges where there is good thermal cover to minimize energy loss. Deer often become very sedentary during winter, moving and feeding as little as possible to conserve energy.

Our view of winter range has changed, but not its importance. Cover, aspect, and elevation are recognized as crucial components, and during certain times, are more important than food. Human disturbance of deer on winter ranges causes them to move from favored sites and waste

precious energy. The size of winter range is important to allow for different snow conditions and fluctuations in deer populations.

Much of Idaho's historic mule deer winter range has been developed for other uses and is now occupied by man. Ranches, farms, subdivisions, and industry located in the foothills and at lower elevations have eliminated winter range. In many parts of Idaho, deer winter range is adequate for the "average" winter, but when severe winters occur, deer are forced to low elevations where they come into conflict with humans. Deer can damage standing and stored crops; most commonly hay, ornamental shrubs, trees, and orchards. Depredations by mule deer can be severe and, in many cases, is an important factor in determining the optimum size of a deer population.

Early spring is an important time of year for mule deer and spring range is a key component of year-round habitat. Most winter-related mortality actually occurs in the early spring. Fawns and old bucks are most likely to die of winter stress. Mortality of does is usually light, but their condition is particularly critical because they are entering the third trimester of pregnancy and development of the fetus taxes their resources. The quality and quantity of nutritious forage in the spring (March, April, May) has a major effect on the production and survival of fawns. The timing of spring green-up is also important. A winter-stressed deer needs good forage as soon as possible. Cold, late spring weather with late green-up can increase mortality and reduce production.

Summer-fall ranges are obviously important because this is where deer produce fat reserves that will allow survival through the winter. The quality of summer-fall forage directly influences pregnancy and ovulation rates and, therefore, fawn production. Late fall is the last opportunity for deer to forage and store fat before moving to winter range. High quality fall range is important for bucks because their body reserves are reduced by rutting.

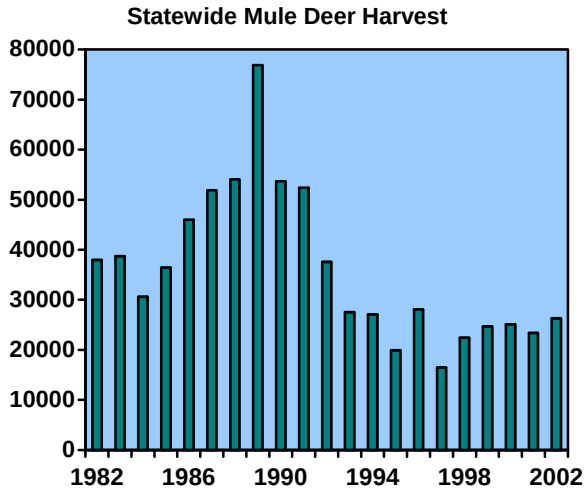
Many of Idaho's mule deer are migratory. They commonly travel long distances (20 to 100 miles) from summer range to winter range. Mule deer are fairly traditional and return to the same summer and winter ranges each year. Tagging and radio telemetry studies indicate that deer summering in the same area may go to different winter ranges, often in different game management units or different states. We have also found that deer wintering together can move to entirely different summer ranges. The migratory behavior of deer and the differential distribution of bucks and does complicates the measurement and interpretation of population parameters.

Given mule deer's fidelity for winter ranges, many of man's activities can disrupt or even eliminate migrations, forcing deer to winter on suboptimal ranges that may increase their mortality rates. Interstate highways, deer proof fences, and urbanization represent examples of activities that can disrupt migration patterns. Survival through winter is a tenuous balance between energy conservation and energy expenditure. Activities that increase energy expense likely increase over-winter mortality.

The structure of mule deer populations varies with the habitat and population size. Populations at low density (below carrying capacity) tend to have high reproductive and turnover rates and are dominated by younger animals. Populations with these characteristics are capable of rapid growth. Some populations stabilize at low density because they are susceptible to high mortality during unfavorable conditions. This is typical of populations in marginal habitat.

Populations at high density (near carrying capacity) tend to have low reproductive and turnover rates, and a stable age distribution. Population growth is slow, if it occurs at all. The annual production replaces the annual mortality. This type of population is commonly found in stable, well established habitat types, particularly climax forests. A wide spectrum of population structures is found between these two extremes.

Overall, mule deer populations statewide have declined since the 1950s and 1960s. It is unlikely that populations will ever increase to those levels again. Mule deer are best adapted to seral, transitional habitat types. Habitat succession is a continual and dynamic process, and those habitats best suited for mule deer cannot be expected to remain indefinitely or even be managed for on a large enough scale to have significant population effects. Recent population declines in parts of southern Idaho that were marked by the 1992-1993 winters are a natural process in mule deer dynamics. Populations are expected to increase given favorable environmental conditions. However, the long-term outlook for mule deer statewide is that of slowly diminishing habitat quantity and quality over time. Maintaining healthy populations with harvestable surplus is expected and will continue; however, populations reminiscent of the "good-old-days" are unrealistic.



The effect of harvest mortality is highly variable in mule deer. Generally, the majority of the annual mortality is not hunter-harvest related. Factors such as predation, malnourishment over winter, accidents, and disease are responsible for the majority of deaths in mule deer populations. Therefore, population response tends to be independent of harvest. Exceptions to this rule include antlerless opportunity designed to stabilize or reduce populations and effects of hunter harvest on buck survival and age structure. Hunting seasons designed to offer significantly more opportunity for antlered deer than antlerless deer, or during periods when bucks are vulnerable (rut, winter range), can reduce the proportion of bucks and particularly older bucks in the population. Buck-only seasons will not limit population growth; however, they can affect the number of older bucks. The Idaho Fish and Game Commission (Commission) established a statewide minimum of 15 bucks per 100 does post-season, primarily as the minimum ratio that hunters would accept. It is unknown what the lower threshold value for buck:doe ratio is where negative impacts on

production parameters can occur. However, we believe that the statewide minimum is above that necessary for adequate reproduction.

Proper harvest management for mule deer, given their relative independence to harvest effects, is to adequately monitor populations annually and be responsive to population changes. Liberal seasons can be applied during periods when populations are expanding rapidly and conservative seasons applied when environmental factors are limiting population growth.

This plan represents a statewide change in how we monitor mule deer populations. Historically, harvest parameters and periodic unit-wide surveys were conducted to assess population status. Beginning with this plan, we have established a statewide, uniform approach to monitor mule deer populations on an annual basis, thus being more responsive to population changes. The state has been divided into 22 Analysis Areas (groupings of Game Management Units) that represent similar habitats, discrete mule deer populations, and/or similar management objectives. With little exception, each Analysis Area will have at least one trend area (winter range) that will be monitored annually. Trend areas have been chosen to be representative of the Analysis Area as a whole, and should reflect population parameters throughout the grouping of units. Information that will be collected for each trend area includes buck:doe:fawn ratios and abundance. Additionally, radio-collared fawns in several of the trend areas across the state will be monitored to determine over-winter survival and recruitment to spring.

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

In addition to monitoring trend area populations, the Department will monitor harvest and the percentage of 4+ points in the harvest relative to minimum criterion established by the Commission. Prior to 1998, the telephone harvest survey provided information for harvest. Beginning in 1998, a statewide mandatory report card system was implemented. Given adequate compliance, more precise data on harvest and antler point class will be available.

ANTLERLESS HARVEST

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

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

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

DECISION MODEL

	Variable Score		
Population Level	**Below Threshold**	**At Threshold**	**Above Threshold**
	-5	5	15
Animal Condition	**Poor**	**Good**	
	0	5	
Winter Severity	**Severe, >60% Fawn Mortality**	**Average, 40-60% Fawn Mortality**	**Mild, <40% Fawn Mortality**
	-5	5	10

TOTAL SCORE	SEASON FRAMEWORK
<10	No Antlerless Harvest
10	Controlled Harvest
15	7 Days
20	14 Days

DECISION MODEL EXAMPLES:

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

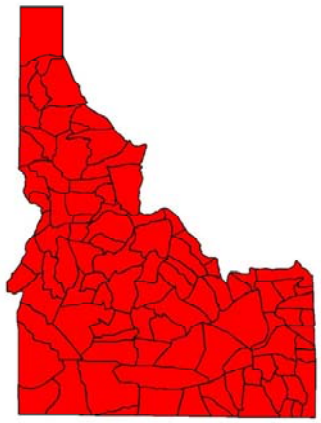
2) Antlerless Harvest Threshold Value = 2000
   Population Survey = 1500 deer observed
   Animal Condition = poor
   Winter Severity = severe, 75% fawn mortality
   Total Score = -5 + 0 + -5 = -10
   Maximum Antlerless Framework = 0 days

Mule Deer Status, Threshold, & Criterion Statewide

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Statewide	1992-01	85546	80300
Total		**85546**	**80300**

Note: Estimates within parentheses are based on information other than sightability surveys.



Buck Status & Minimum Criterion

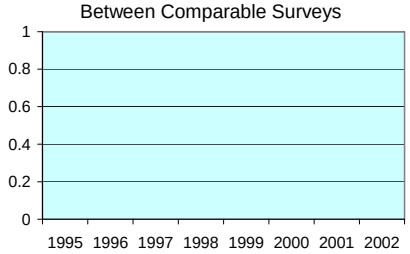
	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	1993-99	19	15
%4+ Pts in the Harvest	1999-01	33	15

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
Statewide	NC	NC	NC	NC	NC	NC	NC	NC
Comparable Surveys Total	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**	**NC**

Note: NC = all surveys not comparable statewide.

Population Change
Between Comparable Surveys

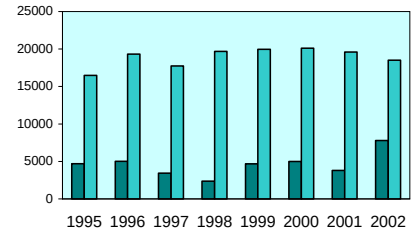


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	4713	5028	3437	2393	4695	5000	3800	7800
Antlered Harvest	16478	19318	17737	19656	19955	20100	19600	18500
% 4+ Points	43	48	38	38	33	41	26	33
Hunter Numbers	134722	124795	147244	116771	121364	ND	112320	124200

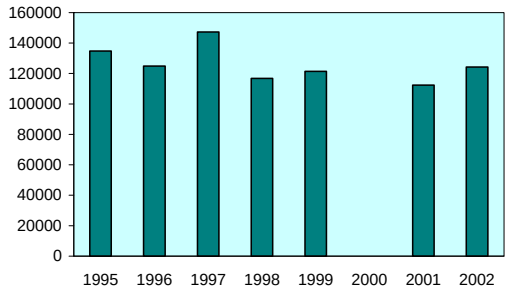
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.
Hunter numbers include all deer hunters.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

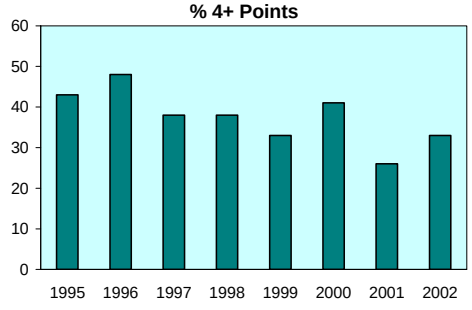


Figure 1. Mule Deer Status, Threshold, and Criterion Statewide

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mule Deer Surveys and Inventories
PROJECT:	W-170-R-27		
SUBPROJECT:	1	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	2		

PERIOD COVERED: July 1, 2002 to June 30, 2003

PANHANDLE REGION

ANALYSIS AREA 1 (UNITS 1, 2, 3, 4, 4A, 5, 6, 7, 9)

Management Objectives

The objective for this Analysis Area is to maintain at least 30% ≥4-point bucks in the harvest on a three-year, un-weighted running average.

Historical Perspective

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

Concern about over-browsed winter ranges, and an overabundance of deer throughout the state, in general, led to aggressive management to reduce the deer population. By the early 1970s, this goal was accomplished and shorter seasons were authorized. Deer seasons in this Analysis Area have traditionally allowed hunters to take either mule deer or white-tailed deer under the same tag. With the exception of Unit 1 beginning in 1998, all seasons have been for either-sex deer, season-long. The Unit 1 mule deer season is antlered-only from 1 November through 1 December.

Habitat Issues

Much of the land in these units is administered by the USFS, with private lands mostly restricted to the valley bottoms. Recreation and timber management are the dominant human uses of the landscape in these units. This is in a generally moist region with nearly continuous canopy

coverage. Mule deer mix with white-tailed deer during winter, although there is a tendency for mule deer to winter at slightly higher elevations. Mule deer depredations are nonexistent.

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

Biological Issues

There is very little known about the ecology of mule deer in the heavily forested environments typical of this Analysis Area. The timbered nature of the landscape, combined with the relative scarcity of mule deer concentrations, does not allow aerial surveys to be used to monitor mule deer populations in this area. The influence of hunting on mule deer population dynamics is believed to be minor, based on the minor influence of hunting measured on white-tailed deer populations in the same areas. The relatively high proportion of ≥4-point bucks within the antlered harvest is consistent with this hypothesis.

Interspecific Issues

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

Predation Issues

Mountain lion, black bear, bobcat, and coyote exist throughout the area. Recently, a major increase in the mountain lion population has been detected leading to increased public concern over the impacts of predation of future mule deer populations. Predation is likely an important factor in the population dynamics of mule deer in this Analysis Area. Radio-telemetry studies conducted in the Priest River Basin during the late 1980s and early 1990s indicated this was the case with white-tailed deer.

Winter Feeding Issues

Winter feeding of mule deer has not occurred in these units in the past few years.

Information Requirements

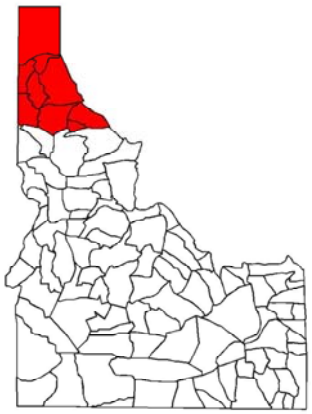
With the exception of check station information, the Department did not collect information specific to mule deer harvest in this Analysis Area from 1979 to 1995. Hunter effort has only been documented since 1996. Good harvest data is of utmost importance here because aerial surveys are impractical to conduct due to heavy tree cover and only small, scattered pockets of wintering mule deer. Basic ecological information is lacking on mule deer ecology in heavily timbered environments.

Mule Deer
Analysis Area 1 (Units 1, 2, 3, 4, 4A, 5, 6, 7, 9)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
ND	ND	ND	NA
Total		**ND**	**NA**

Note : ND = no survey data available, NA = not applicable.



Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	ND	ND	NA
%4+ Pts in the Harvest	1999-01	39	30

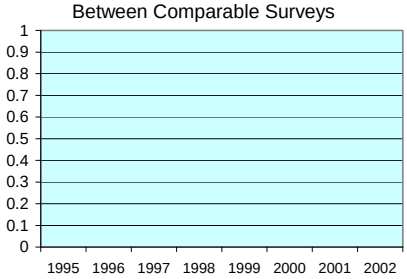
Note: ND = no survey data available, NA = not applicable.

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
ND	ND	ND	ND	ND	ND	ND	ND	ND
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

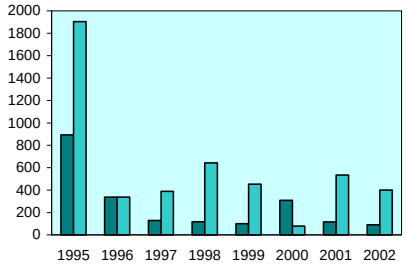


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	894	339	128	118	100	308	116	90
Antlered Harvest	1904	338	389	644	453	80	535	401
% 4+ Points	46	42	39	29	32	42	42	45
Hunter Numbers	36514	29548	36893	30002	30805	ND	19140	19535

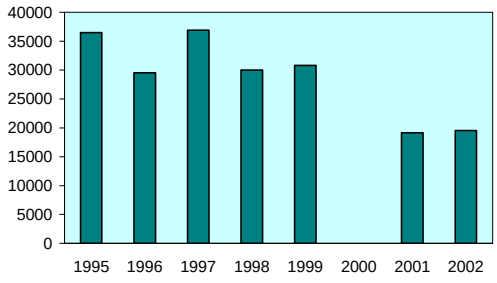
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data. Hunter numbers include all deer hunters.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

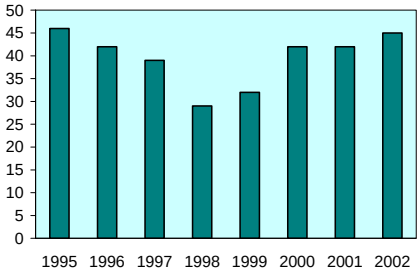


Figure 2. Mule Deer Analysis Area 1

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mule Deer Surveys and Inventories
PROJECT:	W-170-R-27		
SUBPROJECT:	2	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	2		

PERIOD COVERED: July 1, 2002 to June 30, 2003

CLEARWATER REGION

ANALYSIS AREA 2 (UNITS 8, 8A, 10, 10A, 12, 15, 16)

Management Objectives

Given the relative lack of good mule deer habitat, low mule deer populations, and priorities placed on white-tailed deer and elk, no population trend areas nor antlerless harvest threshold levels will be established for this zone. The management objective will be limited to maintaining at least 30% ≥4 points in the harvest.

Historical Perspective

Mule deer populations in this Analysis Area were historically low. Accounts from Lewis and Clark during the early 1800s suggested that very few animals were found throughout the Clearwater River country. Populations probably did not change much until the large fires of the early 1900s that converted large expanses of unbroken forest into a mosaic of successional vegetation types. Populations probably peaked during the 1930s-1950s as a result of new, high-quality habitat and lack of competition by other ungulates. As elk and white-tailed deer populations increased and habitat changes including succession, development, and loss of key winter ranges occurred, mule deer populations likely decreased. Information derived from estimates made by Department wildlife managers suggested mule deer populations declined from around 2,000 in 1960 to about 600 in 1990. Harvest declined 60% from 1991 to 1996.

Historically, white-tailed deer and mule deer were managed as a "single species" and a single general season harvest framework was established for both species. In 1973, the Department began to offer species-specific seasons in the Clearwater Region.

Habitat Issues

This Analysis Area varies from the highly productive Palouse Prairie to the timbered ridges and mountainous terrain of the upper Clearwater River. In Units 8 and 8A, dryland agriculture began in the 1880s and currently, non-forested land is tilled and only small patches of perennial vegetation remain. Farmland in Units 8 and 8A has provided high-quality forage for deer. The

flat terrain, low elevation, abundance of meadows, and high productivity of the land make Units 8 and 8A highly productive for wildlife, but with a high likelihood of conflict with humans.

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

Construction of new home-sites has decreased available mule deer winter range. This Analysis Area is characterized by high road densities in the western portion and backcountry and limited access except for trails in the eastern portions. Noxious weeds such as yellowstar thistle and spotted knapweed are out-competing native vegetation on mule deer spring and winter ranges.

Mule deer depredations have been low in this area due to low populations and limited mule deer habitat. Mule deer densities within agricultural areas of Analysis Area 2 have rarely exceeded landowner tolerance levels. Currently, there are no depredation concerns involving mule deer.

Biological Issues

Although mule deer have never been numerous in this area, small populations do still exist where good mule deer habitat is available. These units are managed mainly for elk and white-tailed deer populations. Given habitats within this Analysis Area have low potential for supporting substantial numbers of mule deer, management emphasis will be placed on maintaining mule deer populations.

Interspecific Issues

A decline in cattle grazing and successive years of drought during the late 1980s and early 1990s may have contributed to rangeland changes. Intensive logging has created extensive brushy areas on winter ranges. These shifts in vegetation have resulted in increases in white-tailed deer and elk populations, creating possible competition with mule deer. Current research in Starkey suggests that elk may displace mule deer.

Predation Issues

Mountain lion numbers increased in this Analysis Area during the early and mid-1990s, but more recently have declined and or leveled off in most of these units. A likely reason for the initial increase was probably due to a dramatic increase in white-tailed deer numbers. Black bear

numbers have remained static throughout most of this area for the past decade. Coyote numbers remain high and may contribute to some fawn mortality. Increases in road densities during the past several decades have contributed to increased predator hunting opportunities. Wolves have established themselves in Units 10, 10A, 12, and 15 due to reintroduction efforts by the U.S. Fish and Wildlife Service (USFWS) and likely contribute substantially to deer mortality.

Winter Feeding Issues

Emergency winter feeding of mule deer has not occurred in the past few years.

Harvest

Total harvest in Analysis Area 2 units during 2002 was estimated at 259 mule deer according to the 2002 mandatory harvest reports. This represents an 31% decrease in harvest from 2001. Hunter numbers in Analysis Area 2 units were estimated at 16,205 with an average success rate of 2% in 2002. Harvest statistics for Analysis Area 2 units tend to fluctuate, probably due to low sample sizes for mule deer harvest. Hunter numbers in 2002 were similar to 2001 (16,133), as were success rates. Overall, recent years' harvest trends indicate a slightly decreasing mule deer population in Analysis Area 2 units.

Information Requirements

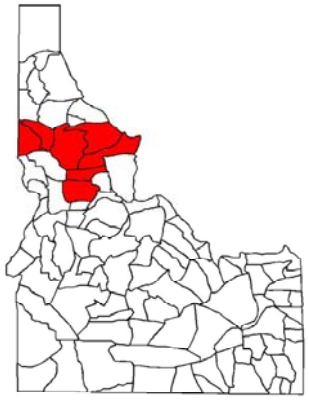
Harvest and aerial survey information for this Analysis Area are limited. Low mule deer numbers make it difficult to assess population levels with aerial surveys. Incidental mule deer observations will be recorded during aerial surveys for elk. Improved harvest information may be the best way to assess population trends in this area. Prior to 1994, all harvest data was for mule deer and white-tailed deer combined. Future data collection efforts should continue to be separated for both deer species.

