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Cal Groen, Director

Project W-170-R-34

Progress Report

MOUNTAIN LION

Study I, Job 8

July 1, 2009 to June 30, 2010

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PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mountain Lion Surveys and Inventories
PROJECT:	W-170-R-34		
SUBPROJECT:	1-7	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	8		

PERIOD COVERED: July 1, 2009 to June 30, 2010

STATEWIDE

Mountain lion seasons consist of a fall and spring hunt. During the Fall 2009-Spring 2010 season (2009 season), Idaho hunters reported harvesting 432 mountain lions of which 321 were killed by resident hunters and 111 by nonresident hunters. Guided hunters killed 97 lions. Additionally, 21,662 tags were sold to residents and 526 were sold to nonresidents. This was a 4.1% decrease in resident tag sales over the previous year, however sales in the previous year was the highest on record. Of the lions harvested, 64% were killed over hounds, a decline over previous years. Hunting with hounds requires a permit, and nonresident permits are restricted to 70 statewide and a few GMUs with additional permits. In the 2009 season, 2,894 resident and 108 nonresident hound hunting permits were sold (permits are used for both mountain lions and black bears).

Harvest monitoring helps the state determine if populations are changing. Over the last 3-4 years, harvest has been fairly stable statewide reflecting stabilizing lion populations. Distribution includes all available lion habitat where deer and elk reside. Lions are commonly found in and near human habitation including population centers across Idaho. Most lions (25%) of any region were killed in the Clearwater Region followed by the neighboring Southwest Region at 20%, and fewest harvested in the Upper Snake and Magic Valley Regions at 8%. Statewide harvest is 56% male and 44% female. Harvest markers and objectives indicate that statewide harvest is meeting objective but that a few GMUs are below or above objective and will need some adjustments in seasons in the coming years if harvest trends continue. Harvest and populations increased through the 1990s peaking during 1998 when 800 lions were harvested, then declined to annual harvest from 400-500.

Staff in the Southwest Region captured 1 lion to remove a GPS radio-collar and monitored 2 radio-marked lions in Unit 40.

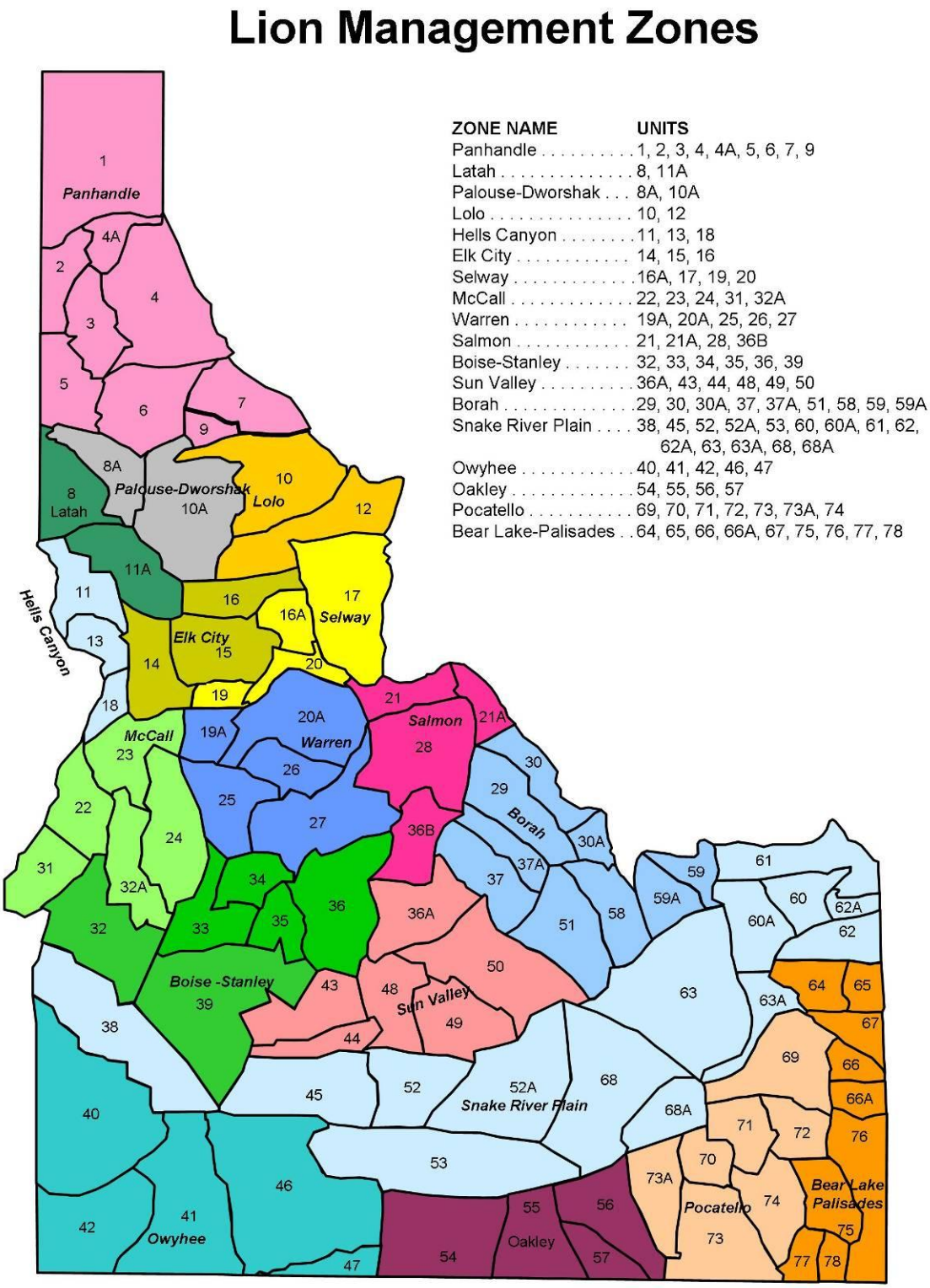


Figure 1. Statewide Mountain Lion Management Zones (DAUs).

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mountain Lion Surveys and Inventories
PROJECT:	W-170-R-34		
SUBPROJECT:	1	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	8		

PERIOD COVERED: July 1, 2009 to June 30, 2010

PANHANDLE REGION

Abstract

The 2009 mountain lion season produced a harvest of 80 mountain lions, resulting in a 3-year average of 71, above the management objective of providing for a harvest of at least 61 lions annually. Female mountain lion harvest made up 38% of the harvest, resulting in a 3-year average of 40%. Additional harvest data and a more complete age dataset to utilize population reconstruction methods may be required to determine lion population trends in the area.

Climatic Conditions

Mountain lion harvest is very dependent on snow conditions: 1) to localize big game animals onto winter range, and 2) to provide adequate tracking conditions. During the 2006 season, significant snowfall did not occur for nearly the entire winter. During the 2007 season, the accumulation of snow was significant. Storms were extreme, especially between the last week of January and the first week of March. Access was very poor during this period. Snow conditions were variable throughout the Panhandle Data Analysis Unit (DAU) in 2008-2009. Snowpack at mid and upper elevations were near normal, but low elevation snow was significantly above normal, especially in the central portion of the DAU. The 2009 mountain lion harvest season saw mild winter conditions that allowed good hunter access combined with light snow accumulations that occurred frequently enough to provide good tracking conditions.

Panhandle DAU (GMUs 1, 2, 3, 4, 4A, 5, 6, 7, 9)

Lion hunting with the aid of hounds is not allowed during general big game seasons for deer and elk. Deer and elk seasons run almost continuously from 10 October through 1 December in most game management units (GMU). However, there is no deer or elk general season in GMUs 4, 7, or 9 after 3 November. GMU 9 is rarely accessible due to deep ridge-top snow on the boundary of the GMU, thereby limiting access to the area.

Management Objectives

The 2002-2010 Mountain Lion Species Management Plan states that initial harvest goals will be based on maintaining harvest levels on a 3-year running average that are at or above the 3-year average harvest for the 1990-1992 big game seasons (Fig. 2) for each DAU, except in areas where other factors or circumstances justify a higher or lower goal (e.g., harvest seasons are deliberately liberalized to reduce the lion population or where the deliberate reduction of a lion population or maintenance at a lower level makes it untenable to continue to reach the harvest levels attained between 1990-1992). The objective for the Panhandle DAU is to maintain a harvest of at least 61 animals. Specific objectives regarding sex and age composition of the harvest will be developed in the future.

The Department will continue to gather harvest data via the mandatory check. Regulations will allow the use of training dogs and continue to protect young mountain lions and females accompanied by young-of-the-year.

Historical Information

The management of mountain lions has changed dramatically during the past 30 years. Through 1971, it was classified as a predator with a continuous open season and no bag limit, and in many years, a bounty was paid for dead mountain lions. With reclassification as a game animal in 1972, more conservative management was initiated to increase the mountain lion population.

The 1972 season for Panhandle DAU was open only September-December, with 1 mountain lion allowed per year. During the late 1970s and early 1980s, seasons remained relatively short, with some GMUs virtually closed. GMU 4, for example, was open for only 7 days in 1970, from 26 November through 2 December. Seasons closed generally at the end of December or in mid-January during most of the 1980s and early 1990s. Beginning in 1993, seasons were extended several times so that lion harvest in Panhandle DAU closed 31 March.

Prior to the 1995 season, this DAU was comprised of 3 separate areas made up of GMUs: 1-1 (GMUs 1, 2, 3, and 5), 1-2 (GMUs 4 and 4A), and 1-3 (GMUs 6, 7, and 9). Concurrent with the establishment of a single Panhandle DAU, seasons in some GMUs were extended to establish a single, DAU-wide season framework and to provide a larger annual sample size, although over a broader area.

Season Structure

In 2007 the season was shortened in response to apparent high harvest rates and a concern of low lion numbers by lion hunters. The opening date was delayed 2 weeks to 15 September, resulting in a 153-day season, closing 16 February in all GMUs. Seasons remain the same for the 2009 season (Appendix A). The use of hounds is not allowed during general deer and elk rifle seasons. No female quotas apply in the Panhandle DAU.

Harvest Characteristics

The 2009 season mountain lion harvest in Panhandle DAU was 80, higher than 2007 season (60) but lower than 2006 season (89) (Fig. 2). Since 1997, no lions have been harvested in GMU 9, logically due to its remote location and poor access.

Harvest using hounds is the predominate method of take in the Panhandle DAU. During the 2009 season, 61% of successful mountain lion hunters used hounds to take a mountain lion. Still/stalk hunting accounted for 11% of the harvest and there were 3 harvested lions recorded in the 2009 season where the method of take was unknown.

Sixty of the 214 mountain lions harvested (28%) in this DAU during the past 3 seasons were taken incidentally, primarily by hunters pursuing other big game animals. The incidental take for the 2009 harvest season was 24%.

Sex Ratio

The percentage of females in the harvest, generally considered an indicator of mortality rates, decreased steadily from the early 1980s through 1993. Since then, the percentage has varied (Fig. 2), and the 3-year un-weighted average is 40% females in the harvest. There is currently no established threshold for this measurement, but the current value is below the maximum threshold (40%) in the 1991-1995 Mountain Lion Management Plan. The 2009 season percent of females in the harvest was 38% and is the lowest in the past 10 years.

Age Structure

Prior to 1998, age was indexed by measuring the distance from the jawbone to the dentine/enamel ridge of the top canine ("tooth drop"). These data were found to be unreliable, and since 1998, premolars have been sectioned and aged. Age data for the 2009 mountain lion harvest season was not available at the time this report was prepared.

Depredations

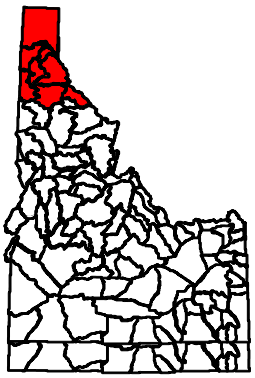
There were no lions reported killed by Wildlife Services during the past year.

Management Implications

Until specific harvest goals for each DAU can be established using the new aging methodology, the current mountain lion plan indicates that initial harvest goals will be based to maintain harvest levels on a 3-year running average that are at or above the 3-year average harvest for 1990-1992, except in areas where other factors or circumstances justify a higher or lower goal. The 3-year average for this DAU from 1990-1992 is 61 mountain lions. The 3-year average of 71 harvested lions is above the minimum criteria and has increased over the past 2 years.

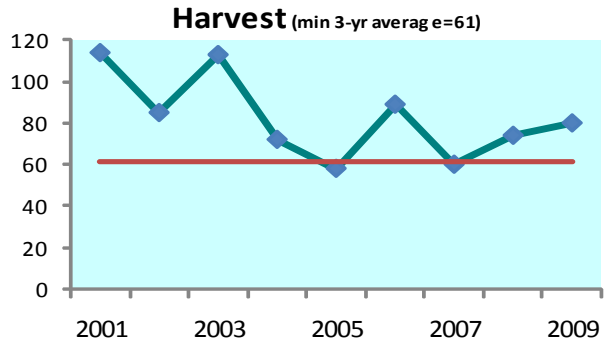
Panhandle DAU (GMUs 1, 2, 3, 4, 4A, 5, 6, 7, 9)

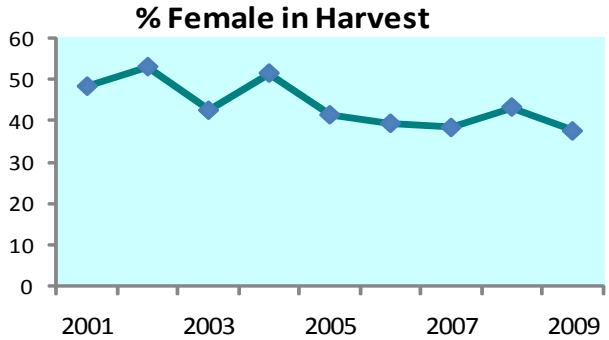
2009 Season		
Criterion	**Goal**	**Current status**
Min 3-yr average harvest	61	71
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	15	11	20	11	13	25	19	26	
Subadult male	30	21	28	21	20	19	16	10	
Male - no age	14	8	16	3	1	10	2	6	50
Male subtotal	59	40	64	35	34	54	37	42	50
Adult female	17	14	14	7	4	8	10	13	
Subadult female	33	25	27	26	16	18	10	13	
Female - no age	5	6	7	4	4	9	3	6	30
Female subtotal	55	45	48	37	24	35	23	32	30
Unknown sex	0	0	1	0	0	0	0	0	0
Total	**114**	**85**	**113**	**72**	**58**	**89**	**60**	**74**	**80**





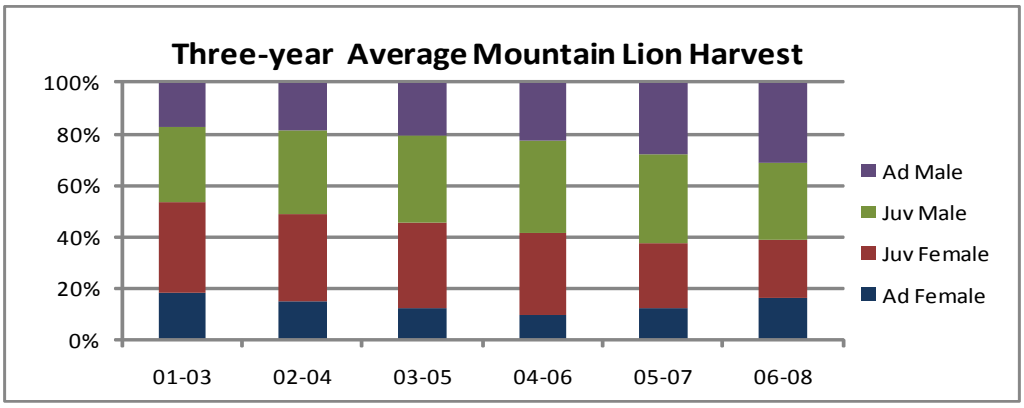


Figure 2. Panhandle DAU

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mountain Lion Surveys and Inventories
PROJECT:	W-170-R-34		
SUBPROJECT:	2	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	8		

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CLEARWATER REGION

Abstract

Hunters harvested 110 mountain lions (51% female) in 6 DAU's in the Clearwater Region (Latah, Palouse-Dworshak, Lolo, Hells Canyon, Elk City, and Selway) during the 2009 season, compared to 121 mountain lions (49% female) during the 2008 season. This is below the 2007-2009 average of 115 lions harvested and a decrease from the 2008 season. Compared to the 2008 season, an increase in harvest occurred in the Selway DAU (+3 lions) and the Palouse-Dworshak DAU (+1 lion); whereas decreases occurred in Latah DAU (-6 lions), Hells Canyon DAU (-4 lions), and Elk City DAU (-3 lions). Harvest in the Lolo DAU remained the same at 11 lions. During the 2009 season, most mountain lions were harvested using hounds (71%), followed by incidental harvest (35%). Most mountain lions were harvested with a rifle (76%), followed by bow (12%) and handgun (11%).

Management Objectives

The 2002-2010 Mountain Lion Management Plan directs the Department to maintain lions at or near their current distribution throughout the state. Harvest goals will be based on trends in past harvest data, mountain lion population dynamics, harvest vulnerability, and the desired level and composition of harvest over a 3-year average. Initial harvest goals for a DAU will be designed to maintain harvest levels on a 3-year running average that are at or above the 3-year average harvest for the 1990-1992 mountain lion seasons.

Climatic Conditions

The Clearwater Region experienced below average snowfall for the 2009-2010 water year. According to the United States Department of Agriculture Natural Resources Conservation Service, the snow water content for the Clearwater basin was 55% of normal as of 1 April. Data from SNOTEL sites indicates that snowpack varied from 53-59% of normal for the North Fork Clearwater, Lochsa, and Selway River watersheds. The dry trend of previous months continued to the end of March when high elevations received 1-3 inches of precipitation and up to 2 feet of snow. Stream flow forecasts were correspondingly low ranging from 50-61% of normal. The Lochsa and Selway rivers received the highest stream flow forecasts while the North Fork

Clearwater River was forecast at only 50% of normal. Dworshak reservoir was 67% full, at 103% of average for March.

April and May received 123% of normal precipitation, bolstering snowpack at higher elevations and delaying snowmelt. As of 1 June, the snowpack in the Clearwater basin was 62% of average with precipitation at 74% of average, indicating just how dry this winter was. Dworshak reservoir was 90% full as of 1 June. Stream flow forecasts for the North Fork Clearwater, Lochsa, and Selway rivers were still low, estimated to be about 60% of normal.

Depredations

Mountain lion depredations are usually very minor in Clearwater Region. For the year, the Region had 2 lions killed in response to depredation complaints.

Latah DAU (GMUs 8, 11A)

Historical Information

Latah DAU GMUs are generally accessible to hunters during winter but support low numbers of mountain lions. Healthy white-tailed deer and elk populations, as well as some mule deer, provide a prey base. Habitats in this area are dominated by privately owned farmlands in upland prairies that are interspersed with coniferous forests leading to the Clearwater River and its tributaries. Canyon breaks leading to the Clearwater River provide quality habitat for many species of wildlife.

Season Structure

Within Latah DAU, the mountain lion take season extended from 30 August-31 March (Appendix A). There is no dog-training season for mountain lions in this DAU.

Harvest Characteristics

Mountain lion harvest in Latah DAU GMUs has historically been light (Fig. 3), averaging 7 lions per season from 2007-2009. This level exceeds the 1990-1992 minimum harvest objective of 3. Six lions were taken in the 2009 season which was down from last year's harvest level of 12.

Incidental harvest and harvest with the use of hounds accounted for 59% and 32% of total harvest, respectively, for the 2007-2009 seasons. At the time of this PR report, no age data was available for the 2009 season.

Management Implications

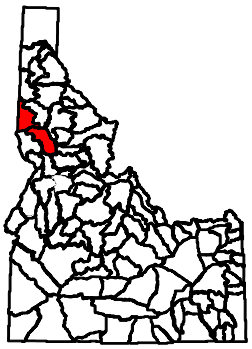
Due to the increase in sightings and reports of encounters during the mid-1990s in this DAU, hunting seasons were liberalized. Harvest continued to increase and, during the 1997 and 1998 seasons, reached an all-time high for this DAU. It is likely that due to the dense white-tailed deer populations throughout much of this DAU, the mountain lion population expanded its range

in response to the growth of this prey population. This would account for increased observations of mountain lions in this DAU during the mid-1990s. Despite the longer season, harvest has remained below the 1997 and 1998 peaks and variable.

Latah DAU (GMUs 8, 11A)

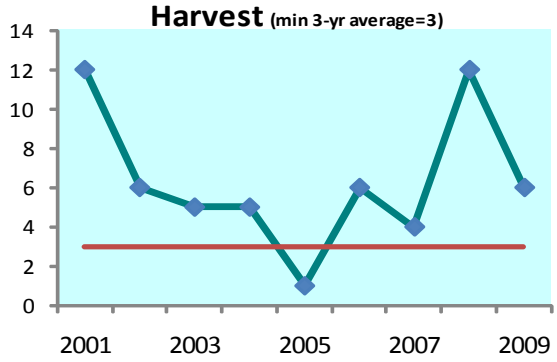
2009 Season

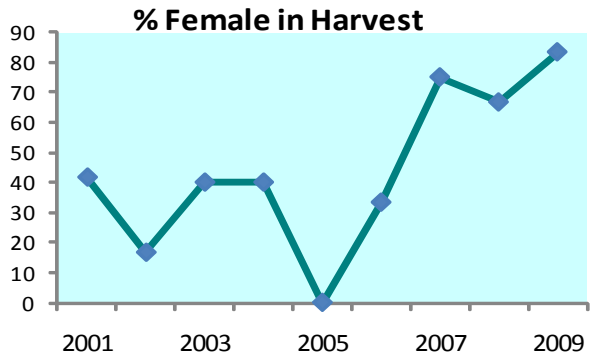
Criterion	Goal	Current status
Min 3-yr average harvest	3	7
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	2	0	1	0	1	2	1	2	
Subadult male	4	5	2	1	0	0	0	2	
Male - no age	1	0	0	2	0	2	0	0	1
Male subtotal	7	5	3	3	1	4	1	4	1
Adult female	3	1	1	1	0	1	0	4	
Subadult female	1	0	1	1	0	1	2	3	
Female - no age	1	0	0	0	0	0	1	1	5
Female subtotal	5	1	2	2	0	2	3	8	5
Unknown sex	0	0	0	0	0	0	0	0	0
Total	**12**	**6**	**5**	**5**	**1**	**6**	**4**	**12**	**6**





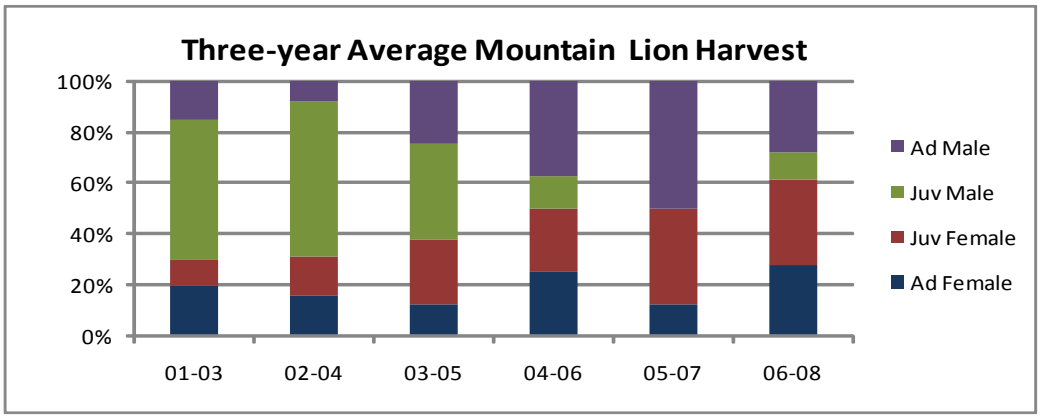


Figure 3 Latah DAU

Palouse-Dworshak DAU (GMUs 8A, 10A)

Historical Information

Three-quarters of Palouse-Dworshak DAU is comprised of timberlands owned by Potlatch Corporation, Idaho Department of Lands (IDL), and U.S. Forest Service (USFS). Timber harvest activity has created vast acreages of early successional habitat benefiting several ungulate prey species. The remaining one-fourth of the DAU is open or agricultural lands providing high-quality forage for deer and elk at certain times of the year. The area is bisected by canyons leading to the Palouse and Potlatch rivers (DAU 8A), Clearwater River, and lower North Fork of Clearwater River (DAU 10A). Both GMUs share a common border along the lower end of Dworshak Reservoir. Access is very good throughout the DAU where high open and closed road densities contribute to good opportunities for hunting mountain lions.