Mule Deer
Analysis Area 2 (Units 8, 8A, 10, 10A, 12, 15, 16)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
ND	ND	ND	NA
Total		**ND**	**NA**

Note: ND = no survey data available, NA = not applicable.



Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	ND	ND	NA
%4+ Pts in the Harvest	1999-01	38	30

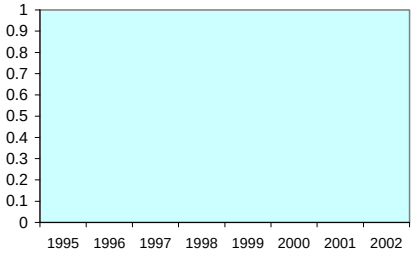
Note: ND = no survey data available. NA = not applicable.

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
ND	ND	ND	ND	ND	ND	ND	ND	ND
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

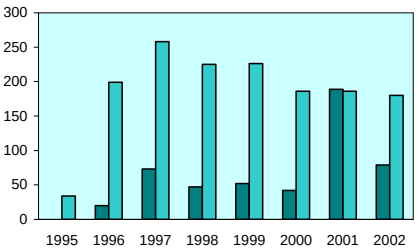


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	0	20	73	47	52	42	189	79
Antlered Harvest	34	199	258	225	226	186	186	180
% 4+ Points	ND	40	21	27	22	39	54	41
Hunter Numbers	18615	18007	5521	3674	3949	ND	16133	16205

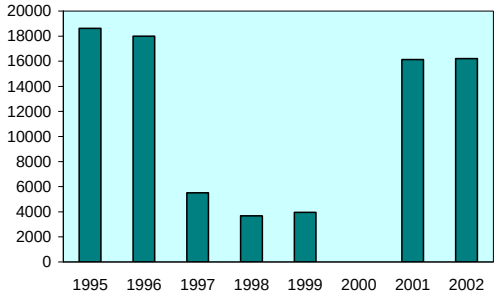
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.
Hunter numbers prior to 1997 include all deer hunters.
ND = no data available.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

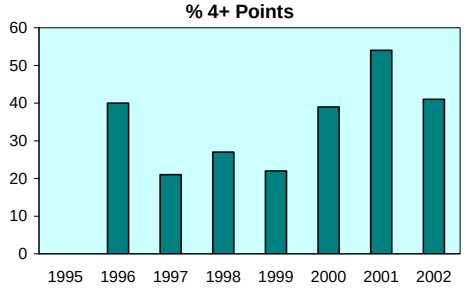


Figure 3. Mule Deer Analysis Area 2

ANALYSIS AREA 3 (UNITS 11, 11A, 13, 14, 18, 23)

Management Objectives

Given the limited amount of aerial survey population information available for this Analysis Area, an antlerless harvest threshold has not been established. However, the Department will make efforts to annually monitor the newly established trend area and develop a threshold value. The current emphasis is to increase mule deer numbers and buck quality; therefore, the Department will recommend restrictive antlerless opportunity until improved population information is available and a threshold is established. Antlered controlled hunts were established in 1998 in order to improve buck numbers and quality. An additional objective is to maintain at least 30% ≥4 points in the harvest.

Historical Perspective

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

Historically, white-tailed deer and mule deer were managed as a "single species" and a single general season harvest framework was established for both species. In 1973; the Department began to offer species-specific seasons in the Clearwater Region.

Habitat Issues

Habitat productivity varies widely throughout the zone with steep, dry, river canyon grasslands having low annual precipitation, to higher elevation forests having good habitat productivity and greater precipitation. Late successional forest cover types have become fragmented within the area. Various weeds have disturbed many grassland cover types and nonnative grasses such as cheat grass and yellowstar thistle. Road density is moderate and access is restricted in many areas. This results in medium to low vulnerability of big game to hunters, especially within the Snake River and the Salmon River canyons below White Bird.

Historically, sheep and cattle ranchers homesteaded the canyon lands in this Analysis Area, while farmers settled prairie land. Around the turn of the century, northern Unit 11 and the prairie land in Unit 11A was under intensive use for dryland agriculture and numerous orchards were planted in the Lewiston area. As settlement increased, the forested portions of the area were intensively logged, especially on private land. The forests were frequently high-graded,

and the existing forests still show the scars. In addition, intensive-grazing practices degraded many meadow areas and canyons, allowing invasion of noxious weed species in drier areas.

This Analysis Area contains large tracts of both privately- and publicly-owned lands. Units 11 and 11A are mostly private land except for the Craig Mountain Wildlife Management Area (WMA) along the Snake and Salmon Rivers. Unit 13 has been mostly under private ownership since settlement and is managed for agriculture and livestock. Historically, sheepherders ran their flocks in the canyons of Units 14, 18, and 23, and logging occurred in the forested areas of these units. Units 14 and 18 are two-thirds public lands with the remaining private land located at lower elevations along the Salmon River. The majority of the Hells Canyon Wilderness Area, designated in 1975, is in Unit 18. Unit 23 is mostly public land with some private land located at lower elevations along the Little Salmon River.

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

Landowners registered enough complaints of mule deer causing damage to small grain, legume, and hay crops during the 1980s that a special mule deer season was developed in the Waha and Maloney Creek areas of Unit 11. This season helped reduce damage complaints and the Maloney Creek portion of the hunt was eliminated in 1997 due to the decline of mule deer in southern Unit 11. This decline was also experienced in agricultural areas of Units 11A, 13, 14, 18, and 23. Landowner complaints in Unit 11A relate to damage caused to rapeseed, bluegrass, and winter wheat. Complaints in Units 13, 14, 18, and 23 involve damage to irrigated alfalfa, orchards, standing hay, and stored hay on agricultural land along the Salmon River breaks. Currently, there are only a few depredation concerns involving mule deer in Analysis Area 3. Since 1998, antlerless mule deer have increased in areas surrounding agricultural fields.

During 2000, fire burned a large portion of Unit 11 along the Salmon and Snake Rivers from Maloney Creek down to Dough Creek and all the way to the ridgeline in most places. This fire alteration on the landscape is just now being analyzed for impacts. Grasses and native vegetation are being replanted and many of the bulldozer lines recovered. Still, it will be years before the shrub component fully recovers and decades before conifer regeneration provides thermal and hiding cover.

Biological Issues

Poor productivity and declining mature buck numbers as reflected in decreasing fawn:doe:buck ratios, a decrease in total numbers, and a 50% decrease in harvest since the late 1980s have contributed to concerns for the mule deer herds in these units. In 1992, aerial surveys in Units 14 and 18 indicated buck:doe ratios at 7:100 and 13:100, respectively. A December 1999 sightability survey in Unit 14 indicated a buck:doe ratio of 18:100. White Bird Trend Area surveys conducted in December 1999 indicated a total population of 1,725 mule deer. This represents a 26% decrease in total numbers from the same subunits flown during the early 1990s.

Subsequent White Bird Trend Area surveys conducted during the 2001-2002 and 2002-2003 winters indicated a stable population with increasing buck:doe and fawn:doe ratios. In 1990, controlled hunt permit numbers in Unit 11 were reduced significantly. Since then, fawn:doe:buck ratios have improved along with percent four-point bucks and total buck numbers. Due to declines in mule deer populations, Units 11A, 13, 14, and 18 went from general hunts to controlled hunts in 1998. The deer population in Unit 23 increased dramatically in the late 1980s, but subsequently declined in the severe winter of 1992-1993 but appear to be increasing since then. General hunting opportunities have been maintained in Unit 23.

Interspecific Issues

A decline in cattle grazing and successive years of drought during the late 1980s and early 1990s may have contributed to rangeland shifting from forbs to grasses. Intensive logging has created extensive brushy areas on winter ranges. These shifts in vegetation have resulted in increases in white-tailed deer and elk populations, creating competition with mule deer on both winter and summer ranges.

Predation Issues

Mountain lion harvest has increased slightly in this area during the past several decades and most likely reflects an increase in mountain lion numbers, which may be contributing to lower deer densities. Bear populations remain stable, with harvest fluctuating around 10-20% per year. The semi-arid climate and sparse timber limit the extent of highly productive bear foods in Units 11, 11A, 13, 14, and 18 and does not allow for bears to reach the densities they do in more timbered habitats such as Unit 23. However, due to the extensive old homestead sites in these units, numerous fruit trees and shrubs were planted and remain in the areas today, providing excellent bear foods in the autumn. Some of the largest bears in the state annually come from Unit 11. Bears are not thought to have an effect on deer recruitment in this Analysis Area. Wolves have not yet established themselves in this zone; however, they are frequent visitors to some units and are likely to establish more of a presence in the future.

Winter Feeding Issues

Emergency winter feeding of mule deer has not occurred in the past few years.

Harvest

Total harvest in Analysis Area 3 during 2002 was estimated at 1,260 mule deer according to the 2002 mandatory harvest reports. This represents an 8% decrease in harvest from 2001 (1,159). Total hunter numbers in the Analysis Area were estimated at 3,127 which is a 63% decrease from 2001 (8,375).

Information Requirements

Harvest and aerial survey information for this Analysis Area are limited. Improved estimates are needed for yearly harvest data. Previous to 1994, all harvest data was for mule deer and white-

tailed deer combined. Data should continue to be separated for both deer species. Initiation of controlled hunts in Units 11A, 13, 14, and 18 in 1998 should improve harvest information. Units 11 and 14 are the only units within this Analysis Area that have been flown for unit-wide winter range surveys since 1994. Aerial surveys have never been conducted in Unit 11A. Due to declining sex and age ratios and declines in harvest in most units, increased aerial surveys are needed throughout this Analysis Area to set harvest quotas and accurately track populations. The White Bird Trend Area was first flown in December 1999. The intent is to fly the White Bird Trend Area once per year in order to obtain annual population estimates and more accurately establish trends in deer numbers for this area.

Mule Deer
Analysis Area 3 (Units 11, 11A, 13, 14, 18, 23)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
White Bird (13, 14, 18)	2003	1749	NA
Total		**1749**	**NA**

Note: NA = not applicable.

Buck Status & Minimum Criterion

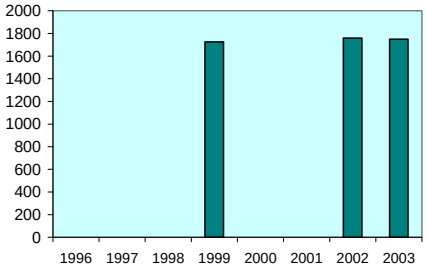
	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2003	27	15
%4+ Pts in the Harvest	1999-01	51	30

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
White Bird (13, 14, 18)	ND	ND	ND	1725	ND	ND	1760	1749
Comparable Surveys Total	**ND**	**ND**	**ND**	**1725**	**ND**	**ND**	**1760**	**1749**

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

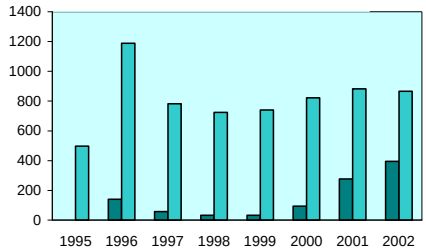


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	0	140	57	33	33	93	277	395
Antlered Harvest	497	1189	782	724	739	821	882	865
% 4+ Points	ND	60	32	51	52	48	52	55
Hunter Numbers	6655	7612	4123	2234	2119	ND	8375	3127

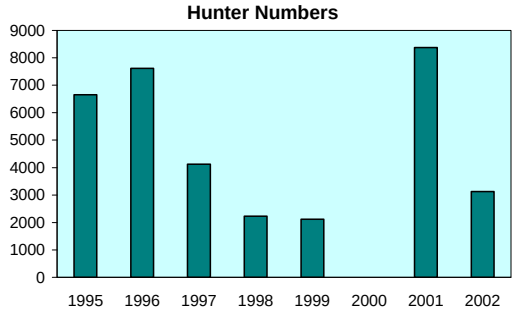
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.
Hunter numbers prior to 1997 include all deer hunters.
ND = no data available.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data. Hunter numbers prior to 1997 include all deer hunters.

Hunter Numbers



% 4+ Points

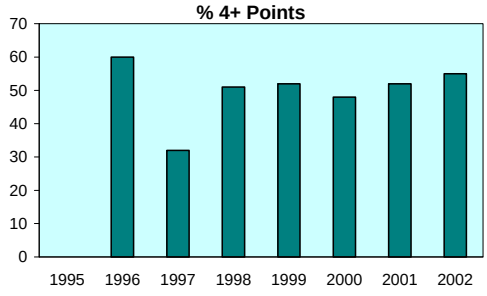


Figure 4. Mule Deer Analysis Area 3

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mule Deer Surveys and Inventories
PROJECT:	W-170-R-27		
SUBPROJECT:	3	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	2		

PERIOD COVERED: July 1, 2002 to June 30, 2003

SOUTHWEST REGION

ANALYSIS AREA 6 (UNITS 22, 24, 31, 32, 32A, 33, 34, 35, 39)

Management Objectives

The objectives for this area are to maintain buck harvest above 30% 4+ points and maintain buck:doe ratios from herd composition surveys above the statewide minimum of 15 bucks per 100 does. Antlerless harvest will be restricted when trend area deer populations are below threshold levels of 3,700 deer in Unit 22, 3,400 in Unit 31, 2,000 in Unit 33, and 20,000 in Unit 39. Conversely, liberal antlerless harvest will be encouraged when deer numbers exceed these threshold values. These values represent intermediate populations between current status and numbers observed during the late 1980s when deer populations were considered higher than could be supported during a normal winter and presented depredation concerns for agri-businesses.

Historical Perspective

These units represent the major deer units in the Southwest Region. In late 1800s, deer herds were reduced by extensive meat hunting throughout the area. Hunting was restricted in the early 1900s. The subsequent increase in the deer herds led to large winterkills in some areas, extensive winter feeding programs, and concern for the status of vegetation on deer winter range.

Over one-third of Idaho's population lives near these big game units. These units provide deer hunting opportunity, but that opportunity has to be closely regulated to prevent overharvest. This is particularly true for does throughout the area, and for bucks in the open sagebrush habitats where they are more vulnerable.

Habitat Issues

The habitats range from the Snake River breaks to the sagebrush ranges in the Payette and Weiser River drainage to the Sawtooth Mountain Range. The majority of mule deer summer on land administered by the USFS. The mule deer typically spend the summers in the forest habitats and move to lower sagebrush/grass winter ranges. Low elevation winter ranges consist

of more private land than the summer ranges. Logging, grazing, and fires have substantially affected the condition of these ranges. The logging activity has increased shrub fields and provided increased forage for mule deer. The effect of fire on summer ranges has been positive, improving forage conditions for deer. The effects of fire on the low elevation winter ranges have been more negative. In many cases, the fires have reduced the shrubs that deer are dependent on during the winter. An exception has been some winter ranges burned with cooler spring fires to maintain important shrubs species such as bitterbrush and sagebrush. The proliferation of noxious weeds poses a threat to mule deer winter range.

In the Boise area, the expansion of home developments onto mule deer winter range has been a significant problem. This urban development is impacting the wintering areas of one-third of Unit 39's mule deer herd.

Biological Issues

Population performance in this area is closely associated with winter severity and body condition of deer when entering the winter period. Buck harvest parameters are at 30% 4+ points. Aerial survey information indicates buck: doe ratios are near 15:100 or above in most places.

Interspecific Issues

Elk densities are currently high throughout most of the area. These high elk densities may be limiting the ability of the area to support mule deer. There are some white-tailed deer in Units 22, 24, 32, 32A, and 33. The white-tailed deer populations do not seem to be expanding their distribution. Intensive cattle and sheep grazing are present on much of the range. Competition among species is largely unknown.

Predation Issues

Bobcats, coyotes, mountain lions, and black bears are the large predators throughout the area. Wolves occur in Units 24, 33, 34, and 35. The impact of these large predators on mule deer is largely unknown.

Winter Feeding Issues

Winter feeding has been fairly common in these units. In the Garden Valley area, winter feeding occurs about two out of five years. In other areas, extensive winter feeding occurs less often, the most recent being the winter of 1992-1993.

Winter feeding operations have been widespread and controversial throughout these units. Early attempts to use hay to feed deer in the winter were not very successful. The current pelletized ration can effectively support deer through tough winter conditions. During the last ten years, winter feeding operations have centered around the Boise Front, Garden Valley, and the Weiser/Brownlee Reservoir areas.

Information Requirements

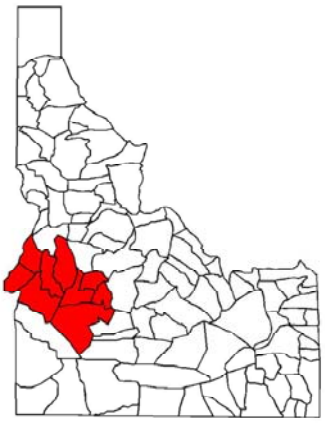
The large area in these units necessitates several trend areas. These trend areas need to be surveyed on an annual basis to determine the status of the herd. There is little information on herd composition in many of these units. This data collection effort needs to be increased. Information on interspecific competition is also needed.

Mule Deer

Analysis Area 6 (Units 22, 24, 31, 32, 32A, 33, 34, 35, 39)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
(22)	2003	3193	3700
(31)	2003	3207	3400
Garden Valley (33)	1999	1869	2000
Boise Front (39)	2003	27800	20000
Total		**36069**	**29100**



Buck Status & Minimum Criterion

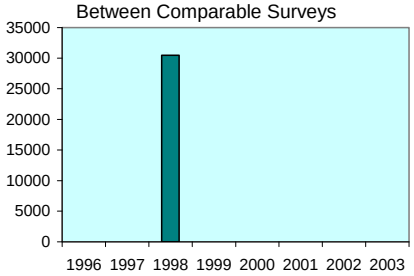
	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio (22)	2001	7	15
(32A)	2000	14	15
Boise Front (39)	2003	14	15
%4+ Pts in the Harvest	1999-01	21	30

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
(22)	3384	ND	3687	ND	4091	4318	3725	3193
(31)	ND	(2091)	3433	ND	3826	4450	3732	3207
Garden Valley (33)	ND	1250	2050	1869	ND	ND	ND	ND
Boise Front (39)	ND	ND	21300	ND	ND	23861	ND	27800
Comparable Surveys Total	**ND**	**ND**	**30470**	**ND**	**ND**	**ND**	**ND**	**ND**

Note: ND = no survey data available, estimates within parenthesis are based on information other than sightability surveys

Population Change
Between Comparable Surveys

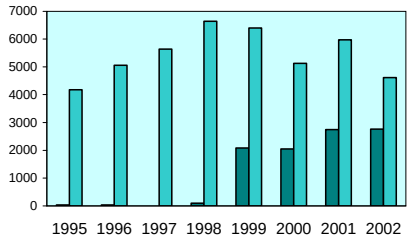


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	34	36	0	98	2081	2045	2746	2764
Antlered Harvest	4174	5059	5643	6638	6397	5127	5970	4611
% 4+ Points	33	48	27	26	18	25	21	21
Hunter Numbers	21722	17357	23296	23485	29021	ND	26365	26322

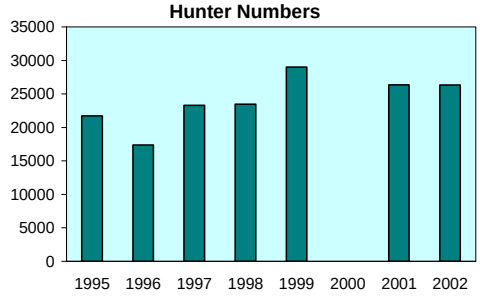
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

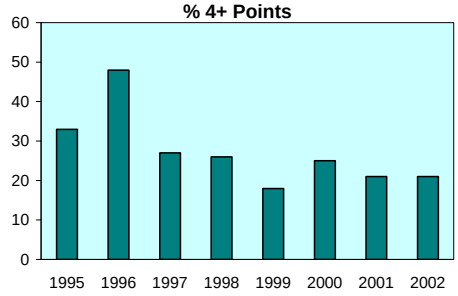


Figure 5. Mule Deer Analysis Area 6

ANALYSIS AREA 11 (UNIT 38)

Management Objectives

The objective is to maintain the deer population at, or below, its current level. The area is not likely to become a major deer hunting destination. With limited sportsman's desire for hunting in this unit, minimizing agricultural depredation is the major goal.

Historical Perspective

This unit contains the irrigated farmland and orchards in the Treasure Valley. There is some high desert habitat in the Snake River Birds of Prey Area. The majority of the deer are associated with the Boise, Snake, and Payette River corridors and nearby orchards and vineyards. With the density of residences and developed agricultural properties in the area, big game hunters have been restricted to short range weapons. The portion of Unit 32 in the Emmett Valley has similar characteristics to Unit 38 and is managed under the same management goals.

Relatively few hunters specifically plan their deer hunts for Unit 38. Most deer are harvested incidentally to upland bird or waterfowl hunting. The current season is either-sex, short-range weapons only, for 50 days. The harvest has remained about 200 deer.

Habitat Issues

The majority of land is in private ownership. High value crops produced by agriculture make deer depredations a major factor. Deer depredation complaints are common. Depredation hunts and kill permits are used on a regular basis in this area.

Biological Issues

The agricultural nature of this unit provides excellent habitat for good deer production. Good deer production is not desired in this unit due to the high incident of deer depredation. Deer populations in this unit are managed with liberal seasons to maintain low densities.

Interspecific Issues

Mule deer are the primary species in the unit. White-tailed deer were reintroduced onto the C.J. Strike and Fort Boise WMAs in the 1980s. The white-tailed deer are well established and contributing to some depredation problems.

Predation Issues

Coyotes, bobcats, domestic dogs, and some mountain lions are the significant large predators in this area. There are no wolves or black bears in the area. The impact of predators on the deer is largely unknown, but does not present a major management issue.

Winter Feeding Issues

Winter feeding has not been required in this area because of the mild climate in the Treasure Valley.

Information Requirements

This area will not be managed to provide a significant amount of deer hunting opportunity. The primary need for deer management in this area are techniques to limit damage to agricultural crops in an economically realistic way.