Season Structure

Within Palouse-Dworshak DAU, the mountain lion take season extended from 30 August-31 March (Appendix A). There is no dog-training season for mountain lions and no female harvest quotas in this DAU.

Harvest Characteristics

Mountain lion harvest in Palouse-Dworshak DAU, from 2007-2009, averaged 23 lions per season; 23 lions also were harvested in 2009 season (Fig 4). This is slightly above the 1990-1992 minimum harvest objective of 21. Harvest has been highly variable, probably due to varied hunting conditions between years.

Harvest with the use of hounds and incidental harvest accounted for 59% and 35% of the total harvest respectfully for the 2007-2009 seasons. At the time of this PR report no age data was available for the 2009 season.

Management Implications

Due to the increase in sightings and reports of encounters during the mid-1990s in this DAU, hunting seasons were liberalized. Harvest continued to increase and, during the 1997 season, harvest reached an all-time high. It is likely that, due to the dense white-tailed deer populations throughout much of this DAU, the mountain lion population expanded its range into lower elevations and took advantage of the abundant whitetail population. This could potentially account for increased observations of mountain lions in lower-elevation whitetail habitat in this DAU during the mid-1990s. Despite a longer season, harvest has remained below the 1997 peak and currently has stabilized at about half that level.

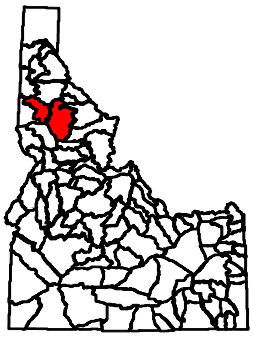
Harvest increased dramatically from 1991-1997 in GMU 10A, where the highest annual harvest in the Clearwater Region has occurred every year since 1994. Although lion harvest has declined from a peak in 1997, the GMU retains a relatively high harvest level. It is unclear

whether the current status is a result of a population change or variable hunting conditions. However, hunters are indicating that lion observations are becoming less frequent
.

Palouse-Dworshak DAU (GMUs 8A, 10A)

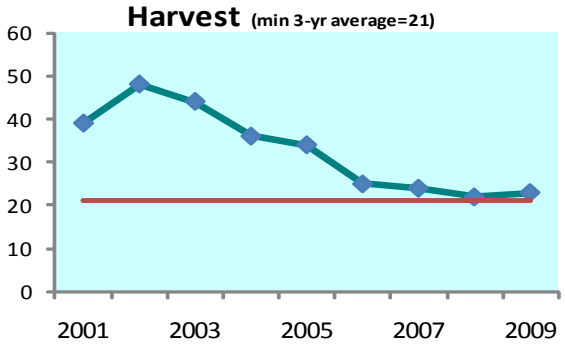
2009 Season

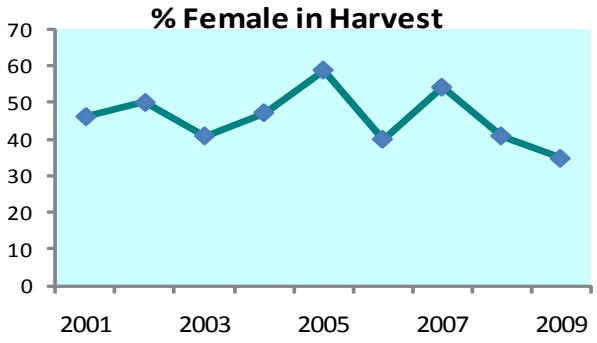
Criterion	Goal	Current status
Min 3-yr average harvest	21	23
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	9	9	12	7	2	6	4	6	
Subadult male	11	13	11	11	9	8	6	6	
Male - no age	1	2	3	1	3	1	1	1	15
Male subtotal	21	24	26	19	14	15	11	13	15
Adult female	3	11	6	6	6	4	5	3	
Subadult female	14	11	11	9	8	4	8	4	
Female - no age	1	2	1	2	6	2	0	2	8
Female subtotal	18	24	18	17	20	10	13	9	8
Unknown sex	0	0	0	0	0	0	0	0	
Total	**39**	**48**	**44**	**36**	**34**	**25**	**24**	**22**	**23**





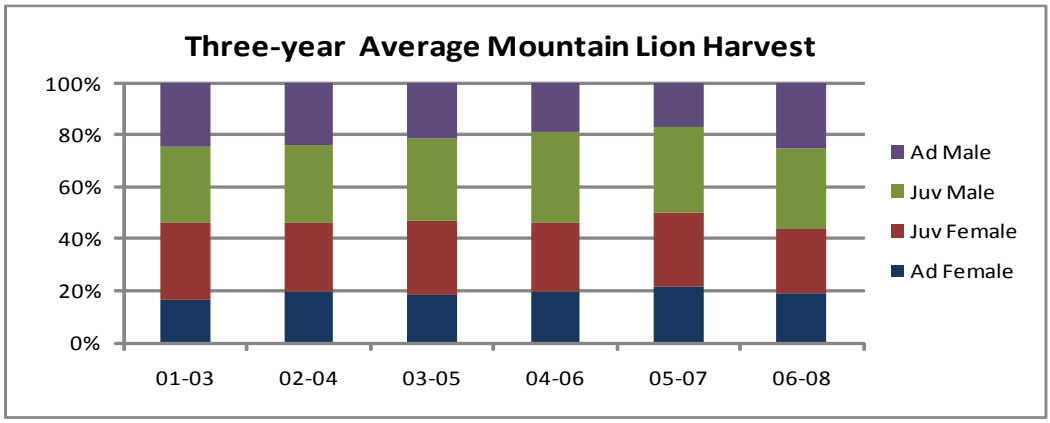


Figure 4 Palouse-Dworshak DAU

Lolo DAU (GMUs 10, 12)

Historical Information

Lion hunter access to Lolo DAU is extremely limited during winter months, except along State Highway 12 from Lowell to Lolo Pass and by snowmobile along the North Fork of the Clearwater River. Much of these 2 GMUs are difficult to access because of snow, mud, and steep, rugged terrain. Deer and elk populations throughout most of the DAU provide a considerable prey base; however, elk numbers have declined substantially over the past 10 years. Habitats include dense coniferous forest and mountains with relatively high precipitation. Land ownership is almost entirely public (USFS).

Season Structure

Within Lolo DAU, the take season began at the end of August and extended through 31 March (Appendix A). The 2-lion bag limit in GMUs 10 and 12 and the use of electronic calls for hunting lions in GMU 12 were discontinued with the 2006 season. This DAU did not have a dog-training season, and there were no female harvest quotas.

Harvest Characteristics

The remote nature and difficult access in this DAU result in a moderate harvest level (Fig 5). An average harvest of 13 lions per season occurred from 2007-2009 seasons. During the 2009 season, Lolo DAU hunters harvested 11 mountain lions, which is below the 1990-1992 minimum harvest objective of 20. Availability of mountain lions appears to be declining, probably a result of the effects of substantial decreases in elk numbers over the past few years and additional lion hunting pressure from reduced nonresident tag costs and the now discontinued 2-lion bag limit.

Harvest with the use of hounds and incidental harvest accounted for 82% and 10% of the total harvest, respectively, during the 2007-2009 seasons. At the time of this PR report no age data was available for the 2009 season.

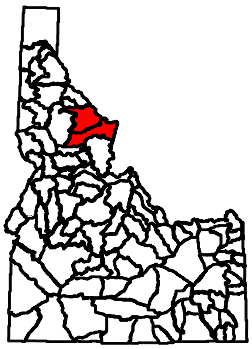
Management Implications

Mountain lion harvest in Lolo DAU has declined abruptly during the past 5 years. This may be an indication that efforts to increase lion harvest over the past few years by liberalizing seasons has been effective and that lion numbers have adjusted to decreased prey availability. Some of the decline may also be related to effects of weather on hunting success because many other GMUs in the region also experienced decreased harvest in recent years. Lion hunters may also be less willing than in the past to turn hounds loose in areas with high wolf numbers.

Lolo DAU (GMUs 10, 12)

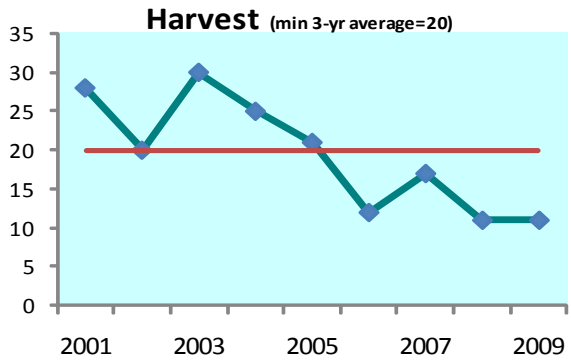
2009 Season

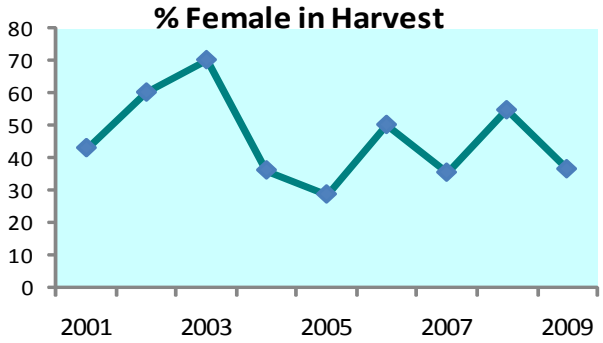
Criterion	Goal	Current status
Min 3-yr average harvest	20	13
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	7	3	3	6	10	4	5	1	
Subadult male	7	5	3	10	3	1	6	0	
Male - no age	2	0	3	0	2	1	0	4	7
Male subtotal	16	8	9	16	15	6	11	5	7
Adult female	8	6	6	4	3	2	3	2	
Subadult female	2	6	9	5	3	1	2	2	
Female - no age	2	0	6	0	0	3	1	2	4
Female subtotal	12	12	21	9	6	6	6	6	4
Unknown sex	0	0	0	0	0	0	0	0	
Total	**28**	**20**	**30**	**25**	**21**	**12**	**17**	**11**	**11**





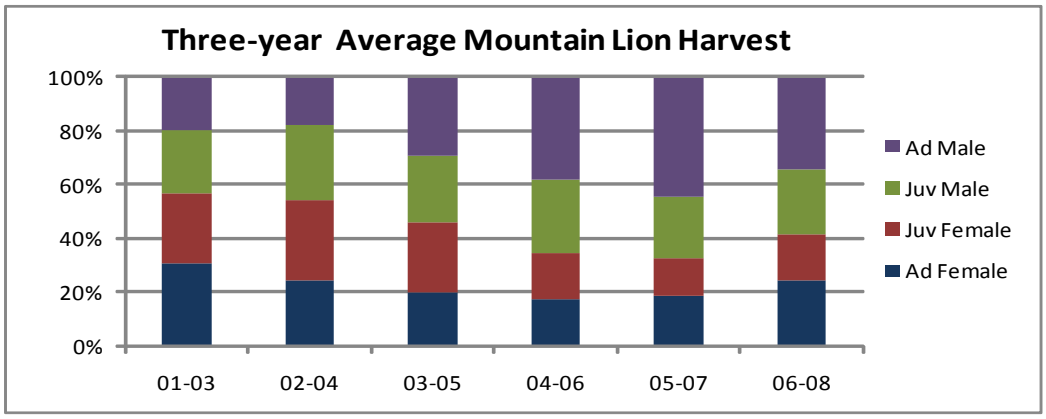


Figure 5 Lolo DAU

Hells Canyon DAU (GMUs 11, 13, 18)

Historical Information

Wildlife habitat in Hells Canyon GMUs varies greatly across the DAU. Steep, dry, river-canyon grasslands give way to higher-elevation forests with greater precipitation. Road density is moderate, and access is restricted in many areas. This DAU contains large tracts of both privately and publicly owned land. GMU 11 is mostly private land except for the Craig Mountain Wildlife Management Area (83,000 acres). GMU 13 is primarily under private ownership and is managed mostly for agriculture and livestock production. GMU 18 is two-thirds public land, mostly in the Hells Canyon Wilderness and National Recreation Area. All 3 GMUs have borders along the Snake and Salmon rivers. Healthy mule deer and elk populations, as well as some white-tailed deer, provide a prey base for mountain lions.

Season Structure

Within Hells Canyon DAU, the mountain lion take season extended from 30 August-31 March (Appendix A). There was no dog-training season for mountain lions nor were there any female harvest quotas for this DAU.

Harvest Characteristics

Mountain lion harvest in Hells Canyon DAU has historically been moderate. From 2007-2009 seasons, harvest averaged 24 lions per season (Fig 6). Twenty-five mountain lions were harvested in the 2009 season. This level has surpassed the 1990-1992 minimum harvest objective of 15 per year but represents a slight decline from 2008 when 29 lions were harvested.

Harvest with the use of hounds and incidental harvest accounted for 73% and 34% of the total harvest, respectively, during the 2007-2009 seasons. At the time of this PR report no age data was available for the 2009 season.

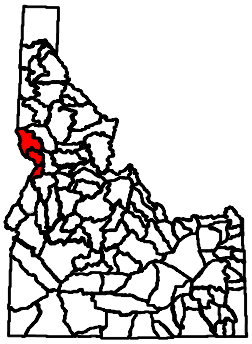
Management Implications

Little change in lion harvest has occurred in this DAU since 1998. Harvest has remained low except when favorable weather conditions have provided increased lion harvest opportunities.

Hells Canyon DAU (GMUs 11, 13, 18)

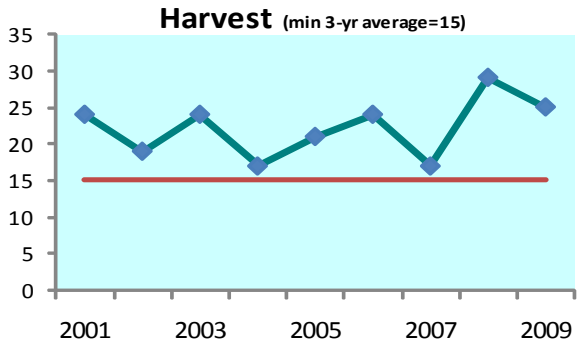
2009 Season

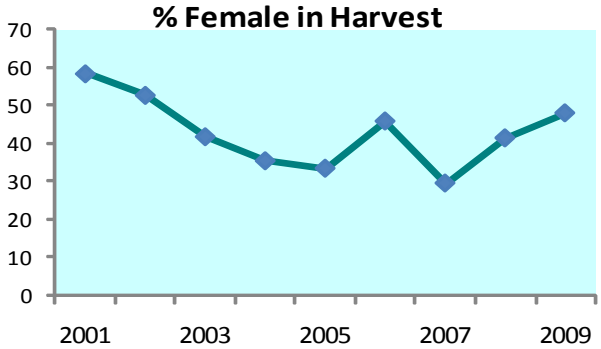
Criterion	Goal	Current status
Min 3-yr average harvest	15	24
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	5	6	6	7	4	5	6	12	
Subadult male	2	3	6	4	10	6	6	4	
Male - no age	2	0	2	0	0	2	0	1	13
Male subtotal	9	9	14	11	14	13	12	17	13
Adult female	7	3	5	5	4	9	4	8	
Subadult female	5	5	3	1	1	1	1	4	
Female - no age	2	2	2	0	2	1	0	0	12
Female subtotal	14	10	10	6	7	11	5	12	12
Unknown sex	1	0	0	0	0	0	0	0	
Total	**24**	**19**	**24**	**17**	**21**	**24**	**17**	**29**	**25**





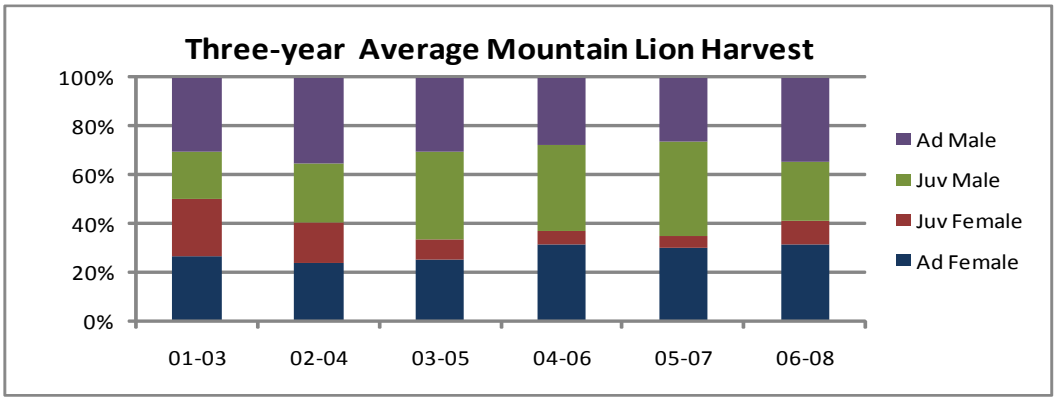


Figure 6 Hells Canyon DAU

Elk City DAU (GMUs 14, 15, 16)

Historical Information

Land ownership in Elk City DAU is 80% public and 20% private. Privately owned portions are at lower elevations along Clearwater and Salmon rivers. Approximately 8% of the DAU falls within Gospel Hump Wilderness. Most of the area is characterized by productive coniferous forests with intermixed grasslands. Logging and mining efforts have resulted in high open and closed road densities contributing to significant big game vulnerability during hunting season. Deer and elk populations throughout most of the DAU are thriving, providing a substantial prey base.

Season Structure

Within Elk City DAU, the take season for mountain lions extended from 30 August-31 March (Appendix A). This DAU did not have a dog-training season, and there were no female harvest quotas. The northern portion of GMU 15 was closed to mountain lion harvest from 1999 through the 2003 season for research purposes. Additional hunting opportunity has been offered with a 2-lion bag limit in that portion of GMU 16 north of the Selway River from 2000 through the 2009 season.

Harvest Characteristics

Hunter access can be difficult in some portions of this DAU. During the 2009 season, Elk City DAU hunters harvested 32 mountain lions; this is the eighth consecutive season in which harvest has been below the 1990-1992 minimum harvest objective of 40 lions (Fig 7). Lion harvest peaked in 1996 and has been at a lower level since that time. Some of the decline can be attributed to the lion harvest closure in the northern portion of GMU 15 from 1999 through the 2003 season.

Harvest with the use of hounds and incidental harvest accounted for 73% and 23% of the total harvest, respectively, during the 2007-2009 seasons. At the time of this PR report no age data was available for the 2009 season.

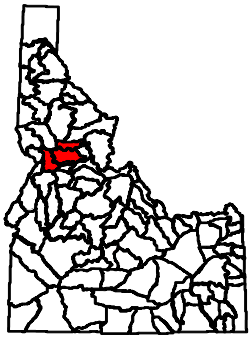
Management Implications

A decline in total mountain lion harvest in Elk City DAU was to be expected after the northern portion of GMU 15 was closed in 1999. However, an additional drop in DAU harvest occurred in 2003. This may have been related to unfavorable weather conditions or the desire by hunters to pursue lions in areas known for greater lion densities. Harvest has remained relatively constant since 2001 but below the minimum 3-year harvest goal.

Elk City DAU (GMUs 14, 15, 16)

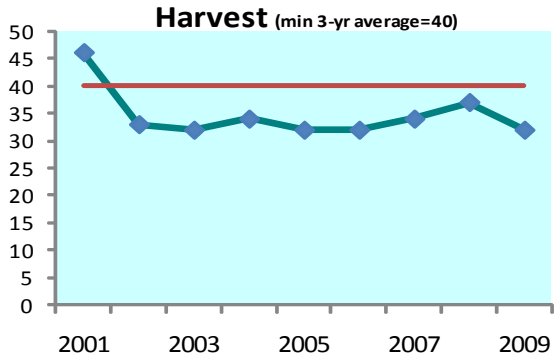
2009 Season

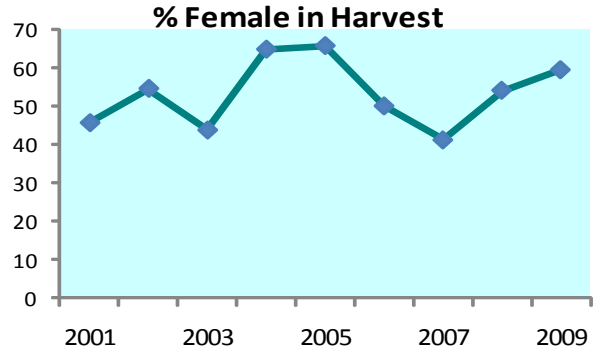
Criterion	Goal	Current status
Min 3-yr average harvest	40	34
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	13	9	9	5	5	11	6	9	
Subadult male	11	6	8	6	5	5	10	7	
Male - no age	1	0	1	1	1	0	4	1	13
Male subtotal	25	15	18	12	11	16	20	17	13
Adult female	6	7	8	15	6	8	4	8	
Subadult female	13	10	5	5	11	6	10	10	
Female - no age	2	1	1	2	4	2	0	2	19
Female subtotal	21	18	14	22	21	16	14	20	19
Unknown sex	0	0	0	0	0	0	0	0	
Total	**46**	**33**	**32**	**34**	**32**	**32**	**34**	**37**	**32**





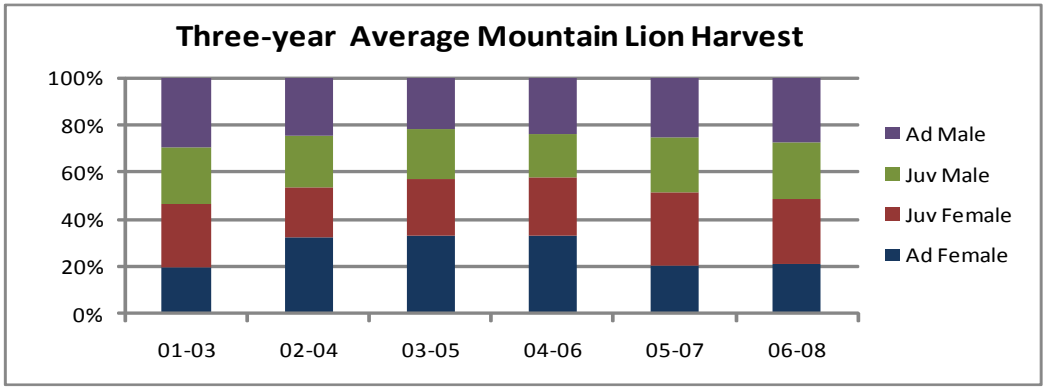


Figure 7 Elk City DAU

Selway DAU (GMUs 16A, 17, 19, 20)

Historical Information

GMUs within Selway DAU are, in part, comprised of Selway-Bitterroot, Frank Church River-of-No-Return, and Gospel Hump Wilderness areas and large roadless areas that afford limited access for hunters during mountain lion season. Habitats within this DAU include dense, coniferous forests within rugged mountainous terrain, as well as Ponderosa-pine savanna habitat with open understory, and steep open bunchgrass hillsides and brush fields along the Selway and Salmon River breaks. Although some white-tailed deer habitat occurs in these GMUs, the predominant ungulates are elk and mule deer.