Mule Deer
Analysis Area 11 (Unit 38)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
ND	ND	ND	NA
Total		**ND**	**NA**

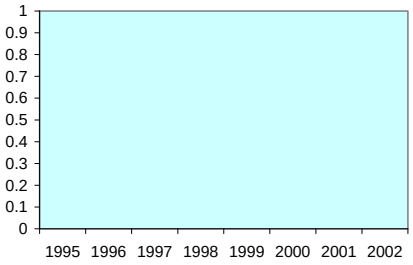
Note: ND = no survey data available, NA = not applicable.

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	ND	ND	NA
%4+ Pts in the Harvest	1999-01	19	25

Note: ND = no survey data available, estimates within parenthesis are based on information other than sightability surveys.

Population Change
Between Comparable Surveys

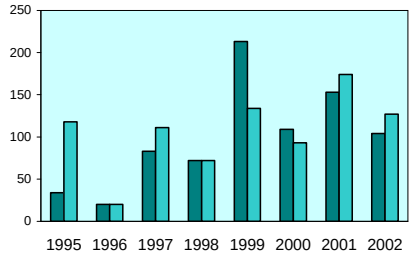


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
ND	ND	ND	ND	ND	ND	ND	ND	ND
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Note: ND = no survey data available.

Harvest*



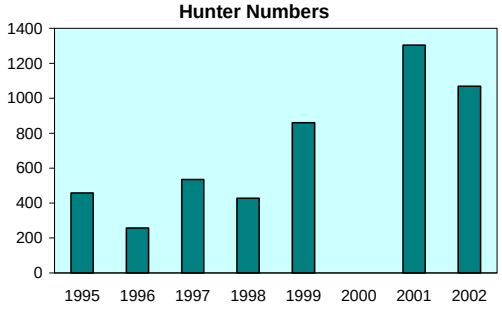
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	34	20	83	72	213	109	153	104
Antlered Harvest	118	20	111	72	134	93	174	127
% 4+ Points	43	0	55	36	14	22	20	24
Hunter Numbers	458	258	535	427	860	ND	1304	1068

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

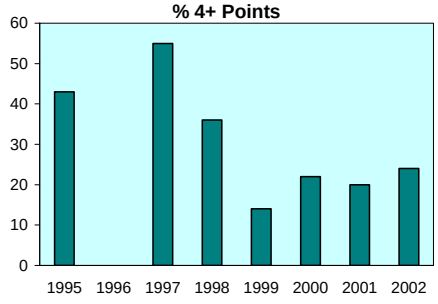


Figure 6. Mule Deer Analysis Area 11

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mule Deer Surveys and Inventories
PROJECT:	W-170-R-27		
SUBPROJECT:	4	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	2		

PERIOD COVERED: July 1, 2002 to June 30, 2003

MAGIC VALLEY REGION

ANALYSIS AREA 7 (UNITS 43, 44, 45, 48, 52)

Management Objectives

An objective for Analysis Area 7 is to restrict antlerless harvest when trend area populations are less than 5,000 deer; conversely, antlerless harvest will be considered when deer numbers exceed this threshold value. Additionally, deer populations will be managed to maintain or exceed 20 bucks per 100 does in the pre-winter population and >45% bucks with 4-point or larger antlers in the October harvest.

Historical Perspective

During the late 1800s and early 1900s, mule deer populations in Analysis Area 7 were reduced to very low levels by unregulated harvest. Miners, market hunters, and other inhabitants of the area relied heavily on deer and elk meat. Mule deer habitat was also greatly altered during this period by excessive livestock use. Dense shrubs fields, dominated by sagebrush and bitterbrush, replaced plant communities dominated by grasses. This pronounced change in habitat combined with restrictions on deer hunting prompted increases in deer numbers. Hunting seasons were closed or very conservative through 1940. At that time, winter ranges were considered to be overbrowsed and in a downward trend, and hunting seasons were designed to reduce deer numbers. Deer numbers remained strong through the 1950s and 1960s. Following a significant decline in numbers during the mid-1970s, deer populations increased again during the late 1980s, a period of prolonged drought conditions and mild winters. During the winter of 1992-1993, deer populations declined by approximately 50%. Deer had entered the winter in poor physiological condition and high over-winter mortality of fawns and bucks occurred. Since 1993, deer numbers have increased in this area but remain below the population levels of the late 1980s and early 1990s.

Harvest management includes both general (Units 43 and 48) and controlled (Units 44, 45, and 52) hunting seasons. The controlled hunts are very popular with sportsmen desiring quality, high hunter success, low hunter density, and the opportunity to observe many deer. The Bennett Hills (Unit 45) has had controlled hunting seasons since 1972 and has the most highly sought after

mule deer permits in Idaho. Drawing odds for the November buck hunt have been about 1:25. Since the 1993 decline, liberal antlerless hunts have been maintained in Units 43, 44, and 45 to slow the recovery of deer on deteriorated winter ranges in Unit 45.

Units 45 and 52 provide most of the winter habitat for deer in this Analysis Area. Important winter ranges include: Black Butte Hills (Unit 52), Picabo Hills (Unit 52), and King Hill (Unit 45).

Habitat Issues

This Analysis Area encompasses about 5,487 mi^2 of which 24% is managed by the USFS, 49% is managed by the BLM, 5% is administered by the IDL, and 22% is private land.

Most of Unit 52 and the southern portion of Unit 45 is primarily arid semi-desert dominated by sagebrush-grass. The Mount Bennett Hills in the northern portion of Unit 45 is a low range of mountains or high plateaus consisting of sagebrush-grass and mixed mountain shrub communities with small pockets of aspen and Douglas fir on northern exposures and more mesic sites. Units 43, 44, and 48 include the Soldier, Boulder, and Smoky Mountains. Mountain shrub and mountain big sagebrush communities are common on south-facing exposures while northern exposures are timbered.

Grazing by cattle and domestic sheep is the primary land use on public and private lands. Conflicts tend to be localized rather than widespread and include excessive use of forage on winter ranges and riparian area degradation.

Overall habitat security for deer during the hunting season is good in Units 43 and 48. Seasonal road closures implemented primarily for elk security also benefit mule deer. Cover is relatively open and road densities are higher in Units 44, 45, and 52, necessitating controlled hunts to maintain the desired buck age structure.

Important habitat issues include: 1) Succession, and in some cases heavy livestock use, has caused a general decline in the health of aspen communities. Many stands have become decadent and/or are being replaced by conifers. 2) Winter ranges, primarily in Units 45 and 52, are considered to be limiting to mule deer in this Analysis Area. Winter ranges are predominately sagebrush-grass and generally do not have a strong bitterbrush component. Much of the winter habitat has been used heavily by deer and livestock for many years and is considered in poor condition in many areas. Medussahead rye has invaded winter ranges following fires and is considered a serious concern to the long-term health of the habitat. The prevalence of cheatgrass has also increased in deer winter habitats following fire and/or prolonged heavy grazing pressures that have depleted other understory species. Rehabilitation and protection of these very critical winter ranges will require careful long-term planning that will maintain adequate browse for wintering deer and improve understory vegetation. Conservation easements and/or acquisition of private lands in strategic locations would also help increase or maintain the winter carrying capacity for deer. 3) Timber harvesting and consequent road building activities continue in portions of Unit 43. Access management will continue to be an important issue for deer and elk management. Increased access frequently leads to more

conservative and restricted hunting season frameworks. 4) Private interests own or control access to important summer and fall habitats in Units 44 and 45. This has been a subject of much concern by hunters unable to gain access to areas they wish to hunt. 5) Depredation problems can become acute during severe winters in the King Hill/Bliss areas of Unit 45. Private land used for growing crops and pasturing livestock occurs along the lower perimeter of the deer winter range. On the Camas Prairie (Units 44 and 45), summer depredation problems on growing alfalfa are common during drought years.

Biological Issues

Data from the King Hill trend area in Unit 45 suggest mule deer populations in the Analysis Area have increased substantially since 1994. Prior to the decline in deer in 1993, deer populations exceeded winter range carrying capacity and damage to private property was extreme in some years. The short-term management goal has been to maintain the population lower than 1988-1992 levels through liberal antlerless harvest. Despite the liberal antlerless harvest strategy, the estimated population in the trend area increased by 61% from 1994 to 2002. Herd composition survey data suggest a decline in reproductive performance measured in December from 85 fawns:100 does (1973-1992) to 64 fawns:100 does (1993-2002). However, observed recruitment rates since 1991 have ranged from 21% in 1993 to 42% in 1996 and have averaged 33%, sufficient to allow modest population increases. Low recruitment in 2002 (21%) resulted in an estimated 23% decline in the spring population. In 2003, observed recruitment increased 31% and, combined with a 40% reduction in antlerless permits, is expected to result in a population increase. Buck to doe ratios are currently at 31 bucks per 100 does, well above the objective of 20 bucks per 100 does.

Interspecific Issues

The Analysis Area supports a substantial population of elk, a few moose, antelope, and at higher elevations, mountain goats. The relationship between deer and elk is presently unclear but is not believed to be a significant issue because there is little or no known overlap in winter use areas between deer and elk. On the Bennett Hills Front deer winter ranges, mule deer will maintain management priority over elk if there are competitive concerns during winter. A small population of antelope also occurs in Units 44 and 45 but there is little overlap of seasonal use areas.

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

Predation Issues

Mountain lions, coyotes, black bears, and bobcats are potential predators on mule deer in the Analysis Area. In recent years, mountain lion populations have increased in these units, presumably in response to the high deer populations in the late 1980s and early 1990s. Coyote numbers are believed to have increased in the past 30 years; however, they are subject to

unregulated hunting and periodic control activities by USDA Wildlife Services. Black bear numbers have increased slightly in recent years but densities are considered relatively low. Because the management objective has been to slow the rate increase in this deer herd, any effects that predators may have had on deer population dynamics is considered inconsequential.

Winter Feeding Issues

Supplemental winter feeding of deer has not occurred in the past few years and is not considered an important issue in this Analysis Area.

Information Requirements

The King Hill winter trend area will continue to be surveyed annually to monitor population status in relation to management objectives. Pre- and post-winter herd composition surveys will be conducted to monitor over-winter fawn mortality, recruitment rate, and the buck to doe ratio.

The Bennett Hills Front has some of the highest wintering deer densities in Idaho and winters a high proportion of the mule deer in the Magic Valley Region. There is a need for improved monitoring of winter range condition and trend.

Mule Deer
Analysis Area 7 (Units 43, 44, 45, 48, 52)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
King Hill (45)	2003	6360	5000
Total		**6360**	**5000**

Buck Status & Minimum Criterion

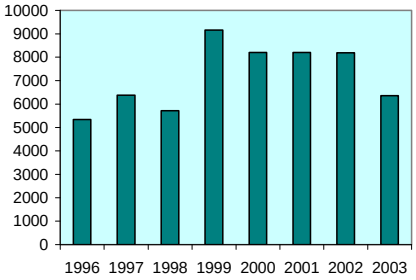
	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2002	31	20
%4+ Pts in the Harvest	2000-02	58	45

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
King Hill (45)	5341	6375	5720	9165	8198	8042	8195	6360
Comparable Surveys Total	**5341**	**6375**	**5720**	**9165**	**8198**	**8198**	**8195**	**6360**

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

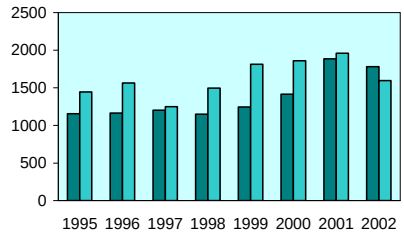


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	1157	1165	1203	1150	1247	1415	1886	1780
Antlered Harvest	1445	1564	1248	1496	1815	1861	1961	1598
% 4+ Points	51	53	42	37	48	48	40	45
Hunter Numbers	4782	5030	5966	6573	7006	ND	8630	8894

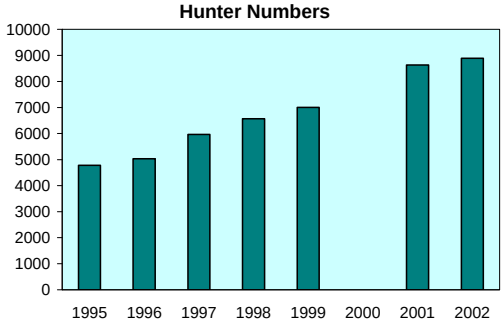
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

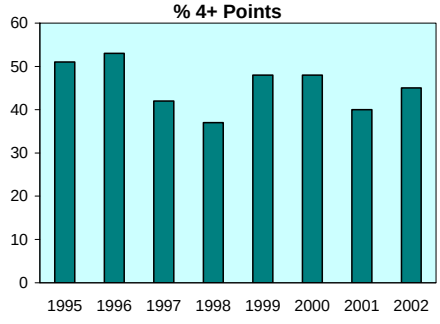


Figure 7. Mule Deer Analysis Area 7

ANALYSIS AREA 8 (UNITS 36, 36A, 49, 50)

Management Objectives

Objectives for these units are to maintain a minimum of 15 bucks per 100 does in post-season surveys and 30% ≥4-point bucks in the harvest. When estimated deer numbers exceed 4,100 in the Unit 50 trend area, antlerless seasons will be considered.

Historical Perspective

Mule deer were scarce and harvests low for much of the early part of the 20th century. By mid-century, mule deer had become the predominant big game animal. Once known for strong mule deer populations, particularly in Unit 36A, these units produced very high mule deer harvests in the 1950s and 1960s. By the 1970s, harvests had dropped by two-thirds as more conservative management strategies were implemented. Despite two decades of very conservative antlerless harvests and increasingly conservative buck seasons, mule deer populations have failed to return to their previous high densities and may yet be declining. Although deer herds declined well before any significant increase in elk numbers, current high elk densities may well be helping to suppress deer populations.

Habitat Issues

Cattle ranching, livestock grazing, and recreation are dominant human uses of the landscape in these units. This is in a generally arid region where forage production and deer harvest can be strongly influenced by growing season precipitation. Deer depredations on agricultural crops are common and are especially pronounced in dry years.

Habitat ultimately determines deer densities and productivity. However, specific limiting factors within the habitat are poorly understood. In some areas, deer winter in mature stands of mountain mahogany that appear relatively stagnant and unproductive. Elk may have removed much of the mountain mahogany forage within reach of deer. Forests are slowly encroaching into shrub and grassland communities. Spread of noxious weeds such as knapweed and leafy spurge could ultimately have significant impacts on winter range productivity.

Biological Issues

Very little aerial survey data have been collected in these units in recent years. Buck harvest in the late 1980s in this Analysis Area reached the highest levels since at least 1970. In the 1990s, harvest dropped to near average levels, except in Unit 49, which remained well above the long-term average. Since seasons were shifted earlier in 1991, comparatively more of the Unit 36/ 36A buck harvest has come from Unit 36.

Interspecific Issues

Current high elk densities may be having some impact on the area's capacity to produce deer. Pronghorn antelope, mountain goat, and bighorn sheep also share the range but generally overlap

little with mule deer. Livestock rangeland grazing, another potential source of competition, has generally been reduced in recent years.

Predation Issues

Black bear densities appear to be low to moderate and stable. Mountain lion densities are low to moderate and appear to have increased in recent years, probably at least in part due to increased elk densities. Coyotes are common and have an unknown impact on deer populations. Bobcats, red fox, and golden eagles also occur in the area but are not thought to account for significant predation on deer. Wolves recently reintroduced by the USFWS in central Idaho are now established in Area 8, which may have some effect on other predators and on deer. The addition of wolves will likely have an impact on black bear, mountain lion, and coyote populations. At some level, predation could benefit deer herds to the extent that it reduces elk competition and keeps deer herds below carrying capacity, where they can be more productive. However, excessive levels of predation can also suppress prey populations to undesirably low levels. At this point, it is unclear what the net impact of predation will be with the new mix of large predators.

Winter Feeding Issues

Emergency winter feeding of deer occurs infrequently, only during critical winter conditions. In Unit 50, adequate winter range combined with low snow accumulations precludes the need for supplemental feeding. Small-scale private feeding operations may occur throughout the Analysis Area.

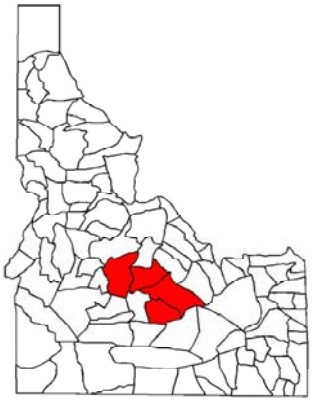
Information Requirements

Survey data on mule deer herd sex and age composition and trends in deer numbers are inadequate. Impacts of elk on mule deer production and survival are suspected but unknown. The most productive deer herds are those maintained at a level well below carrying capacity. Better information is needed to identify appropriate deer densities that will maintain optimum productivity and harvest. Migratory patterns are largely unknown.

Mule Deer
Analysis Area 8 (Units 36, 36A, 49, 50)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
(50)	2002	5703	4100
Total		**5703**	**4100**

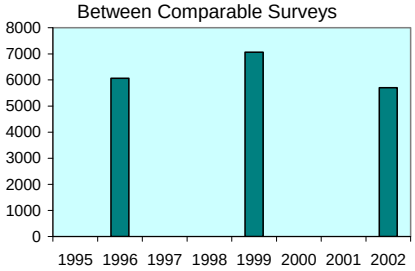


Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2002	6	15
%4+ Pts in the Harvest	2000-02	27	30

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

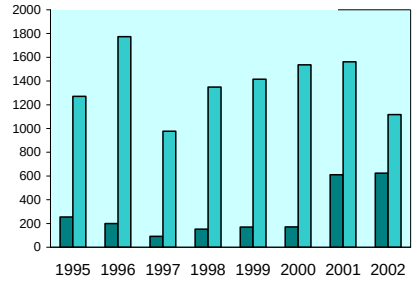


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
(50)	ND	6059	ND	ND	7063	ND	ND	5703
Comparable Surveys Total	**ND**	**6059**	**ND**	**ND**	**7063**	**ND**	**ND**	**5703**

Note: ND = no survey data available.

Harvest*



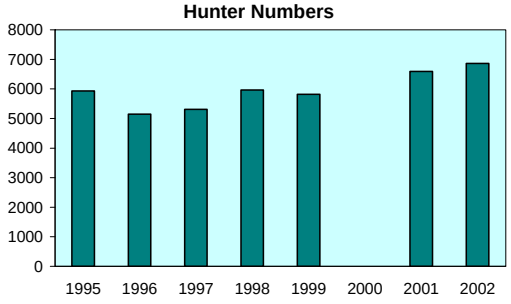
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	255	199	92	153	170	172	611	624
Antlered Harvest	1270	1773	978	1348	1415	1537	1563	1116
% 4+ Points	42	36	34	36	22	31	23	26
Hunter Numbers	5931	5150	5310	5961	5821	ND	6593	6864

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

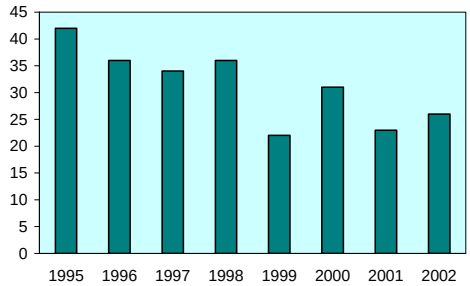


Figure 8. Mule Deer Analysis Area 8

ANALYSIS AREA 12 (UNITS 40, 41, 42, 46, 47)

Management Objectives

Post-season buck:doe ratios will be maintained at a minimum of 25 bucks per 100 does and the percent 4+ points in the harvest will be maintained at no less than 35%. The lack of trend area surveys makes it difficult to set measurable population objectives for this area. Usually, the level of depredation complaints is the key indicator of the need to consider antlerless harvest.

Historical Perspective

Units 40, 41, 42, and 47 have traditionally supported substantial deer herds and provided hunting opportunity for southern Idaho hunters. Unit 46 has never supported a large resident deer herd, but nonetheless has provided important general hunting opportunity. During the 1930s and 1940s, deer populations were low and hunting opportunities were very limited in these units. By the 1950s and 1960s, the deer numbers had increased to very high levels and depredation complaints were common. Deer seasons were liberalized and in some years extended to mid-December. Hunters who ventured into Owyhee County could take their pick of "a deer behind every bush." In 1955, an either-sex deer hunt with a two-deer bag limit was authorized in parts of Area 12 and 5,500 deer were harvested. Liberal hunting seasons continued into the early 1970s when an area-wide decline in deer populations resulted in more conservative hunting seasons. During the 1980s, the harvest averaged 1,500 bucks and a few hundred does per year. Since 1991, hunters have been restricted to taking 2-point or smaller bucks during the general season in Units 40, 41, and 42. Unit 47 has been managed with controlled hunts since 1970 and general antlered-only seasons have been maintained in Unit 46. All Analysis Area 12 units have controlled hunts for any buck in November with a dozen or more applicants for each permit.

These deer herds use habitat in Oregon, Nevada, and Idaho. As much as 80% of the deer herd in western Owyhee County migrates to Oregon to winter. On the eastern side of Owyhee County, substantial numbers of deer migrate north from Nevada to winter in Idaho. This interstate mixing of deer populations makes evaluation of the status of Idaho's herd very difficult.

Habitat Issues

About 90% of the land area is in public ownership. The BLM manages the majority of the area, and the IDL administers smaller segments. The area is primarily high; desert habitat dominated by sagebrush-grass and juniper cover types. Isolated mountain ranges and foothill areas include mixed mountain shrub and aspen types.

There have been several major changes in mule deer habitat over the last 30 years. Fires have destroyed large portions of winter ranges in Units 41 and 46. The burned areas are now dominated by planted crested wheatgrass or cheatgrass and have little browse to support wintering deer. In recent years, fire rehabilitation efforts have included sagebrush where deer habitat range was a concern. In Unit 42, there has been a substantial encroachment of juniper into former summer and winter ranges. In several areas where juniper has replaced more

important browse species, the number of wintering deer has been reduced from several thousand to a few hundred deer.