Season Structure

Within Selway DAU, the mountain lion take season extended from 30 August-31 March (Appendix A). A bag limit of 2 lions has been allowed since 2000. This DAU does not have a dog-training season, and there were no female harvest quotas.

Harvest Characteristics

Mountain lion harvest in Selway DAU was higher in 2000 and 2001 (39 and 33, respectively) than during most years in the recent past, likely a result of the increased bag limit and season length, increased nonresident hound permits, outfitter efforts, and low snow pack (Fig 8). However, harvest declined substantially in 2002 and has remained low since then. Current harvest (14-lion average in 2007-2009 seasons) is below the 1990-1992 minimum harvest objective of 16. Because these are such large GMUs with ample prey base, the mountain lion population is likely much greater than harvest indicates. This suggests an under-harvested but evidently self-regulating population. The major obstacle to harvest in this DAU is difficult hunter access.

Harvest with the use of hounds and incidental harvest accounted for 76% and 14% of the total harvest, respectively, during the 2007-2009 seasons. At the time of this PR report no age data was available for the 2009 season.

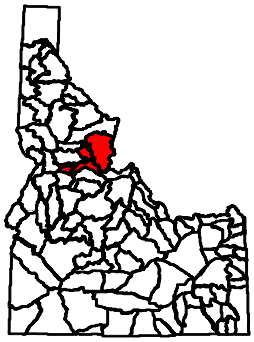
Management Implications

Selway DAU occupies a vast, remote area with high-quality big game range. Consequently, effects of hunting on mountain lion populations in the DAU are generally considered to be light except in those few areas with good road access or in areas where outfitters concentrate their hunting efforts.

Selway DAU (GMUs 16A, 17, 19, 20)

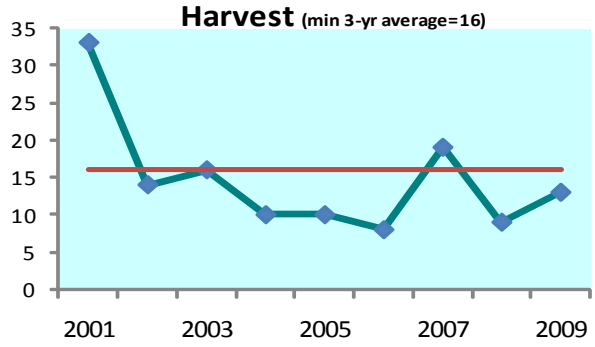
2009 Season

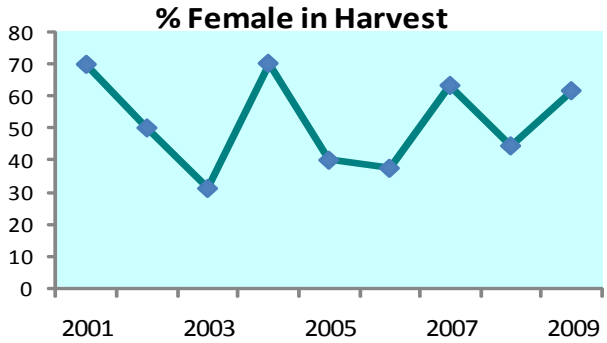
Criterion	Goal	Current status
Min 3-yr average harvest	16	14
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	6	4	4	2	3	4	5	5	
Subadult male	3	2	1	0	3	0	1	0	
Male - no age	1	1	6	1	0	1	1	0	5
Male subtotal	10	7	11	3	6	5	7	5	5
Adult female	13	2	4	5	3	2	7	3	
Subadult female	6	3	0	2	1	1	1	1	
Female - no age	4	2	1	0	0	0	4	0	8
Female subtotal	23	7	5	7	4	3	12	4	8
Unknown sex	0	0	0	0	0	0	0	0	
Total	**33**	**14**	**16**	**10**	**10**	**8**	**19**	**9**	**13**





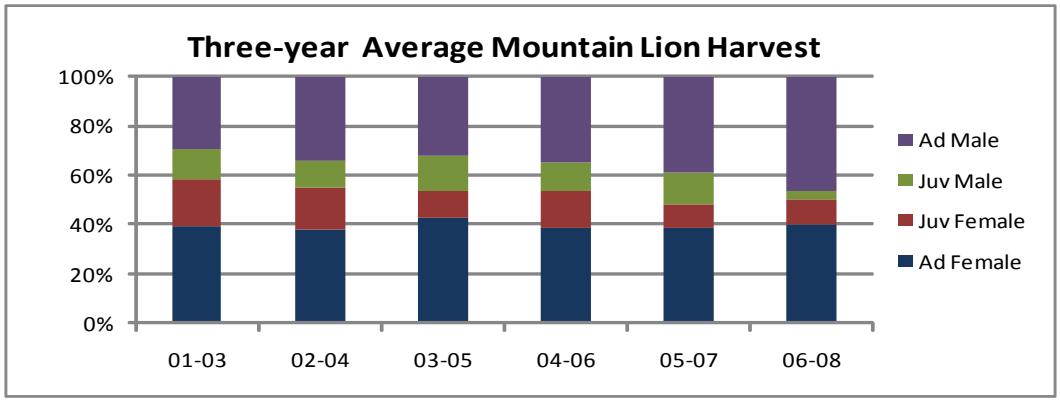


Figure 8 Selway DAU

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mountain Lion Surveys and Inventories
PROJECT:	W-170-R-34		
SUBPROJECT:	3	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	8		

PERIOD COVERED: July 1, 2009 to June 30, 2010

SOUTHWEST REGION

Abstract

Mandatory harvest reports indicate 90 mountain lions were harvested in 4 DAUs in the Southwest Region (Warren, McCall, Boise-Stanley, Owyhee) during the 2009 season. The 2009 harvest was 15% higher than reported in 2008. Twelve GMUs in the Southwest Region have a female harvest quota; once the quota is reached in these GMUs, harvest closes to further female take but remains open to male harvest for the duration of the season. The female harvest quota was not met in any Southwest Region GMU during the 2009 season.

All successful mountain lion hunters must present the hide and skull of harvested mountain lions to a conservation officer or regional office within 10 days of the date of kill for tagging the hide and extracting a premolar for age determination. Information is recorded on sex, weapon type, hunt method, and date of kill among other things.

Climatic Conditions

The Southwest Region experienced less than normal snow pack in most parts of the region for the water year of 2009-2010 according to Natural Resources Conservation Service Idaho Basin Outlook Report. Snow water depths in comparison to the 30-year average were lowest in basins north of the Snake River (Boise Basin=75%, Salmon Basin=67%, Weiser=88%, Payette =67%). Basins south of the Snake River had closer to average snow pack (Bruneau=92%, Owyhee=100%). Close to average precipitation in December and January provided good lion tracking conditions. However, the month of February received substantially less precipitation throughout the southwest region than the 30 year average (Boise Basin=44%, Weiser Basin=47%, Payette Basin=35%, Bruneau Basin=57%, Owyhee Basin=60%). Precipitation again in late March supplemented snowpack at higher elevations, but provided little snow at lower elevations.

Warren DAU (GMUs 19A, 20A, 25, 26, 27)

Management Objectives

Management direction listed in the 2002-2010 Mountain Lion Management Plan is to maintain lions at or near their current distribution throughout the state. Harvest goals will be based on trends in past harvest data, mountain lion population dynamics, harvest vulnerability, and desired level and composition of harvest over a 3-year average. Initial harvest goals for Warren DAU will be designed to maintain harvest levels on a 3-year running average that are at or above the 3-year average harvest of 15 for the 1990-1992 mountain lion seasons. Wildlife managers may recommend female or total quotas to regulate harvest at desired levels through the annual regulation setting process.

Historical Information

Warren DAU is characterized by limited access and rugged topography. Most of the DAU occurs within the Frank Church River-of-No-Return Wilderness. Research data from the early 1970's (Seidensticker et al. 1973) indicate mountain lion populations in this area are self-regulating, contributing emigrating animals to surrounding GMUs. The current structure of long seasons and 2-lion bag limits in GMUs 20A, 26, and 27 (Appendix A) were implemented in response to sportsmen's concerns about declining ungulate recruitment. The use of dogs is allowed in mountain lion take seasons after 31 October.

Harvest Characteristics

Ten mountain lions (6 male, 4 female) were harvested in Warren DAU (Fig. 9) during the 2009 season. The 2009 harvest was 11% higher than that reported in 2008, but the 3-year average was still 13% below the minimum objective average harvest of 15.

Age data for the 2009 harvest is not yet available. Most (6 of 9) lions aged in the 2008 harvest were adult males. Three-year average age data (2006-2008) indicate that 81% of harvested males were in the 3+year-old age class, and 19% were $\leq$ 2 years old (Fig. 9). The proportion of females in the harvest has varied from 11-55% in the last five years (Fig. 9)

During the 2009 season, 80% of mountain lions harvested in the Warren DAU were taken with assistance of hounds, and 20% were taken incidentally to other hunting.

Depredations

Most lion depredations are handled by USDA Wildlife Services in accordance with the interagency MOU between Wildlife Services and the Department. No lion depredations or incidents were recorded during this reporting period.

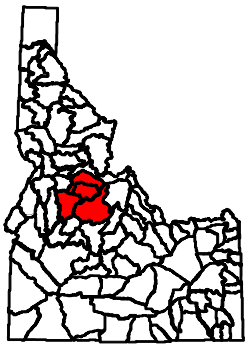
Management Implications

The remote nature of this DAU makes it unlikely that sport harvest can regulate lion population numbers. Prey populations and competition with wolves will likely have the greatest effect on lion populations in this area. Population objectives and hunter desires were reviewed, updated, and incorporated into the 2002-2010 Mountain Lion Species Management Plan.

Warren DAU (GMUs 19A, 20A, 25, 26, 27)

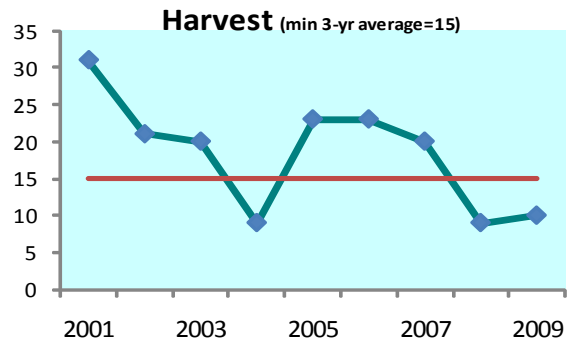
2009 Season

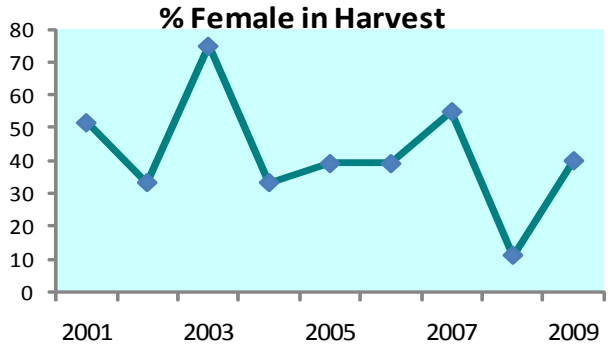
Criterion	Goal	Current status
Min 3-yr average harvest	15	13
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	12	8	4	3	7	11	8	6	
Subadult male	1	4	0	2	5	3	1	2	
Male - no age	2	2	1	1	2	0	0	0	6
Male subtotal	15	14	5	6	14	14	9	8	6
Adult female	11	4	10	0	6	7	5	0	
Subadult female	3	3	3	3	2	2	5	1	
Female - no age	2	0	2	0	1	0	1	0	4
Female subtotal	16	7	15	3	9	9	11	1	4
Unknown sex	0	0	0	0	0	0	0	0	
Total	**31**	**21**	**20**	**9**	**23**	**23**	**20**	**9**	**10**