Biological Issues

Very little mule deer aerial survey data exists for this zone.

Interspecific Issues

Currently, elk populations are relatively small in this area. There are fewer than a hundred elk east of Highway 51 and about 600 elk on the west side of Owyhee County. This elk herd will be managed to maintain the current population level and it is not anticipated that elk populations will constitute a significant management concern for mule deer.

Livestock grazing is and has been the predominant land use in the area. In the early part of the century, excessive grazing by livestock combined with fire suppression severely altered plant communities to favor shrubs and mule deer benefited. Extensive areas have burned during the past several decades and much of the sagebrush steppe was reseeded to crested wheatgrass to benefit livestock grazing or was invaded by cheatgrass. The reestablishment of sagebrush in many areas will likely conflict with livestock grazing interests. Livestock numbers are currently significantly less than during the early part of the century. Serious conflicts are localized on winter ranges and critical riparian areas rather than widespread.

Predation Issues

Coyotes, bobcats, and mountain lions are the large predators in this area. The mountain lion population increased during the late 1980s and early 1990s when deer numbers were high and remain healthy. In local areas, mountain lion and coyote predation could have some impact on the deer population but the relationship is poorly understood. There are no wolves or black bears in the area.

Winter Feeding Issues

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

Information Requirements

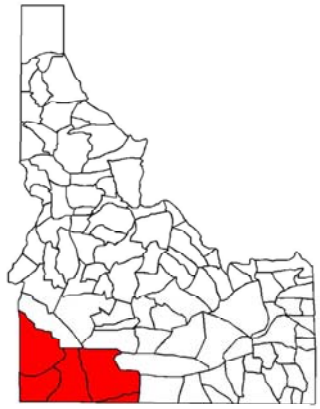
The primary data need for these units is population information. The winter ranges contain some mixture of deer from Oregon/Idaho or Nevada/Idaho. The herds can be surveyed in the winter, but status of these wintering animals needs to be allocated to the appropriate hunting season herds. This lack of population information on these important deer herds is a concern to managers.

Mule Deer
Analysis Area 12 (Units 40, 41, 42, 46, 47)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
ND	ND	ND	NA
Total		**ND**	**NA**

Note: ND = no survey data available, NA = not applicable.

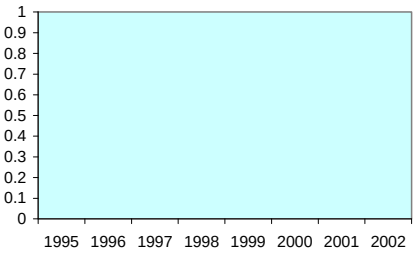


Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	ND	ND	25
%4+ Pts in the Harvest	1999-01	23	35

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

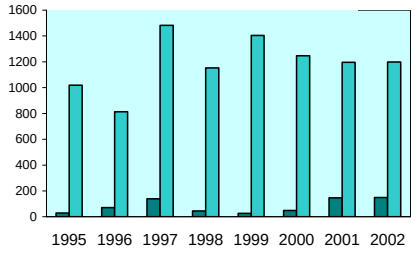


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
ND	ND	ND	ND	ND	ND	ND	ND	ND
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Note: ND = no survey data available.

Harvest*



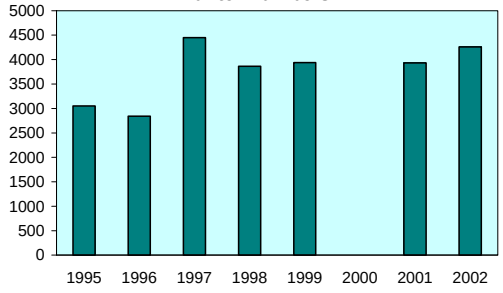
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	29	70	139	45	26	48	146	149
Antlered Harvest	1018	812	1482	1152	1405	1247	1196	1199
% 4+ Points	64	57	48	36.8	28	19	21	21
Hunter Numbers	3050	2841	4450	3862	3937	ND	3935	4260

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.
%4+ points does not include 2-point only hunts.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

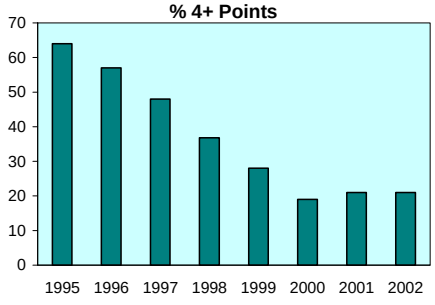


Figure 9. Mule Deer Analysis Area 12

ANALYSIS AREA 13 (UNIT 53)

Management Objectives

The objective for Analysis Area 13 is to maintain a small resident population of mule deer compatible with the area's agriculture. Current hunting season frameworks appear to be accomplishing this objective. Given the limited priority placed on managing for mule deer, no trend area will be established.

Historical Perspective

It has been reported that mule deer were relatively abundant in Unit 53 around 1900. However, deer habitat was substantially altered with human settlement, which brought an increase in range fires and the development of large-scale irrigation projects. Today, more than half of Unit 53 is irrigated farmland. The northern portion of the unit contains an extensive tract of land managed by the BLM, primarily for livestock grazing. Much of the BLM lands have been reseeded to crested wheatgrass, reducing their value for mule deer.

Unit 53 currently has a small resident deer population and cannot support many deer without unacceptable conflicts with agriculture. Depredation complaints from orchards in the Snake River canyon are common. Unit 53 has some importance as winter range for mule deer from units to the north. Movement of deer into Unit 53 during winter was first noted in the early 1980s following extensive fires and loss of sagebrush habitat in Unit 52A. The number of wintering deer varies considerably depending on winter severity and snow depths. During the 1985-1986 winters, more than 3,000 mule deer moved into Unit 53 and resulted in 54 depredation complaints. During the severe winter of 2001-2002, large numbers of deer moved into Unit 53 primarily east of Jerome and resulted in a substantial number of deer-vehicle collisions on Interstate 84.

Harvest management is currently designed to keep resident deer numbers low. Short-range weapon hunting on the west side of the unit has been successful in minimizing complaints from orchard owners. On the east side of the unit, a liberal four-month archery season allows a substantial amount of hunting opportunity close to the region's population centers. In 2001, the state record archery-harvested mule deer buck was taken in Unit 53.

Habitat Issues

Lands administered by the BLM provide important winter habitat, especially during severe winters when large numbers of deer are present. Because of the potential for considerable depredation problems on private lands, BLM lands have added value for wintering deer. Sagebrush removal projects to maintain crested wheatgrass seeding for livestock grazing may become an issue on some grazing allotments. As sagebrush reestablishes on burned areas in Unit 52A, the need for maintaining winter habitat in Unit 53 may lessen.

Biological Issues

No population monitoring is conducted in this unit.

Interspecific Issues

There are no competitive concerns with the few elk and antelope that occur in Unit 53.

Heavy livestock use in some areas has the potential to be a problem in those winters when large numbers of mule deer move into Unit 53.

Predation Issues

Coyotes are the only important predators of deer present in substantial numbers; a few mountain lions inhabit the unit primarily in the Snake River Canyon. Predation is not a major issue because the objective is to maintain only a small resident deer population and large numbers of wintering deer occur in the unit infrequently.

Winter Feeding Issues

Winter feeding was conducted during the 1985-1986 winter in an attempt to help reduce winter losses and keep deer away from roads where collisions with vehicles were common. The Department will work closely with the Regional Winter Feeding Advisory Committee to evaluate any future supplemental feeding issues.

Information Requirements

None.

Mule Deer
Analysis Area 13 (Unit 53)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
ND	ND	ND	NA
Total		**ND**	**NA**

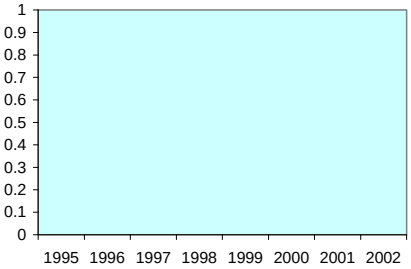
Note: ND = no survey data available, NA = not applicable.

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	ND	ND	NA
%4+ Pts in the Harvest	1999-01	39	15

Note: ND = no survey data available, NA = not applicable.

Population Change
Between Comparable Surveys

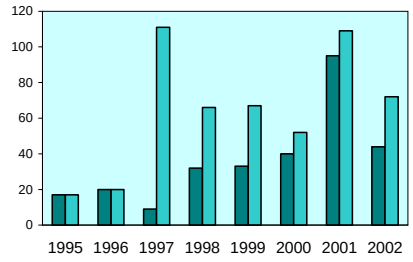


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
ND	ND	ND	ND	ND	ND	ND	ND	ND
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Note: ND = no survey data available.

Harvest*



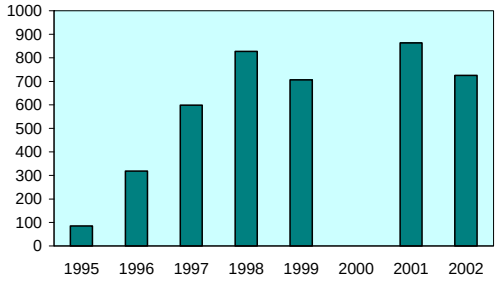
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	17	20	9	32	33	40	95	44
Antlered Harvest	17	20	111	66	67	52	109	72
% 4+ Points	0	0	33	39	40	37	41	42
Hunter Numbers	85	318	599	827	706	ND	863	725

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

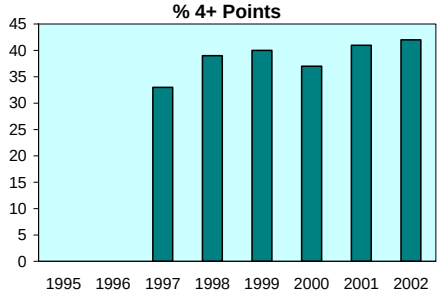


Figure 10. Mule Deer Analysis Area 13

ANALYSIS AREA 14 (UNITS 54, 55, 57)

Management Objectives

The objective for Analysis Area 14 is to restrict antlerless harvest when trend area populations are less than 3,200 deer; conversely, antlerless harvest will be considered when deer numbers exceed this threshold value. This value represents an intermediate population size between current status and numbers observed during the late 1980s and early 1990s when deer populations were considered higher than could be sustained with existing habitat conditions and depredation levels. Deer populations will be managed to maintain or exceed 25 bucks per 100 does in the pre-winter population and >35% bucks with 4-point or larger antlers in the October harvest.

Historical Perspective

During the early 1900s, mule deer populations in Analysis Area 14 were very low, due in part to unregulated harvest. During the late 1800s and early 1900s, heavy use by domestic livestock greatly altered the habitat. Dense shrubs fields, dominated by sagebrush and bitterbrush, replaced plant communities dominated by grasses. This change in habitat set the stage for dramatic increases in deer numbers. Closed hunting seasons from 1909-1935 and very conservative seasons through 1940 helped allow deer populations to increase. By 1950, deer numbers had reached an estimated 20,000 head in Unit 54 and winter ranges were considered severely overbrowsed. Efforts were made to reduce deer populations with both general and controlled season frameworks. Following a significant decline in numbers during the mid-1970s, deer populations increased again during the late 1980s, a period of prolonged drought conditions and mild winters. During the winter of 1992-1993, deer populations declined by an estimated 35-40%. Deer had entered the winter in poor physiological condition and high over-winter fawn and buck mortality occurred. Since 1993, deer numbers have remained at relatively low levels despite favorable climatic conditions and conservative hunting seasons.

Since 1970, this area has been managed exclusively with controlled firearms seasons. These units are very popular with sportsmen desiring quality, high hunter success, low hunter density, and the opportunity to observe many deer. Since the 1993 population decline, antlerless hunts have been eliminated and antlered permits reduced.

Segments of the deer populations exhibit interstate movements. In Units 54 and 55, there are migrations south to winter ranges in Nevada and Utah, respectively. Harvest management in Utah and Nevada has been compatible with the Department's management objectives. Important winter ranges in this Analysis Area are: Eightmile (Unit 57), Jim Sage (Unit 55), Willow Creek (Unit 55), Dry Creek (Unit 54) and Sugarloaf (Unit 54).

Habitat Issues

This Analysis Area is characterized by isolated mountain ranges surrounded by farmland and sagebrush-grass semi-desert. At low to mid elevations, juniper woodlands are common with mixed mountain shrub and aspen communities occurring along riparian areas and on some north-

and east-facing slopes. At higher elevations, pockets of conifers (lodgepole pine, Douglas fir, and subalpine fir) and aspen occur on north- and east-facing aspects and more mesic sites. Primarily, the USFS and BLM manage important summer and winter habitats. When deer populations are high, depredation complaints on growing alfalfa are common in Unit 55.

Important habitat issues include: 1) Succession, and in some cases heavy livestock use, has caused a general decline in the health of aspen communities. Many stands have become decadent and/or are being replaced by conifers. Where the vigor and size of aspen communities can be improved, prescribed fire should be considered. 2) The quality and quantity of winter habitat is considered to be limiting to mule deer in this Analysis Area. During the past 30 years, fire has altered much of the critical habitat in Unit 54. The loss of extensive bitterbrush stands on the Dry Creek, Sugarloaf, and Buckbrush Flat winter ranges is expected to have long-term negative effects on deer populations. While sagebrush is beginning to reestablish on some of these winter ranges, bitterbrush recovery has been slow or nonexistent. In Unit 55, the distribution and density of juniper has increased on some winter ranges, replacing important browse for wintering deer. Management should favor the reestablishment and long-term maintenance of shrubs on winter ranges. Bitterbrush plantings should be undertaken in areas where natural recovery is not evident. In some areas, carefully designed projects to remove junipers by burning or chaining may have long-term benefits for mule deer. 3) Because of the open nature of the habitat and high road densities in some areas, habitat security for deer during the hunting season is considered moderate, although some high security areas exist in all units. Road densities are considered high in Unit 54 and moderate in Units 55 and 57. Several motorized vehicle area closures have been implemented in Unit 54 to provide additional security habitat and nonmotorized hunting opportunity. Additional motorized vehicle restrictions may be recommended to maintain quality hunting opportunity and desired buck age structures in Unit 54.

Biological Issues

Despite conservative harvest management, deer populations in this Analysis Area have continued to decline since the 1993 winter die-off. Estimated recruitment rates in Unit 54 have averaged only 29% since 1993. Causes for the lower reproductive performance are unknown. Winter fawn mortality has been average, however, the ratio of fawns entering the winter has been low. From 1974-1992, a pre-winter ratio averaged 83 fawns per 100 does compared to 64 fawns per 100 does from 1993-2002. Buck to doe ratios in the Analysis Area are slightly below the objective of 25 bucks per 100 does.

Interspecific Issues

Elk, black bears, and bighorn sheep were eliminated from these units during the late 1800s and early 1900s. Today, small numbers of elk occur, generally near the Nevada and Utah borders. There are currently no competitive concerns with deer and elk. A small population of California bighorn sheep inhabits the northeast portion of the Sawtooth National Forest in Unit 54 but poses no concern with mule deer management.

Livestock have imposed the major forage demand throughout these units for over a century. Currently, on public lands, livestock management is generally compatible with deer habitat management, although heavy livestock use in some localized areas has negative effects. In the past, conversion of large areas from native sagebrush/grass communities to crested wheatgrass seedings have had negative effects on deer habitat.

Predation Issues

Mountain lions, coyotes, and bobcats are potential predators on mule deer in the Analysis Area. Mountain lion populations increased markedly in these units, presumably in response to the high deer populations in the late 1980s and early 1990s. Mountain lion harvest doubled, depredations on domestic sheep increased, and the frequency of reported mountain lion observations increased substantially. While the relationship between deer and mountain lions is unclear, mountain lions may have played a role in slowing the recovery in the deer herds. There are recent indications from mountain lion hunters and researchers that mountain lion populations have declined, probably in response to the reduced mule deer prey base. Coyote numbers are believed to have increased in the past 30 years; however, they are subject to unregulated hunting and periodic control activities by USDA Wildlife Services. The effect, if any, of coyote predation on mule deer population dynamics is unknown.

Winter Feeding Issues

Supplemental winter feeding of deer has not occurred in the past few years and is not considered an important issue in this Analysis Area.

Information Requirements

Annual aerial surveys of trend areas are needed to monitor population status in relation to management objectives. Periodic sightability surveys are needed to monitor changes in winter distribution.

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

Mule Deer
Analysis Area 14 (Units 54, 55, 57)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Sugarloaf (54)	2003	662	1400
Dry Creek (54)	2003	471	1000
Jim Sage (55)	2003	927	800
Total		**2060**	**3200**

Buck Status & Minimum Criterion

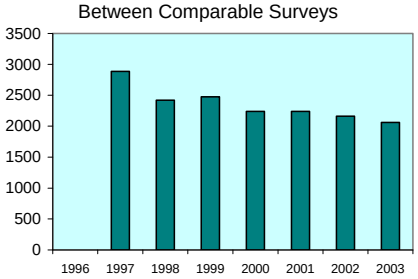
	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2002	22	25
%4+ Pts in the Harvest	1999-01	37	35

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
Sugarloaf (54)	1602	1193	972	1031	737	742	685	662
Dry Creek (54)	843	921	773	647	480	564	548	471
Jim Sage (55)	ND	773	675	796	1022	935	929	927
Comparable Surveys Total	**ND**	**2887**	**2420**	**2474**	**2239**	**2241**	**2162**	**2060**

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

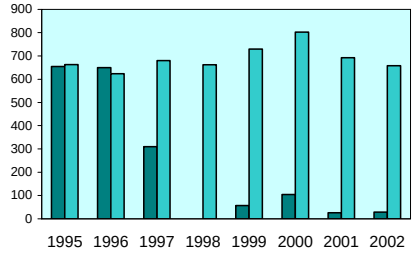


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	654	649	310	0	57	104	26	29
Antlered Harvest	663	624	680	662	730	802	692	658
% 4+ Points	40	33	52	33	30	40	40	40
Hunter Numbers	2534	2270	1865	1727	1718	ND	1828	1953

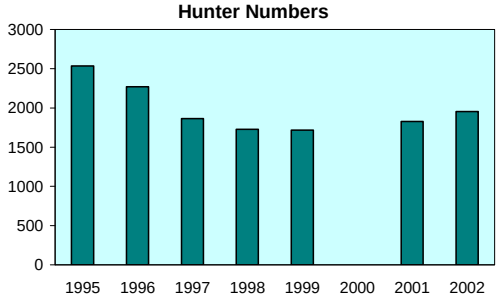
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

Harvest



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

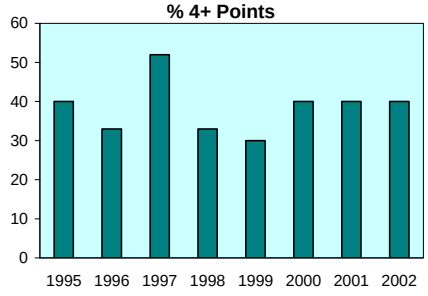


Figure 11. Mule Deer Analysis Area 14

ANALYSIS AREA 15 (UNITS 52A, 63, 63A, 68, 68A)

Management Objectives

Given the low habitat potential for Analysis Area 15 to support high densities of deer and the limited ability to collect reliable population information, the management objective will be to maintain deer and not fall below 30% 4+ points antlered deer in the harvest. No trend area will be established in this Analysis Area.

Historical Perspective

The deer population probably has changed very little since historic times in this Analysis Area. Accounts of trappers through this area in the mid-1800s indicated that buffalo, elk, antelope, and bighorn sheep were far more common than mule deer. Given the low densities of deer and low priority for deer in this Analysis Area, little data is available to indicate what population trends have occurred through time.

Harvest management has been a general hunt format, except for Units 63A and 68A where human safety issues have warranted either archery or short-range weapon hunts.

Habitat Issues

This Analysis Area primarily is comprised of dry desert shrub types, thus representing a low productivity site. Potential to support high numbers of mule deer is extremely limited. However, agriculture combined with riparian habitats along the Snake River in Units 63A and 68A can provide for high density populations.

The BLM administers the majority of the public ground (54% of total area) in Analysis Area 15. Private ground makes up 33% and the Idaho National Environmental and Engineering Laboratory, Fort Hall Indian Reservation, and Craters of the Moon National Park combine for the remaining 12%. Most of the private ground is used for production of row crops and is situated along the Snake River floodplain. Both mule deer and white-tailed deer periodically create depredation concerns within the agricultural zones.

Wildfires continue to play a big role with habitat throughout the Analysis Area. In many cases, fire has replaced climax sagebrush stands with perennial grasses.

Biological Issues

The majority of this Analysis Area lacks potential to support good numbers of mule deer. No reliable population information is available to determine changes and/or trends in populations. Mule deer probably increase somewhat during favorable environmental conditions, but can be drastically reduced during significant winter events. White-tailed deer comprise a small percentage of the total deer in this area, and are primarily restricted to the riparian/agriculture habitats of the Snake River floodplain. No information exists as to the trends in composition of mule deer versus white-tailed deer.

Interspecific Issues

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

Predation Issues

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

Winter Feeding Issues

Emergency supplemental feeding has not been conducted in the past few years. However, private feeding operations probably occur periodically.

Information Requirements

Given the low potential for supporting high numbers of mule deer throughout this Analysis Area, little population information would be warranted. However, some information for Unit 68A, which has high archery participation, would be valuable.

Mule Deer
Analysis Area 15 (Units 52A, 63, 63A, 68, 68A)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
ND	ND	ND	NA
Total		**ND**	**NA**

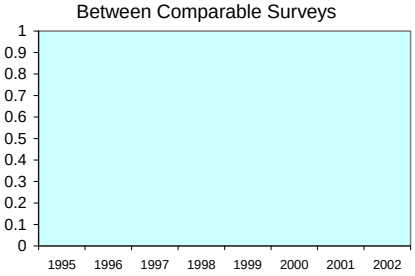
Note: ND = no survey data available, NA = not applicable.

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	ND	ND	NA
%4+ Pts in the Harvest	2000-02	42	30

Note: ND = no survey data available, NA = not applicable.

Population Change
Between Comparable Surveys

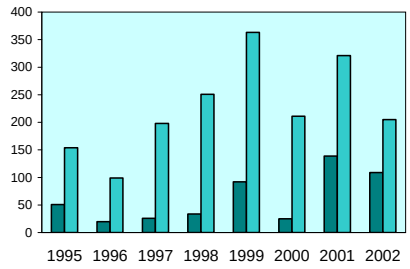


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
ND	ND	ND	ND	ND	ND	ND	ND	ND
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Note: ND = no survey data available.

Harvest*



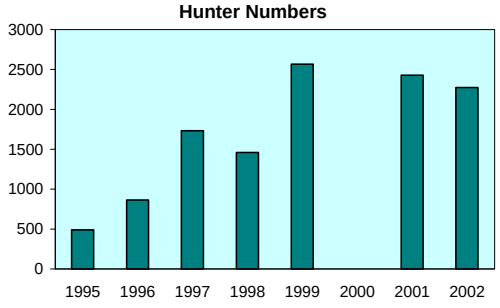
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	51	20	26	34	92	25	139	109
Antlered Harvest	154	99	198	251	363	211	321	205
% 4+ Points	50	60	37	48	23	38	36	52
Hunter Numbers	490	863	1732	1460	2566	ND	2428	2273

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

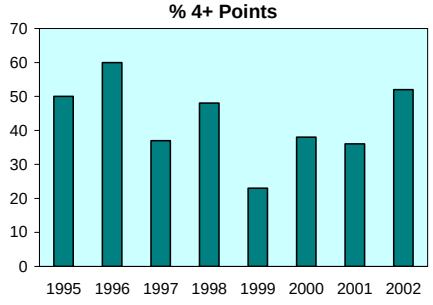


Figure 12. Mule Deer Analysis Area 15

ANALYSIS AREA 20 (UNITS 56, 70, 73, 73A)

Management Objectives

One objective for Analysis Area 20 is to restrict antlerless harvest when trend area populations are less than 5,700 deer; conversely, liberal antlerless harvest will be encouraged when deer numbers exceed this threshold value. This value represents an intermediate population size between current status and numbers observed during the late 1980s and early 1990s when deer populations were considered higher than could be supported during a normal winter and presented depredation concerns for agricultural producers. Additional objectives include not falling below 15 bucks:100 does post-season and not falling below 30% 4+ points in the harvest.

Historical Perspective

The mule deer population in Analysis Area 20 (Units 56, 70, 73, and 73A) has fluctuated widely since the mid-1800s. Deer numbers probably declined through the early 1900s, possibly due to unregulated harvest. By 1920, observations of deer were quite rare. Between 1920 and the early 1970s, deer numbers increased dramatically, interrupted briefly by significant winter mortality. Following a significant decline in numbers beginning in 1972, numbers again increased until the late 1980s. The population level attained during this second peak probably did not reach that attained during the 1950s-early 1970s. Overall, mule deer numbers in these units appear to be highly volatile, with wide fluctuations over relatively short time periods.

Harvest management during the 1950s and 1960s was designed to maintain or reduce deer numbers in response to what was considered overbrowsed winter ranges. Season frameworks in these units have varied considerably more than elsewhere in southeastern Idaho. General seasons have been the rule except in Unit 56, which had controlled hunts from 1970 through 1981. Season lengths have varied from three days to five weeks. Additionally, either-sex opportunity has ranged from none to extra antlerless-only tags available in 1989 and 1990 for Units 70, 73, and 73A. Following the winter of 1992-1993, when significant winter mortality occurred, harvest management has been conservative. Unit 56 has had a two-point only general season since 1991 to increase the proportion of mature males in the population. Research in the mid-1980s found very low survival of bucks in Unit 73. A two-point only regulation was enacted there in 1997 after the buck:doe ratio fell below 10:100. Despite very conservative hunting seasons and low harvest since 1993, wintering populations of deer in Units 70, 73, and 73A have either remained stable at low levels or declined.

Major wintering areas in this Analysis Area are: Pauline (Unit 70), Lead Draw to Walker Creek (Unit 70), Elkhorn Mountain (Unit 73), Malad Face (Unit 73), Samaria Mountain (Unit 73), Hansel Mountains (Unit 73), Rockland Valley (Unit 73A), Knox Canyon (Unit 73A), Juniper (Unit 56), the Hagler Canyon complex (Unit 56), and Sweetzer Pass (Unity 56).

Habitat Issues

This Analysis Area represents the least productive habitats in southeastern Idaho. Low productive habitats combined with variable winter conditions undoubtedly cause mule deer

numbers to vary considerably over time. Three main vegetation types predominate: sagebrush-grassland, aspen, and conifer. Other variations of these three main types that are important to deer include: mixed shrub communities, Utah juniper, and curlleaf mahogany. The current mix of vegetation cover types is a result of fire suppression efforts and intensive grazing by livestock during the early 1900s. These factors converted what was predominately perennial grass stands into shrublands with depleted or sparse understories. Given that current livestock grazing practices are much more conservative and designed to promote grass and that the current shrublands are aging, it is logical that quality mule deer habitat probably peaked earlier in the century. Additionally, the current conversion of aspen to conifer and replacement of mixed shrub and sagebrush communities by juniper probably will reduce habitat suitability for mule deer.

Approximately 41% of the land in this Analysis Area is publicly owned. The BLM and the USFS administer the majority of public land. The Fort Hall Indian Reservation makes up approximately 7%, while the remaining 52% is private ground. The private ground is predominately used for rangeland pasture, small grains, and hay production. A substantial amount of private land has been enrolled in the Conservation Reserve Program. Depredation complaints are generally limited to periods of high deer populations. Predominant land uses of the publicly owned ground include livestock grazing, timber management, and recreation. Of particular concern is the encroachment of human activity, either intense recreational efforts and/or structural developments, in mule deer winter range. Developments from the west side of Pocatello south to Walker Creek in Unit 70 have reduced the potential wintering area for deer.

Open habitat types combined with moderate to high road densities, and in some areas, unrestricted ATV travel result in a greater vulnerability standard for mule deer in this Analysis Area. Motorized travel on the Caribou National Forest within this Analysis Area is restricted to designated routes during the snow-free period of the year with the specific purpose of reducing impacts to wildlife habitat and reduced wildlife disturbance.

Biological Issues

Recruitment rates, as evidenced by December/January fawn:doe ratios, have ranged from 50-75 over the past few winters. It is believed that 70 fawns:100 does is adequate to maintain populations with normal winter mortality, while increased recruitment is necessary for population growth. Conversely, recruitment rates less than 70:100 are generally consistent with stable to declining populations.

Interspecific Issues

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

The current trend of elk occupying mule deer winter ranges is an area of major concern. Some winter ranges in this Analysis Area do not lend themselves to niche separation by the two species

and therefore, either direct resource competition and/or social intolerance will likely impact mule deer numbers. The Department will seek opportunities to minimize the occupancy by elk in key mule deer winter ranges.

Residential, recreational, and associated development has impacted available deer winter ranges, particularly in Unit 70. These impacts have likely had direct effects on numbers of deer, and will be impossible to mitigate. Continued growth of human populations will necessitate the acknowledgment of impacts to wildlife habitat and populations.

Predation Issues

Potentially, major predators of mule deer in this Analysis Area include mountain lions, coyotes, and bobcats. Mountain lion and coyote populations probably have increased during the last 30 years. It is unknown specifically what impact these changing predator systems are having on mule deer population dynamics.

Winter Feeding Issues

Emergency supplemental feeding of deer occurs periodically; however, these units generally have milder winter conditions than elsewhere in southeastern Idaho. In many cases, emergency feeding is initiated after deer have been attracted to cattle feedlot operations or private citizens began feeding deer early in winter. Both of these circumstances probably short-stop deer from reaching more suitable winter range and generally result in high over-winter mortality rates. The Department, working in conjunction with the Winter Feeding Advisory Committee, will discourage livestock operators and other private citizens from encouraging deer use of non-traditional food sources.

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

Information Requirements

The Department will explore various means of better quantifying over-winter mortality so that harvest recommendations are more responsive to changing populations.

Recent observed recruitment rates are consistent with either stable or slightly declining populations. A better understanding of factors affecting recruitment rates is needed.

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

Given that predator and elk populations and habitat have changed over time, a better understanding of the inter-relationships and ecological processes governing mule deer population dynamics would greatly aid in management recommendation decisions.

Mule Deer
Analysis Area 20 (Units 56, 70, 73, 73A)

Trend Area Status & Antlerless Harvest Threshold

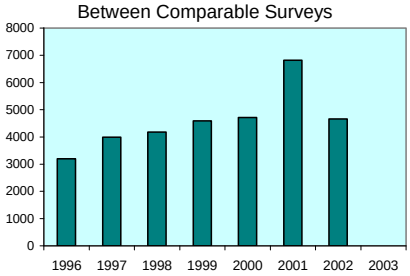
Trend Area (Unit)	Current Status: Survey Year	Current Status: Total Deer	Antlerless Harvest: Threshold Total Deer
Heglar (56)	2003	700	1800
Elkhorn (73)	2002	749	1200
Malad Face (73)	2002	761	1200
Rockland (73A)	2002	2016	1500
Total		**4226**	**5700**

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2001	21	15
%4+ Pts in the Harvest	1999-01	32	30

Note: Unit 56 has a minimum buck:doe ratio criterion of 25,
%4+ point criteria does not apply to 2-point only hunts.

Population Change
Between Comparable Surveys

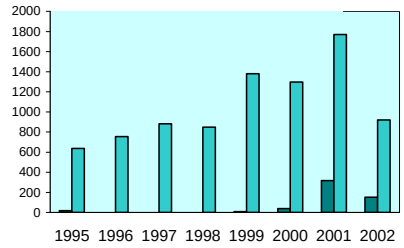


Trend Area Surveys

Trend Area (Unit)	Deer Numbers: 1996	1997	1998	1999	2000	2001	2002	2003
Heglar (56)	ND	1324	1325	1113	1318	1710	1133	700
Elkhorn (73)	908	929	787	958	980	1387	749	ND
Malad Face (73)	962	701	947	942	885	1622	761	ND
Rockland (73A)	1324	1033	1121	1578	1533	2100	2016	ND
Comparable Surveys Total	**3194**	**3987**	**4180**	**4591**	**4716**	**6819**	**4659**	**ND**

Note: ND = no survey data available.

Harvest*



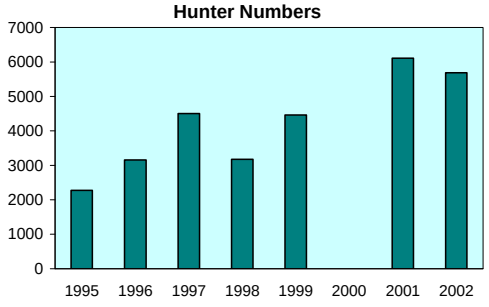
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	17	0	0	0	7	39	317	151
Antlered Harvest	638	754	883	847	1379	1298	1770	921
% 4+ Points	70	67	50	45	35	31	31	40
Hunter Numbers	2273	3157	4504	3172	4465	ND	6109	5687

Note: Telephone survey harvest data prior to 1998 does not include
general primitive weapons season data.
%4+ points does not include 2-point only hunts.

* Note: Harvest prior to 1998 does not include
general primitive weapons season data.

Hunter Numbers



% 4+ Points

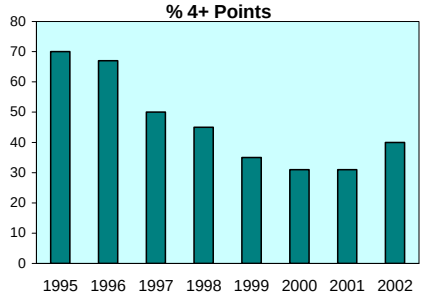


Figure 13. Mule Deer Analysis Area 20

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mule Deer Surveys and Inventories
PROJECT:	W-170-R-27		
SUBPROJECT:	5	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	2		

PERIOD COVERED: July 1, 2002 to June 30, 2003

SOUTHEAST REGION

ANALYSIS AREA 21 (UNITS 71, 74)

Management Objectives

One objective for Analysis Area 21 is to restrict antlerless harvest when trend area populations are less than 2,000 deer; conversely, liberal antlerless harvest will be encouraged when deer numbers exceed this threshold value. This value represents an intermediate population size between current status and numbers observed during the late 1980s and early 1990s when deer populations were considered higher than could be supported during a normal winter and presented depredation concerns for agricultural producers. Additional objectives include not falling below 15 bucks:100 does post-season and not falling below 30% 4+ points in the harvest.

Historical Perspective

The mule deer population in Analysis Area 21 (Units 71 and 74) has fluctuated widely since the mid-1800s. Early accounts by trappers through the area suggested that deer were seen but were less numerous than buffalo, bighorn sheep, and elk. Deer numbers probably declined through the early 1900s, possibly due to unregulated harvest. By 1920, observations of deer were quite rare. Between 1920 and the early 1970s, deer numbers increased dramatically, interrupted briefly by significant winter mortality. Following a significant decline in numbers beginning in 1972, numbers again increased until the late 1980s. The population level attained during this second peak probably did not reach that attained during the 1950s - early 1970s.

Harvest management during the 1950s and 1960s was designed to maintain or reduce deer numbers in response to what was considered over-browsed winter ranges. Long general either-sex seasons (3-5 weeks) predominated. Following the decline in the early 1970s, harvest management became more conservative with 2-4 week general seasons with varying amounts of either-sex opportunity offered. By the late 1980s, the deer population had increased to a point that a population reduction was desired. The years 1989 and 1990 were marked by four-week general either-sex seasons with extra deer tags available. Following the winter of 1992-1993 when significant winter mortality occurred, harvest management has been conservative.

Major wintering areas in this Analysis Area are: Blackrock Canyon (Unit 71), Portneuf Winter Range (Unit 71), the west facing slopes east of Downey (Unit 74), Hadley Canyon complex (Unit 74), Densmore Creek (Unit 74), and Treasureton (Unit 74).

Habitat Issues

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

Approximately 28% of the land in this Analysis Area is publicly owned. The USFS, BLM, and IDL administer nearly equal amounts of the public ground. The Fort Hall Indian Reservation makes up approximately 15%, while the remaining 57% is private ground. The private ground is predominately used for rangeland pasture, small grains, and hay production. Depredation complaints are generally limited to periods of high deer populations. Predominant land uses of the publicly-owned ground include livestock grazing, timber management, and recreation. Of particular concern is the encroachment of human activity, either intense recreational efforts and/or structural developments, in mule deer winter range. Development along the Portneuf, Hadley Canyon complex, and Treasureton winter ranges, in particular, will undoubtedly reduce the potential for wintering greater numbers of deer.

Open habitat types combined with moderate road densities, and in some cases unrestricted ATV travel, probably result in a greater vulnerability standard for mule deer in this Analysis Area. Additionally, these two units receive high amounts of hunting pressure partly because of their close association to Pocatello.

Biological Issues

Recruitment rates in this Analysis Area, as evidenced by December/January fawn:doe ratios, have only been measured once: 74 fawns:100 does was observed in 1996. It is believed that 70 fawns:100 does is adequate to maintain populations with normal winter mortality, while increased recruitment is necessary for population growth. Conversely, recruitment rates less than 70:100 are generally consistent with stable to declining populations.

Interspecific Issues

Although livestock grazes much of the mule deer range in this Analysis Area, interactions of concern are relatively few and tend to be limited to localized areas. Of primary concern are

livestock winter feedlot operations that over-concentrate deer during winter. Of minor concern are a few localized areas (riparian and winter range) of intense livestock pressure.

Of greater concern than livestock interactions is the current trend of elk occupying mule deer winter ranges. Some winter areas in this Analysis Area do not lend themselves to niche separation by the two species and, therefore, either direct resource competition and/or social intolerance will likely impact mule deer numbers. Recent encroachment of elk into mule deer winter ranges will require immediate action. The Department will aggressively seek opportunities to minimize the occupancy by elk in key mule deer winter ranges.

Predation Issues

Potentially major predators of mule deer in this Analysis Area include black bears, mountain lions, coyotes, and bobcats. The black bear population is extremely low and probably has remained unchanged for many years. Mountain lion and coyote populations are believed to have increased during the last 30 years. It is unknown specifically what impact these changing predator systems are having on mule deer population dynamics.

Winter Feeding Issues

Emergency supplemental feeding of deer occurs approximately every three years. Primary areas include between Inkom and McCammon and the west facing hills between McCammon and Downey. In many cases, emergency feeding is initiated after deer have been attracted to cattle feedlot operations or private citizens began feeding deer early in winter. Both of these circumstances probably short-stop deer from reaching more suitable winter range and generally result in high over-winter mortality rates. The Department, working in conjunction with the Winter Feeding Advisory Committee, will discourage livestock operators and other private citizens from encouraging deer use of non-traditional food sources.

Information Requirements

The Department will explore various means of better quantifying over-winter mortality so that harvest recommendations are more responsive to changing populations.

The 1996 recruitment rate is consistent with a stable population. Annual monitoring of recruitment is needed along with a better understanding of factors affecting recruitment rates.

Although habitat succession and change are occurring, it is unknown specifically what quantitative impacts will occur with deer populations. Furthermore, it is unknown whether the aging of current mule deer habitat leads to ultimately less productive and nutritious vegetation. Given that predator populations are significantly different than 30 years ago, it is unknown what impacts to deer may be occurring.

Given that predator and elk populations and habitat have changed over time, a better understanding of the interrelationships and ecological processes governing mule deer population dynamics would greatly aid in management recommendation decisions.

Mule Deer
Analysis Area 21 (Units 71, 74)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Portneuf(71)	2002	889	1700
Unit 74(74)	2002	ND	ND
Total		**(889)**	**(1700)**

Buck Status & Minimum Criterion

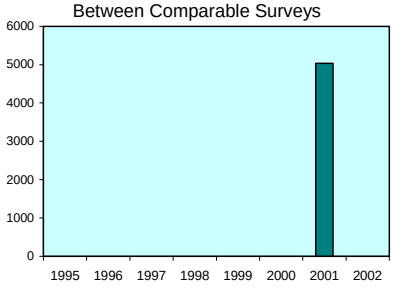
	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2001	12	15
%4+ Pts in the Harvest	1999-01	29	30

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1995	1996	1997	1998	1999	2000	2001	2002
Portneuf (71)	ND	1003	978	978	1097	1118	920	889
Unit 74(74)	ND	ND	ND	ND	ND	ND	4112	ND
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**	**5032**	**ND**

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

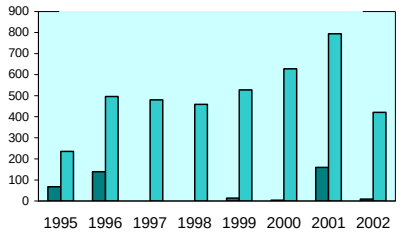


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	68	139	0	0	13	4	159	9
Antlered Harvest	236	496	480	459	527	628	794	421
% 4+ Points	50	46	25	25	27	28	32	39
Hunter Numbers	1303	2085	2535	2185	2239	ND	3154	2865

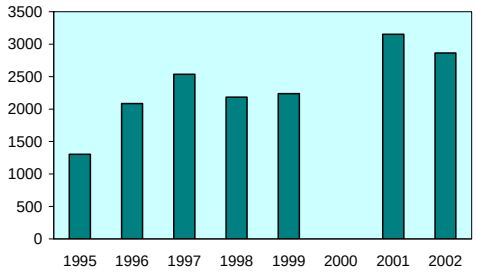
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

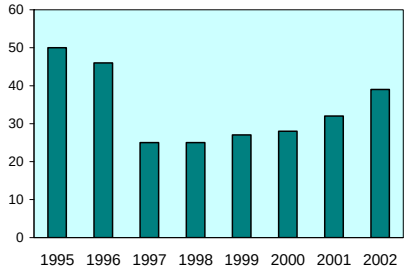


Figure 14. Mule Deer Analysis Area 21

ANALYSIS AREA 22 (UNITS 72, 75, 76, 77, 78)

Management Objectives

One objective for Analysis Area 22 is to restrict antlerless harvest when trend area populations are less than 10,000 deer, conversely, liberal antlerless harvest will be encouraged when deer numbers exceed this threshold value. This value represents an intermediate population size between current status and numbers observed during the late 1980s and early 1990s, when deer populations were considered higher than could be supported during a normal winter and presented depredation concerns for agricultural producers. Additional objectives include not falling below 15 bucks:100 does post-season and not falling below 30% 4+ points in the harvest.

Historical Perspective

The mule deer population in Analysis Area 22 has fluctuated widely since the mid-1800s. Early accounts by trappers through the area suggested that deer were seen, but were less numerous than buffalo, bighorn sheep, and elk. Deer numbers probably declined through the early 1900s, possibly due to unregulated harvest. By 1920, observations of deer were quite rare. Between 1920 and the early 1970s, deer numbers increased dramatically, interrupted briefly by significant winter mortality. Following a significant decline in numbers beginning in 1972, numbers again increased until the late 1980s. The population level attained during this second peak probably did not reach that attained during the 1950s - early 1970s.

Harvest management during the 1950s and 1960s was designed to reduce deer numbers in response to what was considered over-browsed winter ranges. Long general seasons with opportunity for extra deer tags predominated. Following the decline in the early 1970s, harvest management became more conservative with 2-4 week general seasons with varying amounts of either-sex opportunity offered. By the late 1980s, the deer population had increased to a point that a population reduction was desired. The years 1989 and 1990 were marked by four-week general either-sex seasons with extra deer tags available. Following the winter of 1992-1993 when significant winter mortality occurred, harvest management has been conservative.