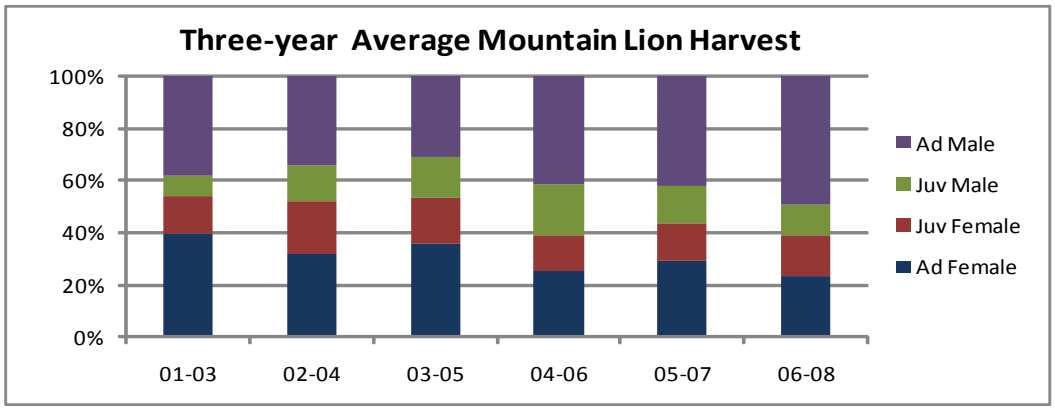


Figure 9 Warren DAU

McCall DAU (GMUs 22, 23 24, 31, 32A)

Management Objectives

Management direction listed in the 2002-2010 Mountain Lion Species Management Plan is to maintain lions at or near their current distribution throughout the state. Harvest goals will be based on trends in past harvest data, mountain lion population dynamics, harvest vulnerability, and the desired level and composition of harvest over a 3-year average. Initial harvest goals for this DAU will be designed to maintain harvest levels on a 3-year running average that are at or above the 3-year average harvest of 20 reported for the 1990-1992 mountain lion seasons (Fig 10). Wildlife managers may recommend female or total quotas to regulate harvest at desired levels through the annual regulation setting process.

Historical Information

Lions were considered rare in these GMUs in the late 1970s and early 1980s. Like lion populations in other parts of the state, those in McCall DAU began increasing dramatically in the early 1990s. Subsequently, lion sightings, depredation occurrences, and sportsmen concerns increased. Conservative seasons adopted in the 1980s were modified to the more liberal seasons currently in place (Appendix A). Female lion harvest quotas were implemented in these highly accessible GMUs to allow ample sport harvest opportunity, yet protect the lion populations from over-harvest. The use of dogs is allowed in mountain lion take seasons provided there is no open firearm season for deer and elk. In GMUs with female lion harvest quotas, a male-only take season begins when the female quota is met.

Harvest Characteristics

Mandatory harvest reports indicate 17 mountain lions (12 male, 4 female, 1 unknown) were harvested in the McCall DAU during the 2009 season. The 2009 season harvest was 15% less than the 2008 season harvest. The 2007-2009 seasons' average harvest is equal to the minimum objective average harvest of 20 (Fig 10).

Age data for the 2009 harvest season is not yet available. Age data indicate most (11 of 20) lions in the 2008 season were adult and sub-adult males. Three-year average age data indicate 54% of the male harvest was comprised of 3+ year-olds. Percent females in the harvest averaged 36% over the last 3 years (2007-2009) (Fig. 10).

Use of hounds is the predominant method of harvest for mountain lions in this DAU, comprising 71% of the 2009 harvest.

Depredations

Most lion depredations are handled by USDA Wildlife Services in accordance with the interagency MOU between Wildlife Services and the Department. No depredation incidents were recorded during this reporting period.

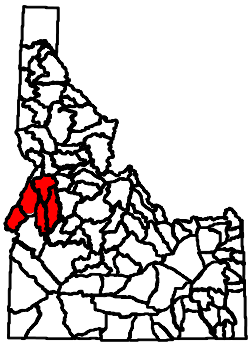
Management Implications

Female lion harvest quotas, implemented to skew lion harvest toward males, seem to be working in McCall DAU. Due to the high accessibility to lion habitat in this DAU, harvest restrictions such as female harvest quotas may be necessary to maintain viable populations and subsequent hunter satisfaction. The percentage of males that make it to ≥8 years is expected to remain low. Population objectives and hunter desires were reviewed, updated, and incorporated into the 2002-2010 Mountain Lion Species Management Plan.

McCall DAU (GMUs 22, 23, 24, 31, 32A)

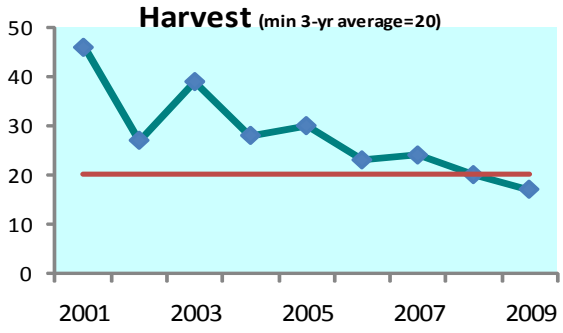
2009 Season

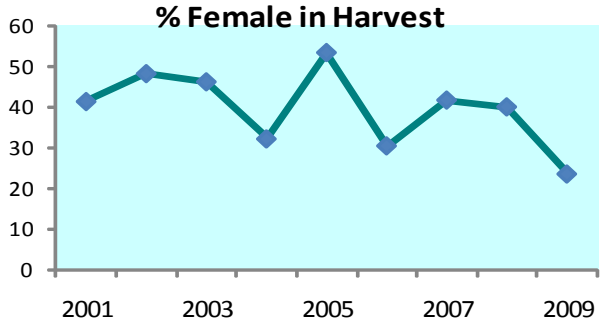
Criterion	Goal	Current status
Min 3-yr average harvest	20	20
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	5	5	17	10	8	9	5	8	
Subadult male	13	6	3	8	3	7	9	2	
Male - no age	9	3	1	1	3	0	0	1	12
Male subtotal	27	14	21	19	14	16	14	11	12
Adult female	10	5	9	1	6	5	9	4	
Subadult female	3	7	5	4	7	2	1	4	
Female - no age	6	1	4	4	3	0	0	0	4
Female subtotal	19	13	18	9	16	7	10	8	4
Unknown sex	0	0	0	0	0	0	0	1	1
Total	**46**	**27**	**39**	**28**	**30**	**23**	**24**	**20**	**17**





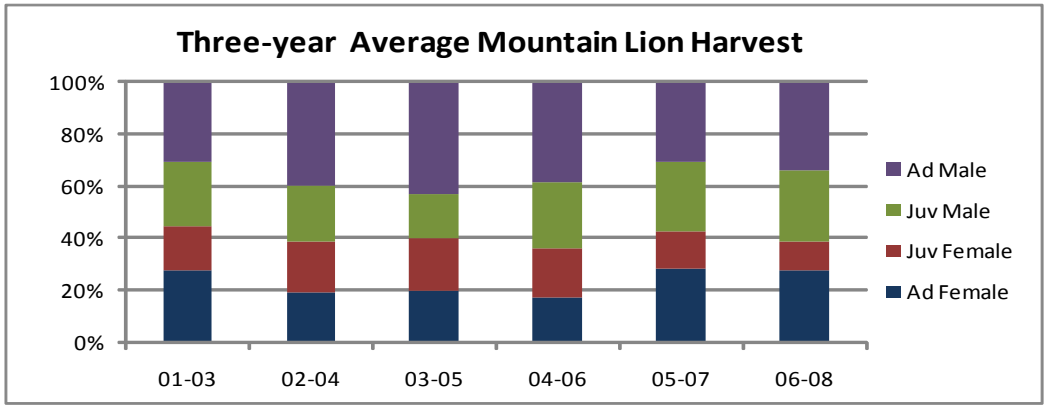


Figure 10 McCall DAU

Boise-Stanley DAU (GMUs 32, 33, 34, 35, 36, 39)

Management Objectives

Management objectives for Boise-Stanley DAU include maintaining approximately the current level of harvest and opportunity. Female harvest quotas are currently in place in these GMUs to guard against over-harvest of the reproductive portion of the population, but harvest of males-only is permitted through the end of the season after a female harvest quota has been met (Appendix A). The harvest objective for this group of GMUs is to maintain a minimum 3-year running average harvest of $\geq$ 30 lions per year (Fig. 11), the lowest level harvested during the mid-1990s.

This group of GMUs is diverse in both topography and ease of access. Topography ranges from the city of Boise, the state's largest urban center, to agriculture, sagebrush and grassland foothills, and forested and alpine mountainous terrain. Much of Boise-Stanley DAU is heavily roaded and well traveled; however, the DAU also contains significant expanses of sparsely-roaded topography. Just as topography and ease of access is diverse in this DAU, so are hunter preferences. While many deer and elk hunters would prefer to see all predator populations minimized, these GMUs are very popular among houndsmen. Management objectives reflect a balance of these desires by allowing generous harvest opportunity while protecting the lion population from over-harvest and maintaining a reasonable percentage of the population in the older age classes.

Historical Information

Lions occurred in lower densities in these GMUs in the late 1970s and early 1980s. Like lion populations in other parts of the state, lion numbers in Boise-Stanley DAU began increasing dramatically in the early 1990s, likely in response to increasing deer and/or elk populations in much of the area. Subsequently, lion sightings, depredation occurrences, and sportsmen concerns increased. Conservative seasons adopted in the 1980s were modified to the more liberal seasons currently in place (Appendix A). Female lion harvest quotas were implemented in the more accessible GMUs of this DAU to allow ample sport harvest opportunity but ensure the lion populations would not be over-harvested. Only GMU 36, which occurs at higher elevation in mountainous terrain and has comparatively few wintering ungulates to maintain lions during winter months, does not have a female quota. The use of dogs is allowed in mountain lion take seasons provided there is no open firearm season for deer and elk. In GMUs with female lion harvest quotas, a male-only take season begins when the female quota is met.

Harvest Characteristics

Hunters harvested 37 mountain lions in Boise-Stanley DAU during the 2009 season, including 21 (57%) females and 16 males. Harvest was 23% higher than during the 2008 season. The 3-year average (2007-2009) harvest of 41 lions per year exceeded the minimum harvest objective of 30 by 37% (Fig. 11). The proportion of females in the harvest has ranged 40-57% over the last 3 years (Fig. 11).

Houndsmen accounted for 49% of mountain lions harvested in the 2009 season, 22% of the lions were taken by still/stalking methods, and 22% were taken incidental to other hunts.

Age information for lions harvested during the 2008-2009 season was not available for this report. Adult (≥3 years) male lions comprised 60% of the total male harvest in the 2006-2008 seasons. Female harvest averaged 49% of total harvest over the last 3 years (2007-2009). Average 3-year adult female harvest was 26% of the total harvest (2006-2008) (Fig 11).

Depredations

Most lion depredations are handled by Wildlife Services in accordance with the interagency MOU between Wildlife Services and the Department. Three depredation incidents involving mountain lions were recorded during this reporting period (1 mule, 1 horse, 1 goat).

Incident Reports

In 2001, regional staff began recording and tracking reports of mountain lion sightings in developed areas and reports of lions exhibiting bold or aggressive behavior. Between 1 July 2009 and 30 June 2010, approximately 3 sightings of mountain lions were reported by the public within, or in close proximity to, city limits of Boise and Kuna. One additional sighting was reported near Idaho City residential area. Additional sightings were reported, but the information presented suggested it was either unlikely it was a mountain lion or that information was too scant to make any conclusions.

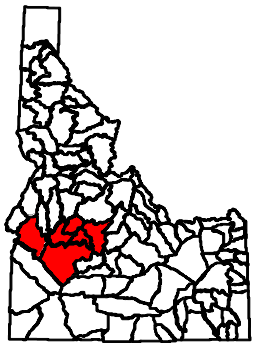
Management Implications

Quotas on female lion harvest, implemented to skew lion harvest toward males, seem to be marginally working in most of the GMUs in this DAU. Department staff will monitor reports of lions in developed areas and respond when appropriate to remove lions that may pose a threat to public safety.