Apparently a change in the winter distribution of mule deer has occurred, primarily in Unit 76. During the 1950s and 1960s, deer use of the Soda Front (Wood Canyon south to Montpelier) was extensive, while use of the Bear Lake Plateau and the Soda Hills (Unit 72) was minimal. Currently, the Bear Lake Plateau and the Soda Hills represent the two most significant winter ranges for mule deer in Unit 76.

Major wintering areas in this Analysis Area are: Soda Hills (Unit 72), Bear Lake Plateau (Unit 76), West Bear Lake (Unit 78), Grace Front (Unit 75), and the Oneida Narrows Complex (Unit 77). An unknown number of deer migrate to and winter in Wyoming and Utah.

Habitat Issues

This Analysis Area represents the most productive habitats for mule deer in southeastern Idaho. Three main vegetation types predominate: sagebrush-grassland, aspen, and conifer. Other

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

Primarily, the USFS publicly owns approximately 54% of the land in this Analysis Area. The remaining 46% of private ground is predominately used for rangeland pasture, small grains, and hay production. Depredation complaints are generally limited to periods of high deer populations. Predominant land uses of the publicly-owned ground include livestock grazing, timber management, recreation, and phosphate mining. Of particular concern is the encroachment of human activity, either intense recreational efforts (i.e. over-snow machine travel) and/or structural developments, in mule deer winter range. Development in the Bear River Valley of Unit 77 and along the West Bear Lake winter range in Unit 78 will undoubtedly reduce the potential for wintering greater numbers of deer.

Open habitat types combined with moderate road densities, and in some cases unrestricted ATV travel, probably result in a greater vulnerability standard for mule deer in this Analysis Area.

Biological Issues

Recruitment rates, as evidenced by December/January fawn:doe ratios, have ranged from 60-85 over the past few years. It is believed that 70 fawns:100 does is adequate to maintain populations with normal winter mortality, while increased recruitment is necessary for population growth. Conversely, recruitment rates less than 70:100 are generally consistent with stable to declining populations.

Interspecific Issues

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

Of greater concern than livestock interactions is the current trend of elk occupying mule deer winter ranges. Some winter areas in this Analysis Area do not lend themselves to niche separation by the two species and, therefore, either direct resource competition and/or social intolerance will likely impact mule deer numbers. Recent encroachment of elk into the Soda Hills will require immediate action in order to maintain this area as a significant mule deer winter range. The Department will aggressively seek opportunities to minimize the occupancy by elk in key mule deer winter ranges.

Predation Issues

Potentially major predators of mule deer in this Analysis Area include black bears, mountain lions, coyotes, and bobcats. The black bear population is extremely low and probably has remained unchanged for many years. Mountain lion and coyote populations are believed to have increased during the last 30 years. It is unknown specifically what impact these changing predator systems are having on mule deer population dynamics.

Winter Feeding Issues

Emergency supplemental feeding of deer occurs approximately every three years. Primary areas include around Soda Springs, Georgetown Canyon, Montpelier Canyon, and St. Charles Canyon. In many cases, emergency feeding is initiated after deer have been attracted to cattle feedlot operations or private citizens began feeding deer early in winter. Both of these circumstances probably short-stop deer from reaching more suitable winter range and generally result in high over-winter mortality rates. The Department, working in conjunction with the Winter Feeding Advisory Committee, will discourage livestock operators and other private citizens from encouraging deer use of non-traditional food sources.

Information Requirements

The Department will add another winter census trend area and explore various means of better quantifying over-winter mortality so that harvest recommendations are more responsive to changing populations.

Recent observed recruitment rates are consistent with either stable or slightly increasing populations. A better understanding of factors affecting recruitment rates is needed.

Although habitat succession and change are occurring, it is unknown specifically what quantitative impacts will occur with deer populations. Furthermore, it is unknown whether the aging of current mule deer habitat leads to ultimately less productive and nutritious vegetation. Given that predator populations are significantly different than 30 years ago, it is unknown what impacts to deer may be occurring.

Given that predator and elk populations and habitat have changed over time, a better understanding of the interrelationships and ecological processes governing mule deer population dynamics would greatly aid in management recommendation decisions.

Mule Deer
Analysis Area 22 (Units 72, 75, 76, 77, 78)

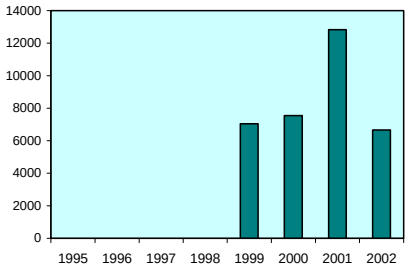
Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
West Bear Lake (78)	2002	1405	3000
Soda Hills (72)	2002	2877	4000
Bear Lake Plateau (76)	2002	2378	3000
Total		**6660**	**10000**

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2001	16	15
%4+ Pts in the Harvest	1999-01	30	30

Population Change
Between Comparable Surveys

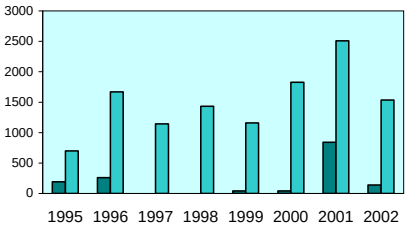


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**	**2001**	**2002**
West Bear Lake (78)	1884	3441	2760	2548	1790	1707	3150	1405
Soda Hills (72)	2754	4010	4145	3428	1826	2378	4576	2877
Bear Lake Plateau (76)	ND	ND	ND	ND	3427	3467	5106	2378
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**7043**	**7552**	**12832**	**6660**

Note: ND = no survey data available.

Harvest*



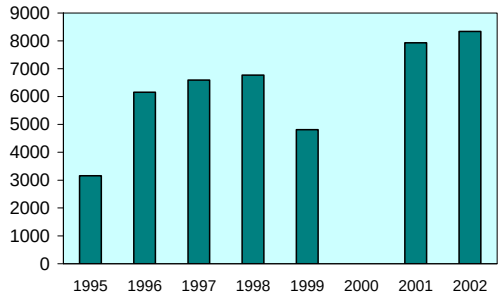
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	194	258	0	0	40	42	842	139
Antlered Harvest	698	1668	1143	1431	1160	1828	2506	1537
% 4+ Points	28	47	43	40	30	31	30	36
Hunter Numbers	3154	6155	6588	6767	4812	ND	7928	8338

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

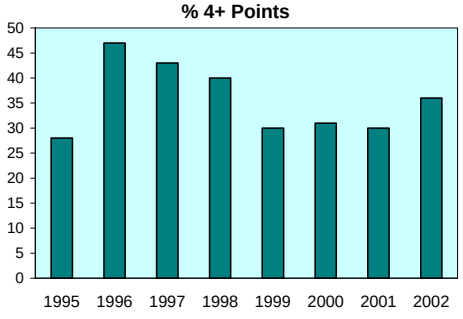


Figure 15. Mule Deer Analysis Area 22

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mule Deer Surveys and Inventories
PROJECT:	W-170-R-27		
SUBPROJECT:	6	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	2		

PERIOD COVERED: July 1, 2002 to June 30, 2003

UPPER SNAKE REGION

ANALYSIS AREA 16 (UNITS 60, 60A, 61, 62A)

Management Objectives

The management objectives for these units are to maintain a minimum of 15 bucks per 100 does in post-season surveys and to maintain at least 30% ≥4 points or larger bucks in the general season harvest. Additionally, general antlerless harvest opportunity will be encouraged when trend area populations exceed 1,500 deer. Attempts to reduce populations to a level more in balance with available winter range have met with very limited success to date. Conservative antlerless hunting opportunity in surrounding regions has limited management options. Controlled hunts have thus far reduced this population only slightly.

Historical Perspective

Since the early to mid-1980s, raw counts on the Sand Creek winter range (Unit 60A) indicate that deer populations have at least doubled, steadily increasing from just over 1,300 deer in 1984 to 3,000 or more in 1996, 1997, and 2000. This population has historically been very susceptible to hard winters. Populations have been built rapidly during periods without severe winter conditions only to crash with the next hard winter. Historically, these population reductions have occurred about every 4-6 years. The most recent winter that resulted in significant mortality was 2001-2002. Due to this, populations are down from the high levels of the late 1990s to an estimate of 1,492 deer in 2003.

Deer that winter on the Sand Creek winter range summer throughout Units 60, 61, and 62A, resulting in a low deer density. Consequently, hunting pressure in these units is low and dispersed. The only time that hunting pressure is significant on this population is when early snow forces deer down onto their high desert winter range during the general hunt.

Habitat Issues

The gentle topography lodgepole pine communities of the Island Park caldera and the moderate to steeply-sloped Centennial Mountain Range with lodgepole pine and Douglas-fir communities

dominate most of the deer summer range for this group of units. Most of this summer range occurs on lands administered by the USFS.

The Sand Creek winter range supports a vegetative complex typical of high desert shrub steppe dominated by sagebrush. Bitterbrush and chokecherry are prominent on areas of stabilized sand; Rocky Mountain juniper is locally abundant. Land ownership consists of a checkerboard of State, BLM, and private property. Cooperative use trade agreements have benefited big game populations on this winter range.

Biological Issues

Winter deer populations have been very high in Unit 60A. In the late 1990s, populations of 3,000 to 4,500 deer are the highest levels documented for this herd and are over double the antlerless harvest threshold of 1,500 total deer. The absence of a severe winter over nearly a decade during that time has undoubtedly contributed to this increase.

The Sand Creek trend area was flown in late March 2001. This green-up timed survey was a departure from historical counts that were conducted while deer were on winter range. The 2001 trend count resulted in an estimate of 1,332 deer, down from the 2,866 estimated the previous winter. It is believed that the 2001 estimate is not an accurate reflection of the status of this population, but is an artifact of the timing of this survey. Deer were already widely dispersed and a significant component of the population was undoubtedly not accounted for on this survey. Future surveys will be conducted earlier, when deer are still on winter range.

Both of the management objectives for this Analysis Area (minimum of 15 bucks per 100 does and at least 30% of the buck harvest being ≥4 points) were met for this reporting period. Composition counts resulted in an estimate of 21 bucks per 100 does and the percent ≥4 points in the buck harvest for 1998-2000 was 35.

Recruitment data for this trend area indicates the productive nature of this herd with fawn:doe ratios typically in the 80-90 ranges. The fawn:doe ratios for the 2003 survey resulted in an estimate of 92 fawns per 100 does.

Interspecific Issues

Although deer-elk interactions are not well understood, little evidence exists to support the notion of a negative relationship between mule deer, elk, and moose, as all three presently occur at historical high population levels in this group of units. White-tailed deer are found throughout most of the zone but are relatively uncommon.

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

Predation Issues

Black bear densities appear to be low and stable in this group of units. Mountain lions are extremely rare. Coyotes are common, especially on the Sand Creek Desert winter range. Wolves recently introduced in Yellowstone National Park may become established in this group of units, which could affect other predators and ungulates.

Winter Feeding Issues

No Department-sponsored feeding activities occur in this group of units except under emergency situations. However, social pressure to feed deer arises during any winter of average or greater severity.

Information Requirements

Survey protocol was revised beginning in 2000-2001. Future plans include the continuation of annual composition and trend surveys utilizing sightability methodology, as specified by the current Mule Deer Management Plan.

Mule Deer
Analysis Area 16 (Units 60, 60A, 61, 62A)

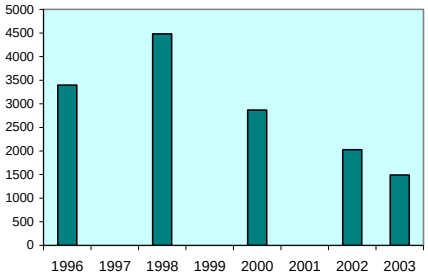
Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Sand Creek (60A)	2003	1492	1500
Total		**1492**	**1500**

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2003	21	15
%4+ Pts in the Harvest	2000-02	31	30

Population Change
Between Comparable Surveys

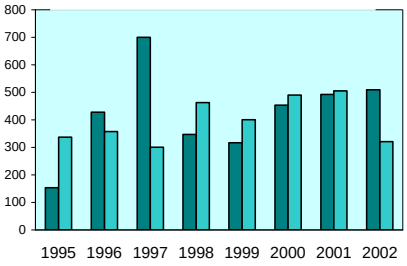


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
Sand Creek (60A)	3397	ND	4484	ND	2866	ND	2025	1492
Comparable Surveys Total	**3397**	**ND**	**4484**	**ND**	**2866**	**ND**	**2025**	**1492**

Note: ND = no survey data available.

Harvest*



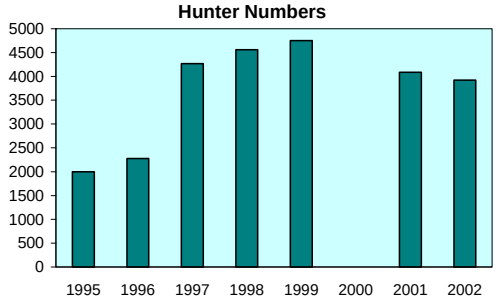
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	153	428	700	347	317	453	492	509
Antlered Harvest	337	357	301	463	401	490	505	321
% 4+ Points	58	56	35	38	43	36	27	30
Hunter Numbers	2000	2278	4267	4559	4748	ND	4086	3920

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

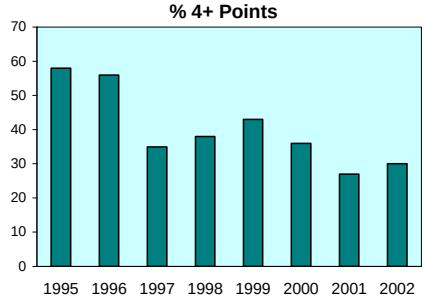


Figure 16. Mule Deer Analysis Area 16

ANALYSIS AREA 17 (UNITS 62, 65)

Management Objectives

The management objectives for these units are to maintain a minimum of 15 bucks per 100 does in post-season surveys, and to maintain a minimum of 30% 4-point or larger deer in the buck harvest. Additionally, general antlerless harvest will be encouraged when trend area sightability estimates exceed 400 deer. Maintaining this population at a level where it does not cause chronic depredations and subsequent spontaneous deer feeding by private citizens is an ongoing priority, particularly in Unit 65.

Historical Perspective

Old records of mule deer in this Analysis Area are sketchy and inconclusive; however, it is probable that they have always been present in unknown density. Early homesteaders reported that deer were scarce. Mule deer populations throughout the region increased in the 1940s and 1950s and remained high through the 1980s. Severe winters in 1988-1989 and 1992-1993 probably took much of the recruitment for those years. The population has since remained low, with the exception of one segment, which winters in the Teton River Canyon. The Teton River Canyon deer are primarily winter migrants from Wyoming and their population level is highly subject to the vagaries of winter severity, periodically suffering significant winter kill.

Habitat Issues

Summer habitat for Analysis Area 17 mule deer is relatively secure and capable of supporting far more animals than is the available winter range. In Unit 65, elevation and associated snow depths have always limited winter range. Additionally, what little winter range existed on private land is currently being developed into home-sites. The best winter range in Unit 62 was first inundated by the Teton Dam and then destroyed further by its failure. Some of the area has shown some slow recovery.

Biological Issues

Regional personnel believe that approximately half of the mule deer that winter in this Analysis Area spend spring, summer, and fall in Wyoming. This confounds management because the deer often do not enter Idaho until after normal hunting seasons. Keeping this population below a level where they cause depredations to ornamental shrubs in the winter or where people are providing them food requires cooperative management with Wyoming.

Mule deer in this Analysis Area are currently meeting all management objectives, including those required to allow general antlerless hunting. Management objectives for this Analysis Area are to maintain a minimum of 15 bucks per 100 does post-season and 30 percent ≥4 points in the buck harvest. A December composition survey resulted in an estimate of 38 bucks per 100 does and the percent ≥4 points in the buck harvest for 1998-2000 was 38.

A trend count was conducted in late March and early April 2001. This survey resulted in an estimate of 614 total deer relative to the 400 total deer antlerless harvest threshold. However, this estimate was down significantly from the 1,626 deer estimated the previous winter (2000). It is believed that the 2001 estimate is not an accurate reflection of the status of this population. It is likely that mild winter/early spring conditions resulted in either deer not coming all the way to the Teton River Canyon winter range or leaving early, prior to the trend survey.

Interspecific Issues

Mule deer share habitat in this Analysis Area with elk, moose, white-tailed deer, and high numbers of domestic livestock. Interspecific relationships are not monitored and are poorly understood. White-tailed deer have increased dramatically in the Teton Basin over the past 10-15 years and have undoubtedly replaced mule deer in riverine habitats. Elk have also increased over the same time period that mule deer have declined; however, there is no information to demonstrate this represents a cause and effect relationship.

Predation Issues

There are no known unique or unusual predator issues affecting mule deer populations in this Analysis Area.

Winter Feeding Issues

Authentic winter range is limited in this Analysis Area, particularly in Unit 65. The lowest spot in the unit is above 6,000 feet in elevation. The area has few steep south and west facing slopes. Consequently, winters can be harsh on mule deer and, since home-sites and ranches also occupy the winter range, calls to feed the deer are common and private efforts occur frequently. Feeding, either intentionally or incidentally to livestock operations, has produced a rapid growth in the area's white-tailed deer population. Discouraging the start of winter feeding operations in this area requires constant effort.

Information Requirements

Survey protocol was revised beginning in 2000-2001. Future plans include the continuation of annual composition and trend surveys utilizing sightability methodology, as specified by the current Mule Deer Management Plan.

Mule Deer
Analysis Area 17 (Units 62, 65)

Trend Area Status & Antlerless Harvest Threshold

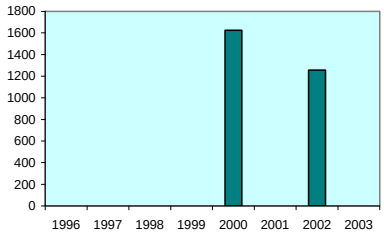
	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Teton River (62)	2002	1257	400
Total		**1257**	**400**

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2001	33	15
%4+ Pts in the Harvest	2000-02	36	30

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

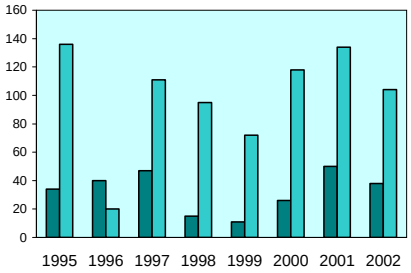


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
(62)	ND	ND	ND	ND	1626	ND	1257	ND
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**1626**	**ND**	**1257**	**ND**

Note: ND = no survey data available.

Harvest*



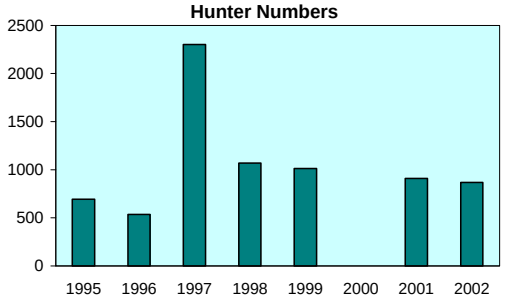
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	34	40	47	15	11	26	50	38
Antlered Harvest	136	20	111	95	72	118	134	104
% 4+ Points	25	50	32	70	35	34	32	41
Hunter Numbers	695	536	2302	1071	1013	ND	910	869

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

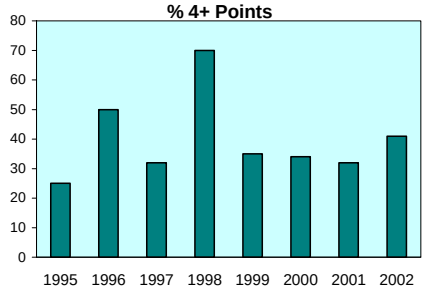


Figure 17. Mule Deer Analysis Area 17

ANALYSIS AREA 18 (UNITS 64, 67)

Management Objectives

The management objectives for these units are to maintain a minimum of 15 bucks per 100 does in post-season surveys, and to maintain a minimum of 30% 4-point and larger bucks in the general season harvest. Additionally, antlerless harvest will be encouraged when trend area sightability estimates exceed 1,500 deer. Maintaining this population at a level where it does not cause chronic depredations and require winter feeding, particularly in Swan Valley, is an ongoing priority.

Historical Perspective

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

Habitat Issues

Abundant spring, summer, and fall habitat exists in this zone. Winter range is limited and is more characteristic of mule deer habitat than elk habitat. Winter range has been lost to agriculture, and is currently threatened by proposed home-sites. Efforts are underway to inventory both occupied and potential winter range in the zone as part of a strategy to reduce the need for winter feeding. Opportunities to preserve or enhance winter range will be pursued. Winter range on slopes in the vicinity of the mouth of Rainey Creek appears to have suffered from years of overgrazing by elk and mule deer. The west slope of the Palisades Bench and the area between Table Rock Canyon and Kelly Canyon currently winter high concentrations of mule deer. Mature mountain mahogany stands throughout the zone may be providing only limited forage in addition to precluding all but a sparse understory of other species. Some bench areas in the Black Canyon to Wolverine Canyon stretch appear to be converting from a shrub-dominated to a grass-dominated community.

Biological Issues

Mule deer in this Analysis Area are currently meeting management objectives, including those required to allow general antlerless harvest. Populations were at or near all time highs prior to the severe 1988-1989 and 1992-1993 winters. Following a decline of unmeasured magnitude, they have recently recovered to at or above long-term average levels. Distribution has changed, particularly at Rainey Creek, where it was common to feed up to 500 deer through the 1987-

1988 winter. Recently, there have been fewer than 200 fed at this location. Strategies designed to increase wintering elk in some parts of the area to offset elimination of the Rainey Creek feed site will need to be carefully monitored to protect existing mule deer populations. Snowmobile activity may be precluding the use of traditional winter range in Canyon Creek.