Boise-Stanley DAU (GMUs 32, 33, 34, 35, 36, 39)

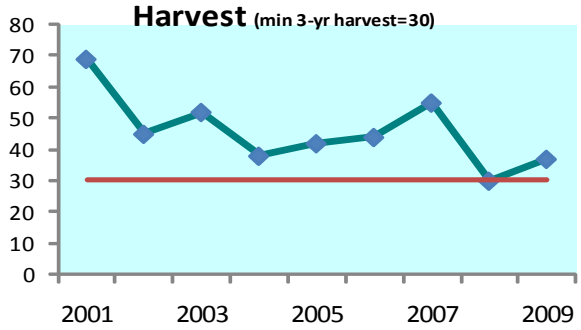
2009 Season

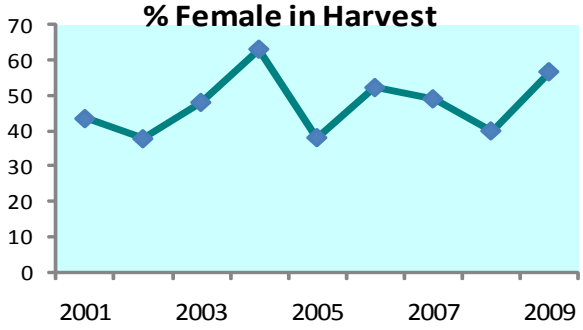
Criterion	Goal	Current status
Min 3-yr average harvest	30	41
Sex/age composition		
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	11	18	12	5	11	13	14	13	
Subadult male	15	2	6	7	13	6	12	4	
Male - no age	13	8	9	2	1	2	2	1	16
Male subtotal	39	28	27	14	25	21	28	18	16
Adult female	11	7	9	8	6	10	18	6	
Subadult female	4	7	9	15	8	11	7	5	
Female - no age	15	3	7	1	2	2	2	1	21
Female subtotal	30	17	25	24	16	23	27	12	21
Unknown sex	0	0	0	0	1	0	0	0	
Total	**69**	**45**	**52**	**38**	**42**	**44**	**55**	**30**	**37**





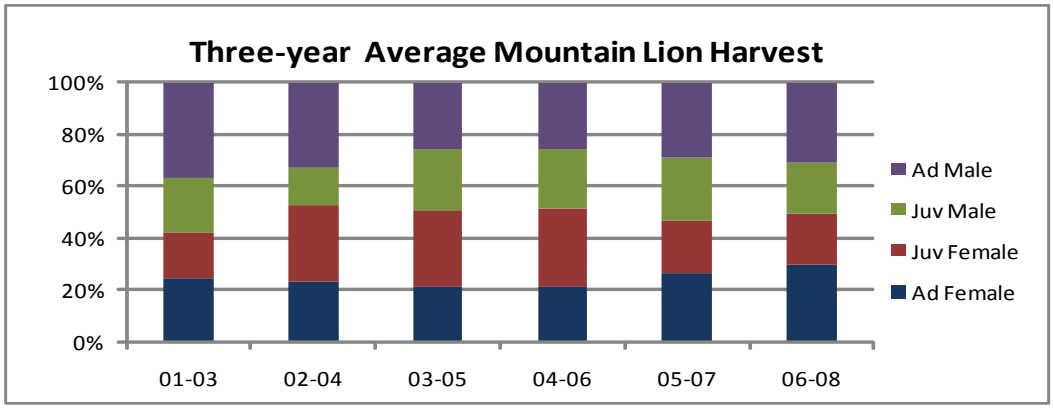


Figure 11 Boise-Stanley DAU

Owyhee DAU (GMUs 40, 41, 42, 46, 47)

Management Objectives

The management direction for this DAU is to maintain a viable mountain lion population throughout the area but encourage more sport harvest of mountain lions in those GMUs where there is a concern about the impacts of lion predation on California bighorn sheep herds. Liberal seasons are offered (Appendix A), particularly in GMUs 41 and 42, where there is some concern about the impacts of mountain lions on bighorn sheep. Female harvest quotas are currently in place in some of these GMUs to guard against over-harvest of the reproductive portion of the population, but harvest of males-only is permitted through the end of the season after a female harvest quota has been met. The harvest quota of 10 females has only been achieved once during the last decade in GMU 40. There has been no female quota in GMUs 41 or 42 since the 2006 season. The harvest objective for this group of GMUs is to maintain a 3-year running average harvest of ≥20 lions per year (Fig. 12).

Historical Information

Owyhee DAU encompasses the southwest portion of Idaho. The habitat is largely open sagebrush desert with interspersed canyon lands ranging to dry forested mountains. The remoteness of the area and general scarcity of trees and presence of cliffs, caves, and other rocky features in parts of these GMUs make mountain lions more difficult to capture with hounds than in many other areas of Idaho. Few roads traverse big game winter ranges, and most mountain lion habitat is not close to major human population centers. Another characteristic that sets Owyhee DAU apart from other areas in Southwest Region is that elk are either absent or relatively scarce, and deer are the primary big game prey species for mountain lions in most of the DAU. Downward trends in California bighorn sheep populations in the Jacks Creek drainages in GMU 41 and the Owyhee River drainage in GMU 42 prompted the initiation of research on bighorn sheep survival in the Little Jacks and Big Jacks Creek drainages in 2002. Results suggest mountain lions may have contributed to the decline of sheep in this system in the late 1990s.

The use of dogs is allowed in mountain lion take seasons provided there is no open firearm season for deer and elk. In GMUs with female lion harvest quotas, a male-only take season begins when the female quota is met. Because of the concern about the impacts of lion predation on bighorn sheep, the Idaho Fish and Game Commission passed regulations to legalize the use of electronic calls as an aid to harvest mountain lions in GMUs 41 and 42 in 2000. The regulation remains in place, but to date, the method has not proven to be useful. No lions checked from these GMUs have been taken with the use of electronic calls since the rule was implemented.

Harvest Characteristics

Hunters harvested 26 mountain lions (8 females, 17 males, 1 unknown) in the Owyhee DAU during the 2009 season. Harvest increased 37% from the 2008 season, and the 3-year running average (2007-2009) harvest of 23 lions per year meets the DAU minimum harvest objective of 20 lions per year (Fig. 12).

Houndsmen accounted for 69% of mountain lions harvested in this DAU in the 2009 season, 11% were killed using still/stalking methods, and 11% of the lions taken were killed incidental to other hunting.

Age information for lions harvested during the 2008-2009 season was not yet available for this report. Adult (≥3 years) male lions comprised 57% of the total male harvest in the 2006-2008 seasons. Females comprised 31% (8 of 26) of the harvest in 2009 season (Fig. 12). Female harvest averaged 49% of total harvest over the last 3 years (2007-2009). Average 3-year adult female harvest was 28% of the total harvest (2006-2008) (Fig. 12).

Depredations

Most mountain lion depredations are handled by USDA-APHIS Wildlife Services in accordance with the interagency MOU between Wildlife Service and the Department. Mountain lion depredations are rarely reported in this area, probably due to its remote nature and lack of domestic sheep grazing activities. No depredation incidents involving mountain lions were recorded during this reporting period.

Incident Reports

In 2001, regional staff began recording and tracking reports of sightings of mountain lions in developed areas and reports of lions exhibiting bold or aggressive behavior. No aggressive incidents were recorded from this DAU during the reporting period.

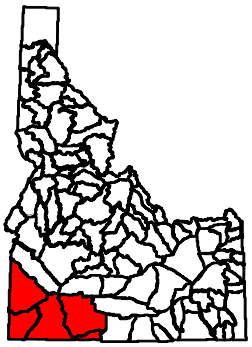
Management Implications

Quotas on female lion harvest, implemented to skew lion harvest toward the male component, probably have little effect in most of the GMUs of this DAU, because the quota is rarely reached. The female quota was removed from GMUs 41 and 42 in 2006. Quotas were not met in the rest of the GMUs of this DAU in the 2009 season.

Owyhee DAU (GMUs 40, 41, 42, 46, 47)

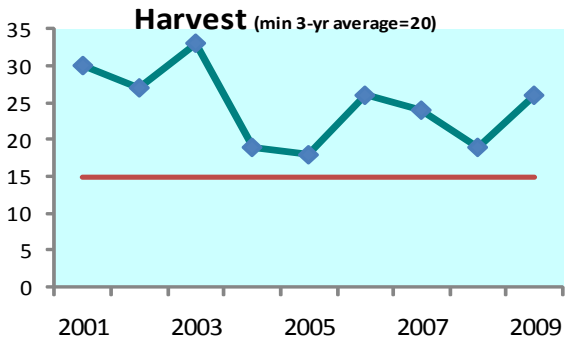
2009 Season

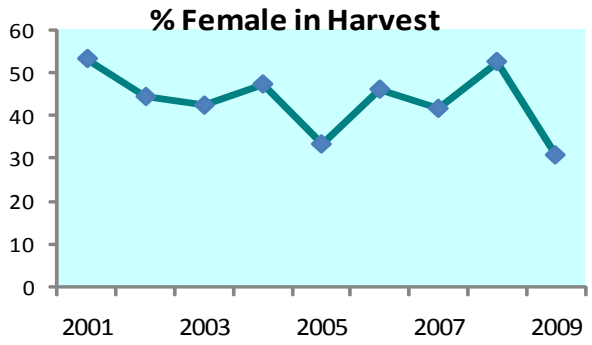
Criterion	Goal	Current status
Min 3-yr average harvest	20	21
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	6	9	12	3	5	8	9	4	
Subadult male	5	5	7	6	6	5	4	3	
Male - no age	3	1	0	1	0	1	1	2	17
Male subtotal	14	15	19	10	11	14	14	9	17
Adult female	6	7	5	6	3	5	6	8	
Subadult female	6	4	8	2	3	5	3	2	
Female - no age	4	1	1	1	0	2	1	0	8
Female subtotal	16	12	14	9	6	12	10	10	8
Unknown sex	0	0	0	0	1	0	0	0	1
Total	**30**	**27**	**33**	**19**	**18**	**26**	**24**	**19**	**26**





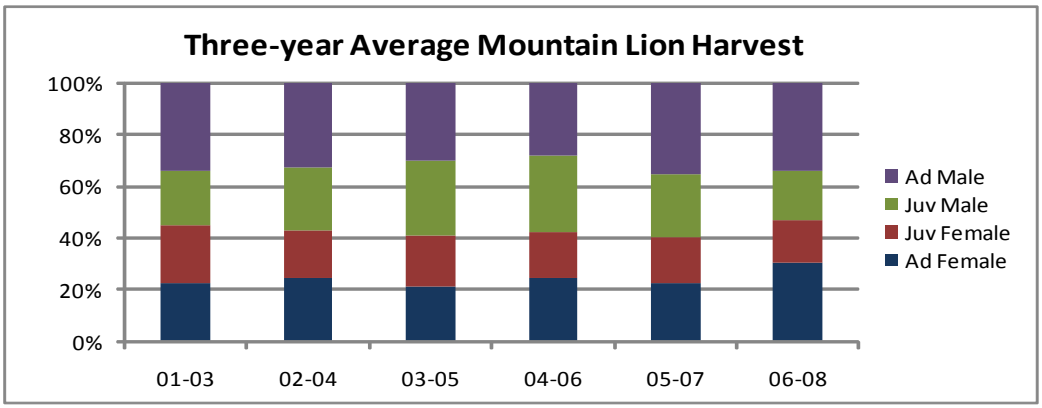


Figure 12 Owyhee DAU

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mountain Lion Surveys and Inventories
PROJECT:	W-170-R-34		
SUBPROJECT:	4	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	8		

PERIOD COVERED: July 1, 2009 to June 30, 2010

MAGIC VALLEY REGION

Abstract

Mandatory reports indicated a harvest of 32 mountain lions in the Sun Valley and Oakley DAUs during the 2009 season; a decrease of approximately 12% from the 2008 season when 36 mountain lions were taken. Twelve mountain lions were harvested in the Sun Valley DAU and 20 in the Oakley DAU. The female quota was not reached in any of the GMUs within the Sun Valley DAU. However, the female quota of 6 was reached in GMU 55 within the Oakley DAU. Eleven of 32 (34%) mountain lions harvested in the 2009 season were females. Hound hunting was the most common method of hunting and accounted for 68% of the harvest in these DAUs.