Management objectives for this Analysis Area are to maintain a minimum of 15 buck per 100 does post-season and 30 percent ≥4 points in the buck harvest. A 2003 composition survey resulted in an estimate of 21 bucks per 100 does. The percent ≥4 points in the buck harvest for 1999-2001 was 41. A trend count in 2002 resulted in an estimate of 2,252 total deer, which did not meet the antlerless harvest threshold of 3,800 total deer.

Interspecific Issues

In addition to mule deer, this Analysis Area supports a large elk population and numerous moose. Domestic livestock extensively grazes portions of it. Interspecific relationships are not monitored and are poorly understood. If the elk population is not carefully managed, conflicts with deer on winter range could develop.

Predation Issues

There are no known unique or unusual predator issues affecting mule deer populations in this Analysis Area.

Winter Feeding Issues

Mule deer have been fed during severe winters on an emergency basis below the Palisades Bench, near Heise, and in Canyon Creek. They have been fed on a regular basis at the mouth of Rainey Creek along with elk. Plans to eliminate feeding of elk at that site will remove the site's strong attraction to deer and should result in the end of deer feeding as well. With the new and planned homesite developments occurring in Swan Valley will come new residents tempted to bait or feed deer and elk. All such efforts will be discouraged.

Information Requirements

Survey protocol was revised beginning in 2000-2001. Future plans include the continuation of annual composition and trend surveys utilizing sightability methodology, as specified by the current Mule Deer Management Plan.

Mule Deer
Analysis Area 18 (Units 64, 67)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Heise (67)	2002	2252	1500
Total		**2252**	**1500**

Buck Status & Minimum Criterion

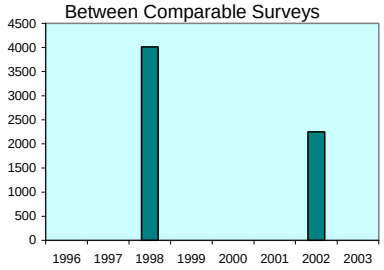
	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2003	21	15
%4+ Pts in the Harvest	2000-02	45	30

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
Heise (67)	ND	ND	4014	ND	ND	ND	2252	ND
Comparable Surveys Total	**ND**	**ND**	**4014**	**ND**	**ND**	**ND**	**2252**	**ND**

Note: ND = no survey data available.

Population Change
Between Comparable Surveys

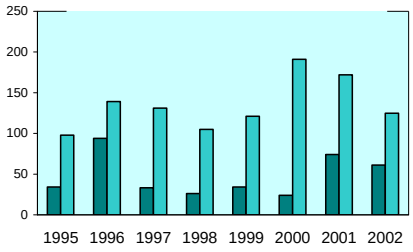


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	34	94	33	26	34	24	74	61
Antlered Harvest	98	139	131	105	121	191	172	125
% 4+ Points	47	56	19	28	42	40	40	56
Hunter Numbers	856	1354	1666	1377	1165	ND	1430	1489

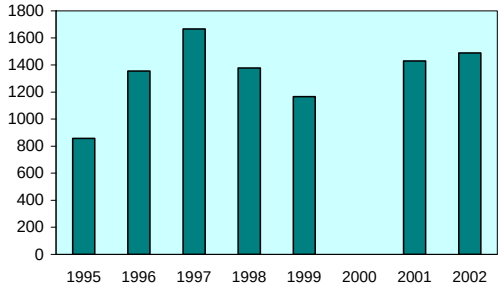
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

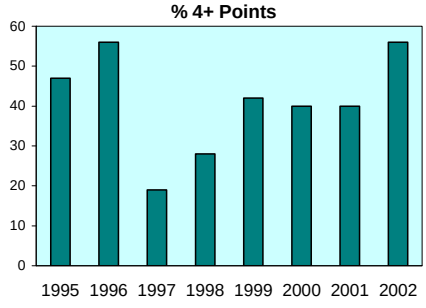


Figure 18. Mule Deer Analysis Area 18

ANALYSIS AREA 19 (UNITS 66, 66A, 69)

Management Objectives

The management objectives for these units are to maintain a minimum of 15 bucks per 100 does in post-season surveys, and to maintain a minimum of 30% 4-point and larger bucks in the general season harvest. Additionally, general antlerless harvest will be encouraged when trend area sightability estimates exceed 3,000 deer.

Historical Perspective

Osborne Russell (1848) did not mention mule deer in this area in the 1840s. Since he liked to hunt deer and noted the presence of other big game in the general area, it is likely deer were not common. Early homesteaders reported that deer were scarce. Mule deer apparently increased during the 1940s and 1950s, perhaps in response to overgrazing by domestic livestock, which encourages shrubs over grasses. Deer numbers peaked during the late 1960s and then declined dramatically. They peaked again during the late 1980s and early 1990s, then declined again following a severe winter in 1992-1993. Recently, the population has recovered to the level of the long-term average. Hunting seasons over the years have been adjusted in an attempt to respond to obvious fluctuations in the population. Units 66 and 69 have supported one of the longest running late-season controlled buck hunts in the state. Permits for this hunt have extremely high appeal.

Habitat Issues

Habitat throughout Analysis Area 19 is or has the potential to be highly productive. The fertile, mineral rich soils of the area produce diverse plant communities including sagebrush-grasslands, extensive aspen patches, and cool moist conifer stands primarily on north and east facing slopes. Terrain is generally mild and much of the private land of the area is dry farmed with cereal grains. Over half of the zone is private land with the balance of public lands administered by the USFS, BLM, IDL, and the Department. Approximately 250 square miles of the southwest corner of the area is Fort Hall Indian Reservation land. A significant portion of the private land is CRP enrolled and is contributing substantially to the area's carrying capacity during all seasons. The Tex Creek WMA, partially owned and totally managed by the Department, provides 30,000 acres of prime winter habitat for mule deer, elk, and moose in the zone. This land was purchased to mitigate for habitat inundated or destroyed by Ririe, Palisades, and Teton Dams.

Biological Issues

The management objective for bucks in the harvest in this Analysis Area (at least 30% of the buck harvest being ≥4 points) was met. The percent ≥4 points in the buck harvest for 1999-2001 was 44. The management objective for buck:doe ratios in this Analysis Area (minimum of 15 bucks per 100 does post-season) was not met for this reporting period. Composition counts resulted in an estimate of 14 bucks per 100 does. This count may not accurately represent the

population due to a very mild winter in which many bucks may not have moved onto traditional winter ranges.

A trend count was flown in late 2003. This survey resulted in an estimate of 2,475 total deer, which is below the 3,340 estimated on the 1999 survey and the antlerless harvest threshold of 3,000. It is possible that the 2003 estimate is not an accurate reflection of the status of this population. It is likely that the mild winter/early spring conditions resulted in either deer not coming all the way to the surveyed winter range or leaving early, prior to the trend survey in March.

Mule deer populations were at a historical high in this Analysis Area when surveyed in February 1991. The winter of 1992-1993 was severe and significant mortality occurred, especially to fawns. The population rebounded rapidly to long-term average levels, but has not approached the extreme highs of the late 1980s and early 1990s. If the current series of mild winters continues, this highly productive population should respond positively.

Interspecific Issues

In addition to mule deer, this Analysis Area supports a large elk population and numerous moose. Domestic livestock extensively grazes portions of it. Interspecific relationships are not monitored and are poorly understood. If the elk population is not kept in check, conflicts with deer on winter range could develop. Currently, agricultural practices, particularly management of CRP lands, are of greater concern than are potential interspecific conflicts.

Predation Issues

There are no known unique or unusual predator issues affecting mule deer populations in this Analysis Area.

Winter Feeding Issues

Mule deer have not been fed in this Analysis Area. Feeding should be discouraged in all but extreme emergency conditions.

Information Requirements

Sightability surveys and harvest reports are needed to monitor status of the population relative to objectives. A comprehensive inventory of winter range quality and quantity, including the status and terms of enrollment of CRP lands, would be valuable for long-range planning and management. CRP is particularly important because such a large percentage of this Analysis Area is privately owned. A large-scale conversion from CRP back to cultivated crops could result in significant depredation problems by both mule deer and elk under current population objectives for both species.

LITERATURE CITED

Russell, O. 1848. Journal of a Trapper. Syms-York, Boise, Idaho.

Mule Deer
Analysis Area 19 (Units 66, 66A, 69)

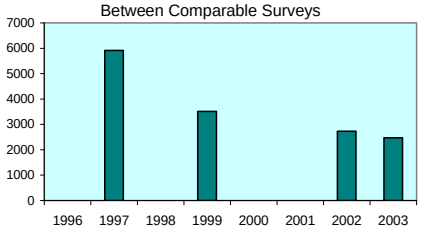
Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Tex Creek (69)	2003	2475	3000
Total		**2475**	**3000**

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2003	15	15
%4+ Pts in the Harvest	2000-02	39	30

Population Change
Between Comparable Surveys

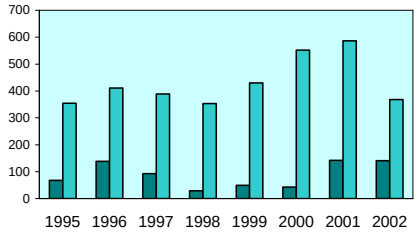


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
Tex Creek (69)	ND	5914	ND	3508	ND	ND	2730	2475
Comparable Surveys Total	**ND**	**5914**	**ND**	**3508**	**ND**	**ND**	**2730**	**2475**

Note: ND = no survey data available, estimates within parenthesis are based on information other than sightability surveys.

Harvest*



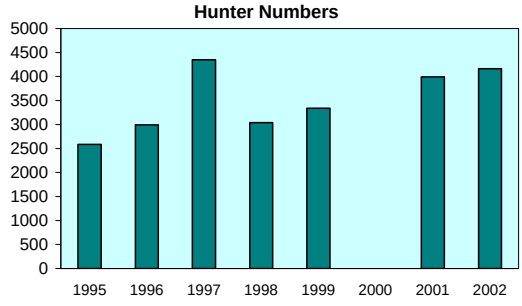
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	68	139	93	29	49	43	142	141
Antlered Harvest	355	411	389	353	430	552	586	368
% 4+ Points	56	63	56	48	52	42	37	39
Hunter Numbers	2585	2992	4351	3038	3340	ND	3994	4163

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

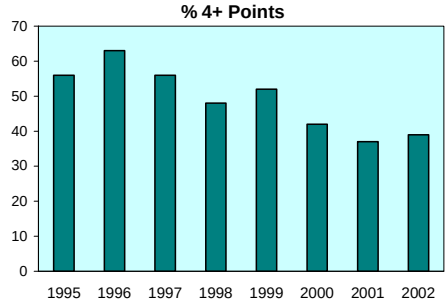


Figure 19. Mule Deer Analysis Area 19

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mule Deer Surveys and Inventories
PROJECT:	W-170-R-27		
SUBPROJECT:	7	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	2		

PERIOD COVERED: July 1, 2002 to June 30, 2003

SALMON REGION

ANALYSIS AREA 4 (UNITS 16A, 17, 19, 19A, 20, 20A, 25, 26, 27)

Management Objectives

Objectives for these units are to maintain a minimum of 25 bucks per 100 does in post-season surveys and 50% ≥4-point bucks in the harvest. When estimated deer numbers exceed 2,700 in the Unit 27 trend area, antlerless seasons will be considered.

Historical Perspective

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

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

Ultimately, the shrub winter ranges could not be sustained. More controlled livestock grazing and fire suppression allowed grasses and conifers to out-compete shrub seedlings; shrub ranges began to revert to grasslands and forests. As the habitat went, so went the deer; long-term trend

counts in Unit 27 show a steady decline in deer numbers from the 1920s to the mid-1960s. Since that time, the trend in deer numbers and harvest has been relatively flat. For example, 2,900 deer were counted during a 1968 helicopter deer survey of Unit 27. During a 1995 helicopter elk survey of the same area, 2,100 deer were observed incidental to elk counts.

Habitat Issues

Habitat ultimately determines deer densities and productivity. In these units where hunter harvest historically has been light, particularly for females, deer herds could be expected to exist much of the time at densities approaching carrying capacity (unless suppressed by predators or temporarily set back by severe winters). Deer herds at or near carrying capacity can be expected to be relatively unproductive, recruiting few fawns, thus few bucks, into the population, and these herds can be expected to produce bucks with small antlers. Unit 27 does produce relatively small-antlered bucks for their age, but this has not been definitively tied to deer densities or habitat. Continued shrubland deterioration, conifer encroachment, and booming elk populations will probably continue to further erode habitat capacity for deer. Fire may enhance summer ranges and winter ranges in the more moist northern units, but fire is not likely to benefit the more arid southern winter ranges. Already established in some areas, the spread of noxious weeds such as knapweed, rush skeletonweed, and leafy spurge could ultimately have significant impacts on winter range productivity.

Biological Issues

Very little mule deer aerial survey data has been collected in these units since the 1960s. What data has been collected suggests a fairly stable number of deer since that time. For example, a 1965 helicopter trend count in Unit 27 resulted in a tally of 1,963 deer. The same area flown in 1968 resulted in 2,929 deer observed, while 2,133 deer were counted incidental to elk surveys in 1995. Buck harvests since the mid-1970s in Unit 27 are variable, but indicate no definite upward or downward trend. Similarly, there is no evident trend in percent 4-point bucks in the harvest, which varies annually, but averages approximately 55%. However, in recent years, backcountry outfitters have suggested that total deer numbers and mature buck numbers may have declined.

Interspecific Issues

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

Predation Issues

Black bear densities appear to be low to moderate in the southern units and increasing towards the north. Mountain lion densities are at least moderate, perhaps high, and appear to have increased in recent years, probably at least in part due to increased elk densities. Coyotes are

common and have an unknown impact on deer populations. Bobcats and golden eagles are present, but are not thought to cause significant predation on deer. Wolves reintroduced by the USFWS have become well established in these units. The addition of wolves will likely have an impact on black bear, mountain lion, and coyote populations. At some level, predation could benefit deer herds to the extent that it reduces elk competition and keeps deer herds below carrying capacity, where they can be more productive. However, excessive levels of predation can also suppress prey populations to undesirably low levels. At this point, it is unclear what the net impact of predation will be with the new mix of large predators.

Winter Feeding Issues

Winter feeding has not occurred in these remote big game units.

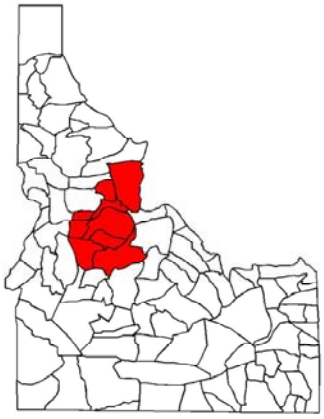
Information Requirements

Survey data on mule deer herd sex and age composition and trends in deer numbers are inadequate. Impacts of elk on mule deer production and survival are suspected but unknown. The most productive deer herds are those maintained at a level well below carrying capacity. Better information is needed to identify appropriate deer densities that will maintain optimum productivity and harvest. The potential impact of the new mix of large predators is unknown. Migratory patterns are largely unknown.

Mule Deer
Analysis Area 4 (Units 16A, 17, 19, 19A, 20, 20A, 25, 26, 27)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Middle Fork (27)	2003	2785	2700
Total		**2785**	**2700**



Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2003	23	25
%4+ Pts in the Harvest	1999-01	56	50

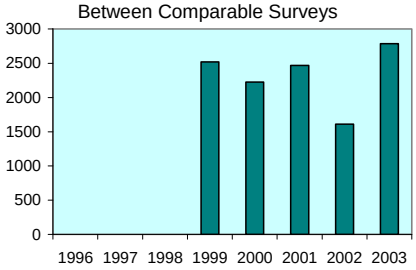
Note: ND = no survey data available.

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
Middle Fork (27)	ND	ND	ND	2519	2225	2468	1610	2785
Comparable Surveys Total	**ND**	**ND**	**ND**	**2519**	**2225**	**2468**	**1610**	**2785**

Note: ND = no survey data available, estimates within parenthesis are based on information other than sightability surveys.

Population Change
Between Comparable Surveys

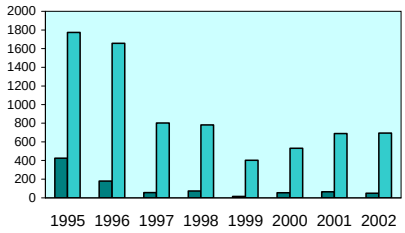


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	425	179	55	72	14	54	65	50
Antlered Harvest	1772	1658	803	782	402	530	689	693
% 4+ Points	53	62	47	64	55	58	55	61
Hunter Numbers	12001	7228	4287	5661	3424	ND	3555	4007

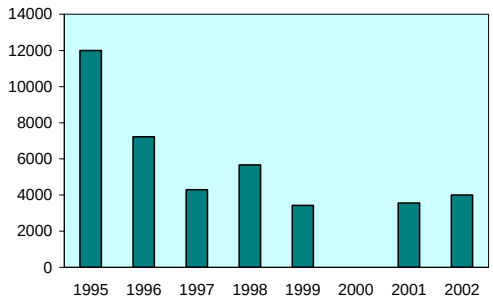
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.
Hunter numbers include all deer hunters.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

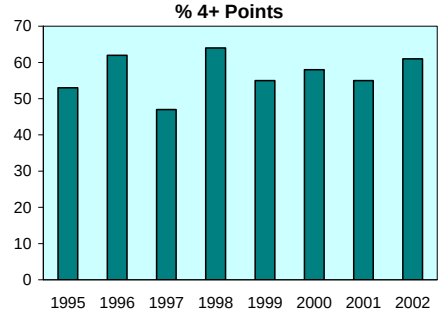


Figure 20. Mule Deer Analysis Area 4

ANALYSIS AREA 5 (UNITS 21, 21A, 28, 36B)

Management Objectives

Objectives for this zone are to maintain a minimum of 15 bucks per 100 does in post-season surveys and 30% ≥4-point bucks in the harvest. When estimated deer numbers exceed 1,800 in the North Fork trend area and 2,500 in the Challis trend area, antlerless seasons will be considered.

Historical Perspective

Mule deer were scarce and harvest low for much of the early part of the 20th century. From 1917 until the 1940s, parts of Units 28 and 36B were designated as no hunting "game preserves." By the early 1940s, deer herds had expanded to the point that long either-sex seasons were being offered (early October to mid-November). This pattern continued into the 1970s, when the antlerless portion of the season began to be shortened and the total season length was shortened to include mid-October to mid-November. In 1991, concerns for mature buck escapement led to shifting the deer season earlier so that it ended in October before the rut began. Since 1991, the deer season framework has been the most conservative these units have seen in at least 50 years.

Approximately 4,000-5,000 people have participated in rifle hunts in Analysis Area 5 in recent years, harvesting 550-1,600 bucks annually. Antlerless deer harvest was eliminated in 1998 and buck harvest declined in subsequent years. This decline may be attributable to increased competition between does and bucks for limited forage resources and/or decreases in hunter numbers.

Habitat Issues

Cattle ranching, livestock grazing, mining, timber harvest, and recreation are dominant human uses of the landscape in Analysis Area 5. Deer depredations on agricultural crops are minor. Intrusion of human development into winter ranges is accelerating.

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

Biological Issues

A trend area in Unit 21 near North Fork has been flown annually since December 1990 and a similar trend area has been flown in Unit 36B south of Challis since December 1994. However, the value of these surveys as indicators of total deer numbers is questionable; strong variations, including biological impossibilities, occur from one year to the next. These flights do provide insights into herd productivity and sex/age structure. Fawn production is typically moderate, averaging 64 fawns per 100 does in early winter. Buck:doe ratios in Unit 21 made modest gains after the 1991 season change, but they have since stabilized at 15-18 bucks per 100 does. Buck:doe ratios historically were higher in Unit 36B; generally closer to 20 bucks per 100 does. However, since 1998, buck ratios have fallen below management objectives, averaging approximately 11 bucks per 100 does.

Interspecific Issues

Area 5 contains the majority of the most productive deer units in the Salmon Region; parts of Units 21, 21A, and 36B contain high densities of wintering deer. Current high elk densities may be having some impact on the area's capacity to produce deer. This impact may be particularly pronounced during severe winters when deep snow moves elk down onto deer winter ranges. White-tailed deer, a potentially strong competitor, are mostly restricted to private lands along major riparian areas between Salmon and Gibbonsville. Pronghorn antelope, bighorn sheep, and mountain goat share some ranges, but generally overlap little with mule deer. Livestock rangeland grazing, another potential source of competition, has generally been reduced in recent years.

Predation Issues

Black bear densities appear to be moderate in Analysis Area 5. Mountain lion densities are at least moderate, perhaps high in some areas, and appear to have increased in recent years, probably at least in part due to increased elk densities. Coyotes are common and have an unknown impact on deer populations. Bobcats, red fox, and golden eagles also occur in the area but are not thought to account for significant predation on deer. Two packs of wolves reintroduced by the USFWS have become established in Unit 28. Wolves also occasionally frequent the other units in Analysis Area 5, and one pack may be established in Unit 21. The addition of wolves will likely have an impact on black bear, mountain lion, and coyote populations. At some level, predation could benefit deer herds to the extent that it reduces elk competition and keeps deer herds below habitat carrying capacity, where they can be more productive. However, excessive levels of predation can also suppress prey populations to undesirably low levels. At this point, it is unclear what the net impact of predation will be with the new mix of large predators.

Winter Feeding Issues

Limited amounts of deer feeding occurred about once per decade in the North Fork area. Minor private feeding activities also occur from time to time.

Information Requirements

Although surveys have been conducted since 1990 in Unit 21 and 1994 in Unit 36B, long-term survey data on mule deer herd sex and age composition and trends in deer numbers are inadequate. Impacts of elk on mule deer production and survival are suspected but unknown. The most productive deer herds are those maintained at a level well below carrying capacity. Better information is needed to identify appropriate deer densities that will maintain optimum productivity and harvest. Migratory patterns are largely unknown. Potential impact of the new mix of large predators is unknown.

Mule Deer
Analysis Area 5 (Units 21, 21A, 28, 36B)

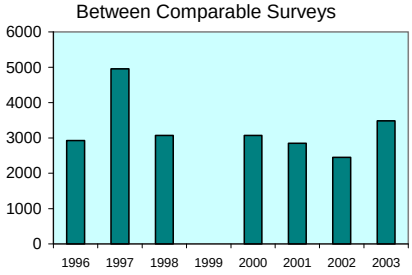
Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
North Fork (21)	2003	1273	1800
Challis (36B)	2003	2210	2500
Total		**3483**	**4300**

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2003	15	15
%4+ Pts in the Harvest	1999-01	28	30

Population Change
Between Comparable Surveys

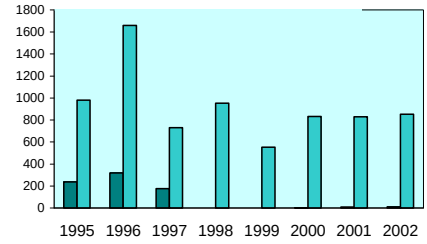


Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
North Fork (21)	1129	2027	1226	ND	1104	1284	459	1273
Challis (36B)	1796	2926	1840	2163	1963	1568	1993	2210
Comparable Surveys Total	**2925**	**4953**	**3066**	**ND**	**3067**	**2852**	**2452**	**3483**

Note: ND = no survey data available.

Harvest*



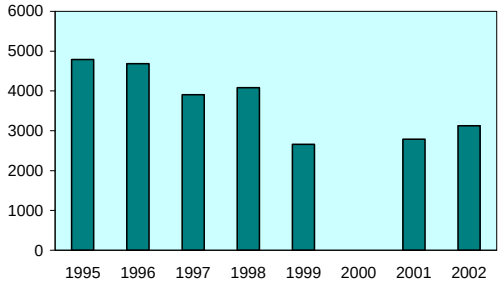
Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	238	319	176	0	0	1	8	10
Antlered Harvest	981	1660	730	952	553	832	830	852
% 4+ Points	38	41	35	27	28	34	23	30
Hunter Numbers	4788	4684	3907	4082	2660	ND	2786	3127

Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

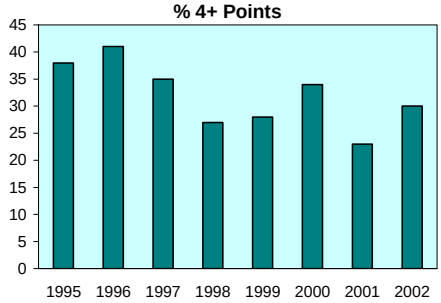


Figure 21. Mule Deer Analysis Area 5

ANALYSIS AREA 9 (UNITS 29, 37, 37A, 51)

Management Objectives

Objectives for these units are to maintain a minimum of 15 bucks per 100 does in post-season surveys and 30% ≥4-point bucks in the harvest. When estimated deer numbers exceed 1,300 in the Unit 51/58W trend area and 1,000 in the Unit 29 trend area, antlerless seasons will be considered.

Historical Perspective

Mule deer were scarce and harvests low for much of the early part of the 20th century. By mid-century mule deer had become the predominant big game animal. Once known for productive mule deer populations, particularly in the Pahsimeroi and Little Lost valleys, these units yielded very large mule deer harvests in the 1950s and 1960s. By the 1970s, harvests had dropped by two-thirds as more conservative management strategies were implemented. Despite two decades of very conservative antlerless harvest and increasingly conservative buck seasons, mule deer populations have failed to return to their previous high densities and are stable to declining. Although deer herds declined well before any significant increase in elk numbers, current high elk densities may be contributing to suppressed deer populations.

Habitat Issues

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

Habitat ultimately determines deer densities and productivity. However, specific limiting factors within the habitat are poorly understood. In some areas, deer winter in mature stands of mountain mahogany that appear relatively stagnant and unproductive. Winter range shrub stands in parts of the Little Lost Valley have been lost or degraded. Elk and livestock may have removed much of the mountain mahogany forage within reach of deer. Forests are slowly encroaching into shrub and grassland communities. Spread of noxious weeds such as knapweed and leafy spurge could ultimately have significant impacts on winter range productivity.

Biological Issues

Very little aerial survey data has been collected in these units in recent years. There is a contrast in harvest trends within this group of units. Buck harvest in the southern unit (51) averaged 184 from 1981-1985, then increased 80% to average 331 during 1986-1990, then dropped back to 211 during 1991-1995 and 178 during 1996-2000. In contrast, buck harvest in the northern units (29, 37, 37A) averaged 618 during 1981-1985, then increased only 6% to 653 during

1986-1990, and then declined to an average 412 bucks during 1991-1995 and 309 bucks during 1996-2000.

Interspecific Issues

Current high elk densities may be having some impact on the area's capacity to produce deer. White-tailed deer, a potentially strong competitor, are mostly restricted to private agricultural lands along major riparian areas. In some limited areas, mountain goats and mule deer may be competing for the same mountain mahogany winter ranges. Pronghorn antelope and bighorn sheep also share the range, but generally overlap little with mule deer. Livestock rangeland grazing, another potential source of competition, has generally been reduced in recent years, but some competition probably still exists, particularly in the moister summer range habitats.

Predation Issues

Black bear densities appear to be low and stable. Mountain lion densities are low to moderate and appear to have increased in Units 29, 37, and 37A in recent years, probably at least in part due to increased elk densities. Coyotes are common and have an unknown impact on deer populations. Bobcats, red fox, and golden eagles also occur in the area but are not thought to account for significant predation on deer. Wolves were observed in parts of the Analysis Area, but appeared to be primarily transient.

Winter Feeding Issues

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

Information Requirements

Survey data on mule deer herd sex and age composition and trends in deer numbers have not been consistently collected in the past and are inadequate. Impacts of elk on mule deer production and survival are suspected but unknown. The most productive deer herds are those maintained at a level well below carrying capacity. Better information is needed to identify appropriate deer densities that will maintain optimum productivity and harvest. Migratory patterns are largely unknown.

Mule Deer
Analysis Area 9 (Units 29, 37, 37A, 51)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Tendoy (29)	2003	885	1000
Total		**885**	**1000**

Buck Status & Minimum Criterion

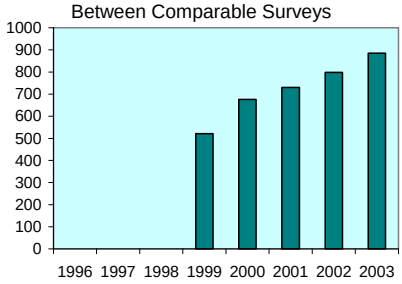
	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2003	13	15
%4+ Pts in the Harvest	1999-01	32	30

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
Tendoy (29)	ND	ND	(592)	521	676	730	798	885
Comparable Surveys Total	**ND**	**ND**	**(592)**	**521**	**676**	**730**	**798**	**885**

Note: ND = no survey data available, estimates within parenthesis are based on information other than sightability surveys.

Population Change
Between Comparable Surveys

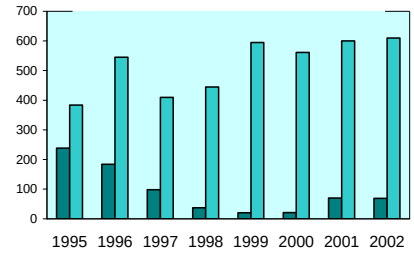


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	238	184	98	37	20	21	70	69
Antlered Harvest	384	545	410	445	595	561	600	610
% 4+ Points	17	42	46	38	29	36	30	31
Hunter Numbers	2058	2451	2156	2299	2567	ND	2810	3172

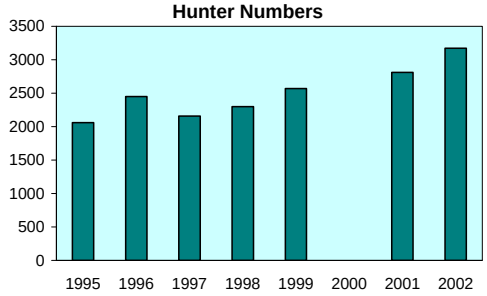
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

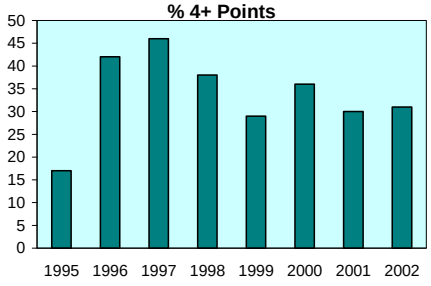


Figure 22. Mule Deer Analysis Area 9

ANALYSIS AREA 10 (UNITS 30, 30A, 58, 59, 59A)

Management Objectives

The objectives for these units are to maintain a minimum of 15 bucks per 100 does in post-season surveys and to maintain at least 30% four-point bucks in the harvest. When estimated deer numbers exceed 1,400 in the Unit 58/59A trend area and 1,200 in the Unit 30/30A trend area, general antlerless seasons will be considered.

Historical Perspective

Mule deer were scarce and harvests low for much of the early part of the 20th century. Parts of some units were designated as no hunting "game preserves." By mid-century, mule deer had become the predominant big game animal. These units produced high mule deer harvests in the 1950s and 1960s. By the 1970s, harvests had dropped by one-half as more conservative management strategies were implemented. Despite two decades of very conservative antlerless harvests and increasingly conservative buck seasons, mule deer harvests have remained relatively stable since the early 1970s in Units 30 and 30A and since the early 1980s in Units 58, 59, and 59A. Although deer herds declined well before any significant increase in elk numbers, current high elk densities may well be helping to suppress deer populations in Units 30 and 30A. Further south in Units 58, 59, and 59A where elk densities have also increased substantially, trend counts suggest that deer populations are now at or slightly above late 1960s levels.

Many of these deer, particularly in the Lemhi Valley, migrate to higher quality summer ranges in Montana, returning to Idaho winter ranges in November.

Habitat Issues

The BLM or USFS administers much of the land in these units, with private lands mostly restricted to the valley bottoms. Cattle ranching, livestock grazing, and recreation are the dominant human uses of the landscape in these units. This is in a generally arid region where forage production and deer harvest can be strongly influenced by growing season precipitation. Deer depredations on agricultural crops are common and are especially pronounced in dry years in Units 30 and 30A, but have not been a problem in Units 58, 59, and 59A.

Habitat ultimately determines deer densities and productivity. However, specific limiting factors within the habitat are poorly understood. In some areas, deer winter in mature stands of mountain mahogany which appear to have become relatively stagnant and unproductive. Elk and livestock may have removed much of the mahogany canopy within reach of deer. Forests are slowly encroaching into shrub and grassland communities. The spread of noxious weeds such as knapweed and leafy spurge could ultimately have significant impacts on winter range productivity.

Traditionally, deer in Units 58, 59, and 59A concentrate on winter ranges at the south end of the Beaverhead Range. Heavy snows in the late 1960s placed tremendous pressure on very narrow portions of these units, killing many browse plants. Winter range habitat condition is still poor to

fair for may of the bitterbrush and mountain mahogany stands important to wintering deer. Mountain mahogany, the primary winter browse species, is still heavily hedged with little regeneration. Winter domestic sheep grazing is contributing to this overuse.

Biological Issues

This Analysis Area contains two trend areas: Leadore (Units 30/30A) in the Salmon Region and Reno Point (Units 58/59A) in the Upper Snake Region. Total deer estimated in 2003 for both areas combined (2,563) came very close to the antlerless harvest threshold of 2,600.

However, neither of the two management objectives (minimum of 15 bucks per 100 does post-season and at least 30% of the buck harvest being ≥4 point) was met. Composition counts resulted in an estimate of 11 bucks per 100 does and the percent ≥4 points in the buck harvest for 1998-2000 was 26.

Consequently, the Salmon Region units will maintain a 5-22 October general season open for antlered deer only in 2001. The general season for Units 58, 59, and 59A in the Upper Snake Region will run from 5-19 October for antlered deer only and the controlled either sex hunt was eliminated for 2001.

Interspecific Issues

Current high elk densities in Units 30 and 30A may be having some impact on the area's capacity to produce deer. However, this is not believed to be a problem in Units 58, 59, and 59A because deer and elk appear to use different winter and summer ranges. It should be noted, however, that deer-elk interactions are not well understood. White-tailed deer, a potentially strong competitor, are mostly restricted to private agricultural lands along the major riparian areas. In some limited areas, mountain goats and mule deer may be competing for the same mountain mahogany winter ranges. Antelope and bighorn sheep also share the range but generally overlap little with mule deer. Livestock rangeland grazing, another potential source of competition, has generally been reduced in recent years, but is still a concern on the southern winter ranges.

Predation Issues

Black bear densities appear to be low and stable. Mountain lion densities are low to moderate and appear to have increased in recent years in Units 30 and 30A, probably at least in part due to increased elk densities. Coyotes are common and have an unknown impact on deer populations. Bobcats, red fox, and golden eagles also occur in the area but are not thought to cause significant predation on deer.

Winter Feeding Issues

Winter feeding has not occurred in these units in the past few years.

Information Requirements

Survey data on mule deer herd sex and age composition and trends in deer numbers have been inadequate in this Analysis Area but are improving. Impacts of elk on mule deer production and survival are suspected but unknown. The most productive deer herds are those maintained at a level well below carrying capacity (at which point recruitment equals mortality and there is no harvestable surplus). Better information is needed to identify the appropriate deer densities to maintain optimum productivity and harvest. Although strong interstate movements have been suspected, very little information exists on migration patterns. The Reno Point trend area was included in the Upper Snake Region's fawn mortality work starting in 2000-2001. Telemetry results will provide information on movement patterns of deer from this winter range.

Mule Deer
Analysis Area 10 (Units 30, 30A, 58, 59, 59A)

Trend Area Status & Antlerless Harvest Threshold

	Current Status		Antlerless Harvest
Trend Area (Unit)	Survey Year	Total Deer	Threshold Total Deer
Reno Gulch (58/59A)	2003	1407	1400
Leadore (30/30A)	2003	1156	1200
Total		**2563**	**2600**

Buck Status & Minimum Criterion

	Survey Year(s)	Current Status	Minimum Criterion
Buck:Doe Ratio	2003	12	15
%4+ Pts in the Harvest	2000-02	25	30

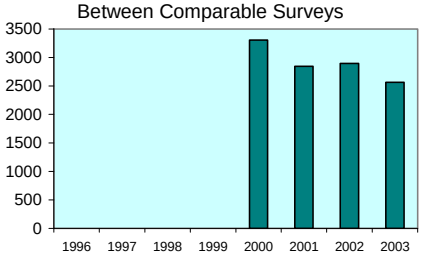
Leadore: Buck:Doe Ratio=12, 28 bucks:255 does
Reno Gulch: Buck:Doe Ratio=9, 55 bucks:612 does
Combined Buck:Doe Ratio=10 bucks: 100 does

Trend Area Surveys

	Deer Numbers							
Trend Area (Unit)	1996	1997	1998	1999	2000	2001	2002	2003
Reno Point (58/59A)	ND	ND	ND	ND	1514	1391	1900	1407
Leadore (30/30A)	ND	(910)	ND	1411	1792	1453	996	1156
Comparable Surveys Total	**ND**	**ND**	**ND**	**ND**	**3306**	**2844**	**2896**	**2563**

Note: ND = no survey data available, estimates within parenthesis are based on information other than sightability surveys.

Population Change
Between Comparable Surveys

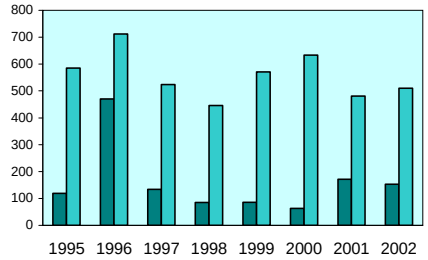


Analysis Area Harvest Statistics

	1995	1996	1997	1998	1999	2000	2001	2002
Antlerless Harvest	119	470	134	85	86	63	171	153
Antlered Harvest	585	712	524	446	571	633	481	510
% 4+ Points	43	35	23	25	18	27	24	24
Hunter Numbers	2284	2719	2928	2328	2423	ND	2171	2560

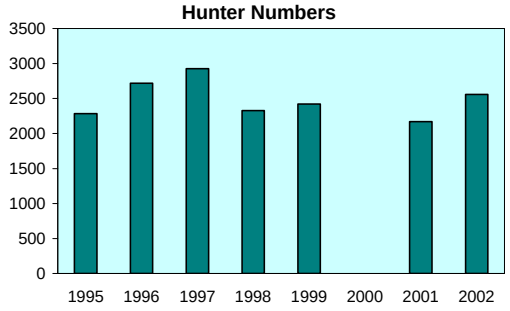
Note: Telephone survey harvest data prior to 1998 does not include general primitive weapons season data.

Harvest*



* Note: Harvest prior to 1998 does not include general primitive weapons season data.

Hunter Numbers



% 4+ Points

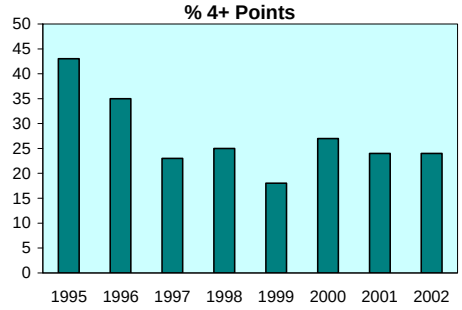


Figure 23. Mule Deer Analysis Area 10

Submitted by:

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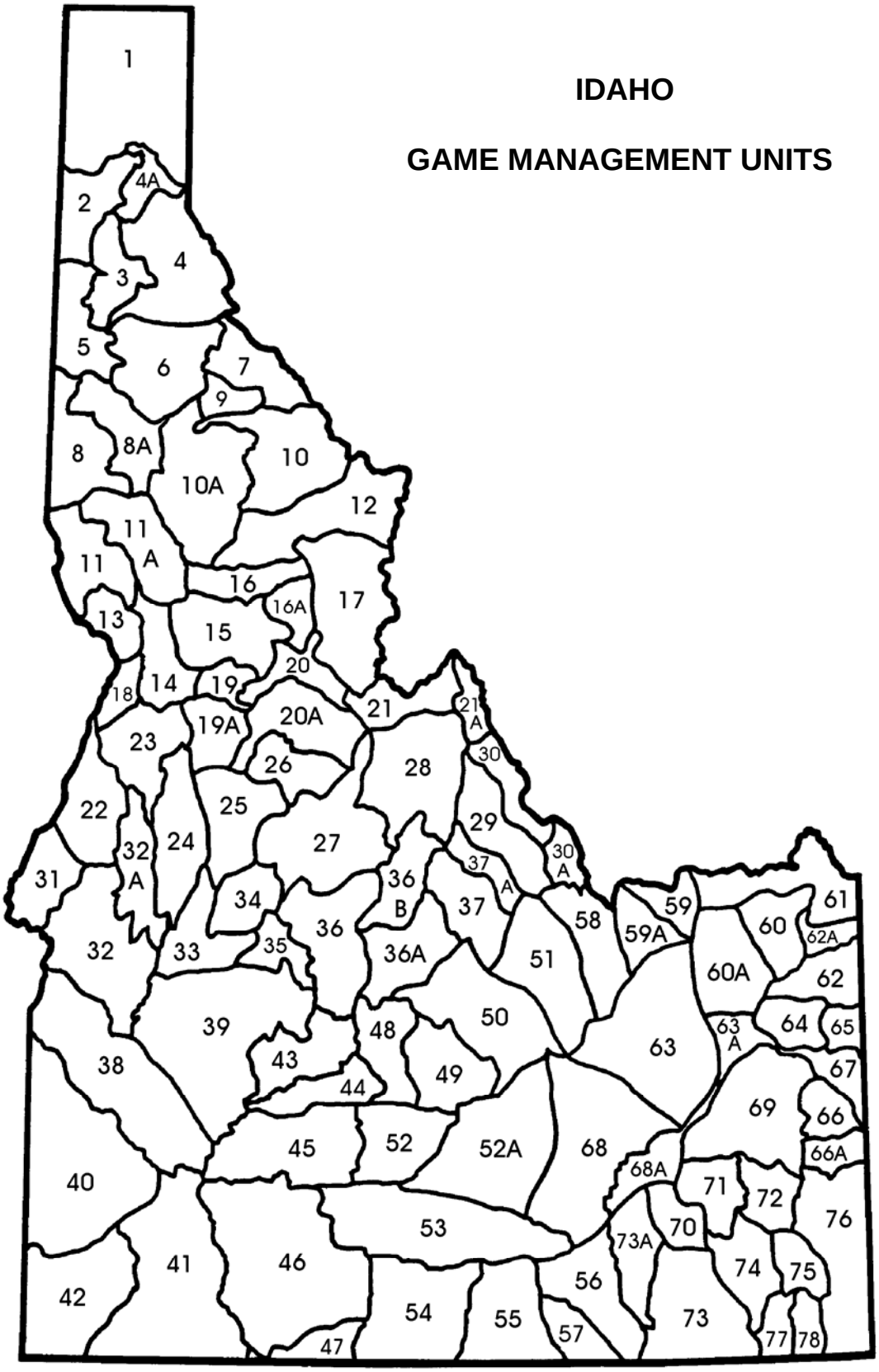
IDAHO

GAME MANAGEMENT UNITS



FEDERAL AID IN WILDLIFE RESTORATION

The Federal Aid in Wildlife Restoration Program consists of funds from a 10% to 11% manufacturer's excise tax collected from the sale of handguns, sporting rifles, shotguns, ammunition, and archery equipment. The Federal Aid program then allots the funds back to states through a formula based on each state's geographic area and the number of paid hunting license holders in the state. The Idaho Department of Fish and Game uses the funds to help restore, conserve, manage, and enhance wild birds and mammals for the public benefit. These funds are also used to educate hunters to develop the skills, knowledge, and attitudes necessary to be responsible, ethical hunters. Seventy-five percent of the funds for this project are from Federal Aid. The other 25% comes from license-generated funds.