Management Objectives

Broad harvest management goals for all DAUs were developed in the 2002-2010 Mountain Lion Management Plan to maintain current lion population levels, maintain a diversity of sport harvest opportunities, be responsive to human conflicts, and develop better lion population monitoring tools. Specific harvest goals for Sun Valley and Oakley DAUs are currently limited to maintaining a 3-year average harvest of 16 and 22 lions in each DAU, respectively.

Depredations

Mountain lion depredations are uncommon in the Sun Valley and Oakley DAUs with an average of <1 depredation per year since 2000. Department personnel responded to 3 complaints of depredating lions and 20 complaints of nuisance lions within the Sun Valley DAU during the 2009 reporting period.

Sun Valley DAU (GMUs 36A, 43, 44, 48, 49, 50)

Historical Information

Sun Valley DAU has accounted for an average of 43% of the mountain lion harvest in Magic Valley Region over the last 10 years. Prior to 1994, most mountain lion depredations on livestock occurred in these GMUs; however, in recent years, depredations have been rare.

Harvest Characteristics

The season structure has remained constant in recent years with a season length of 214 days beginning 30 August (Appendix A). Twelve mountain lions were harvested in the Sun Valley DAU during the 2009 season (Fig. 13). The current 3-year average harvest of 16 lions is consistent with the 1990-1992 minimum season harvest objective of 13 (Fig. 13). The female quota of 6 lions was not met in GMUs 43, 44, 48, or 49 during the 2009 season. There are currently no female quotas in place for GMUs 36A and 50.

At the time this report was compiled, age data from lions harvested in 2009 was not available. While the percentage of females in the harvest has remained relatively consistent since 2001, age data from the 2004-2008 seasons indicate that the proportion of adult lions (≥3 years old) in the harvest has increased. The three-year mean percent of adult lions in the harvest has moved from the low fifties, with a low of 50% in the 2003-2005 mean, to a peak of 71% in the 2006-2008 mean. Of known-age males (n = 25), 72% were ≥3 years old across the last 3 years (Fig. 13).

Hunting with hounds accounted for 75% of the mountain lion harvest in the 2009 season with incidental (8%), and unknown (17%) methods also being employed.

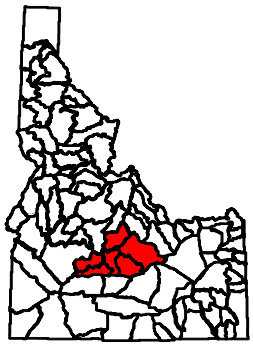
Management Implications

Relatively low harvest in 2008 and 2009 may be more reflective of reduced hunter participation than actual reductions in the lion population. Total harvest in this DAU has remained relatively stable between 2001 and 2009, with a peak of 22 in 2007 and a subsequent low in 2009. Despite the lower than objective harvest in 2008 and 2009, the average of 17 lions harvested annually over the past 10 years exceeds the minimum objective of 13 lions as does the more recent 3-year average of 16 lions. Without age data, it is difficult to make accurate assessments of the population trend using harvest data. However, the recent trend has been for an increasing proportion of adults in the harvest. This may indicate a lack of immigration into the population as a result of relatively high densities. A reduction in the proportion of females in the harvest may also indicate relatively high densities assuming this statistic reflects the ability for hunters to be more selective.

Sun Valley DAU (GMUs 36A, 43, 44, 48, 49, 50)

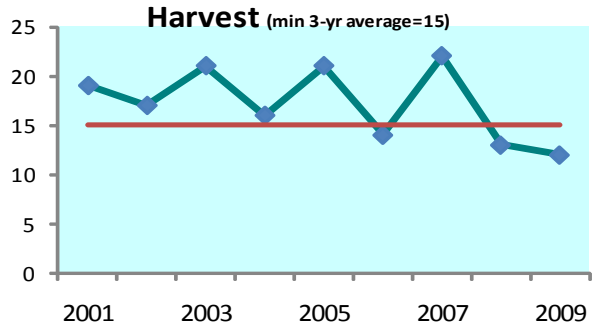
2009 Season

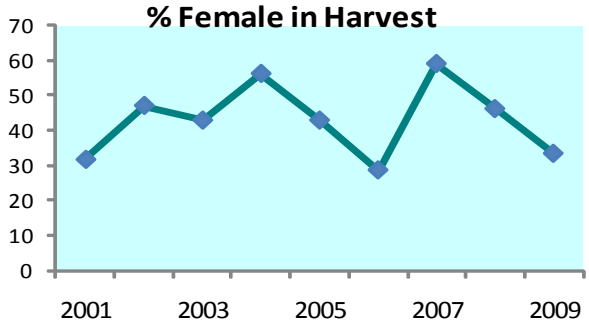
Criterion	Goal	Current status
Min 3-yr average harvest	13	16
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	6	5	5	3	5	7	8	3	
Subadult male	6	4	7	4	7	3	1	3	
Male - no age	1	0	0	0	0	0	0	1	8
Male subtotal	13	9	12	7	12	10	9	7	8
Adult female	2	5	5	5	5	0	8	6	
Subadult female	3	3	3	3	4	3	3	0	
Female - no age	1	0	1	1	0	1	2	0	4
Female subtotal	6	8	9	9	9	4	13	6	4
Unknown sex	0	0	0	0	0	0	0	0	
Total	**19**	**17**	**21**	**16**	**21**	**14**	**22**	**13**	**12**





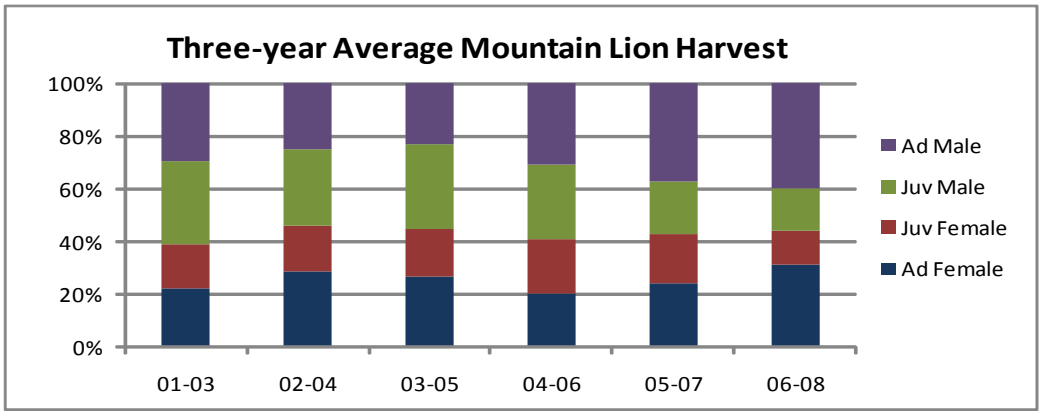


Figure 13 Sun Valley DAU

Oakley DAU (GMUs 54, 55, 56, 57)

Historical Information

GMUs in Oakley DAU have accounted for an average of 57% of the mountain lion harvest in Magic Valley Region during the last 10 years. GMU 54 consistently has the highest annual mountain lion harvest of any management GMU in the region.

Most of the GMUs within this DAU have had female quotas since the 1980s. Therefore, female harvest in these GMUs has generally been very conservative. However, it should be noted that female quotas increased regularly during the early 1990s, and regrouping of GMUs has taken place numerous times. The current quota of 6 females each for GMUs 54 and 55 have been in place since 1996. A historical perspective of female quotas and grouping of GMUs can be found in the 2001-2002 report.

Harvest Characteristics

The season structure has remained constant in recent years with a season length of 214 days beginning 30 August (Appendix A). The female quota of 6 lions in GMU 55 was the only quota met in the Oakley DAU during this reporting period. Twenty mountain lions were harvested in the Oakley DAU during the 2009 season. This level exceeded the 1990-1992 minimum harvest objective of 12 (Fig. 14), and was 13% lower than the 23 lions harvested in 2008 season.

At the time this report was compiled, age data from lions harvested in 2009 was not available. However, total lion harvest has remained relatively constant over the past 10 years. Changes in sex and age, using three-year mean lion harvest, have moderated since the 2003-2005 harvest seasons. Males continue to constitute the majority of the mountain lion harvest in this DAU (Fig. 14).

The use of hounds was the most common method of hunting lions, accounting for 65% of the harvest in the Oakley DAU. However, incidental take (20%) still/stalking (10%), and predator calling (5%) were also employed.

Management Implications

Current harvest strategies in this DAU resulted in slightly decreased annual harvest from 1997 through 2000, but annual harvest has remained relatively unchanged, and still well above the minimum objective average harvest of 12, from 2001 to present. This moderating trend may be the result of relatively stable prey species abundance; specifically mule deer. As prey numbers fluctuate, harvest levels may need to be manipulated in order to continue to meet established objectives.

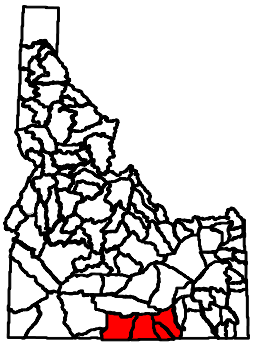
Distribution of males and females in the harvest fluctuated in the late 1990s through the mid 2000s. However, these fluctuations have moderated over the past 5 years. In general, males have comprised the majority of the harvest; indicative of light harvest pressure. Though no age data was available for this reporting period, recent age distribution data indicates that young

mountain lions regularly comprise a majority of the harvest. These harvest characteristics may indicate this population of mountain lions is stable.

Oakley DAU (GMUs 54, 55, 56, 57)

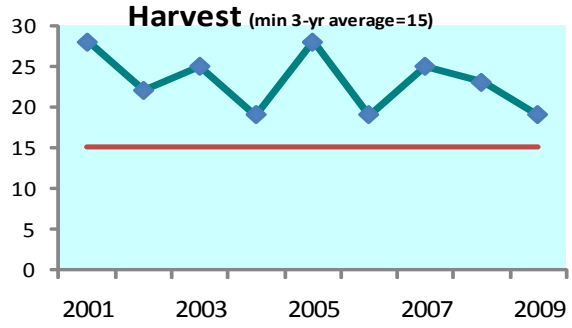
2009 Season

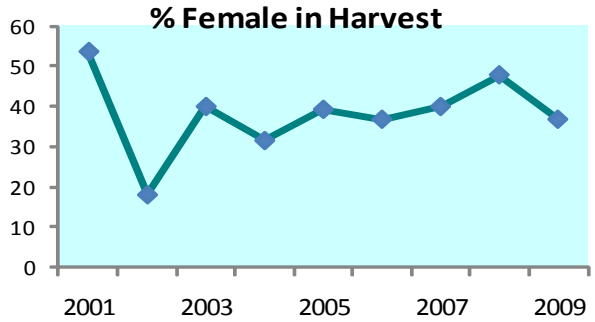
Criterion	Goal	Current status
Min 3-yr average harvest	12	22
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	6	5	9	5	5	7	5	7	
Subadult male	6	11	5	8	11	5	8	4	
Male - no age	1	2	1	0	1	0	1	1	12
Male subtotal	13	18	15	13	17	12	14	12	12
Adult female	9	4	5	4	5	4	6	2	
Subadult female	4	0	3	2	6	3	2	7	
Female - no age	2	0	2	0	0	0	2	2	7
Female subtotal	15	4	10	6	11	7	10	11	7
Unknown sex	0	0	0	0	0	0	1	0	
Total	**28**	**22**	**25**	**19**	**28**	**19**	**25**	**23**	**19**





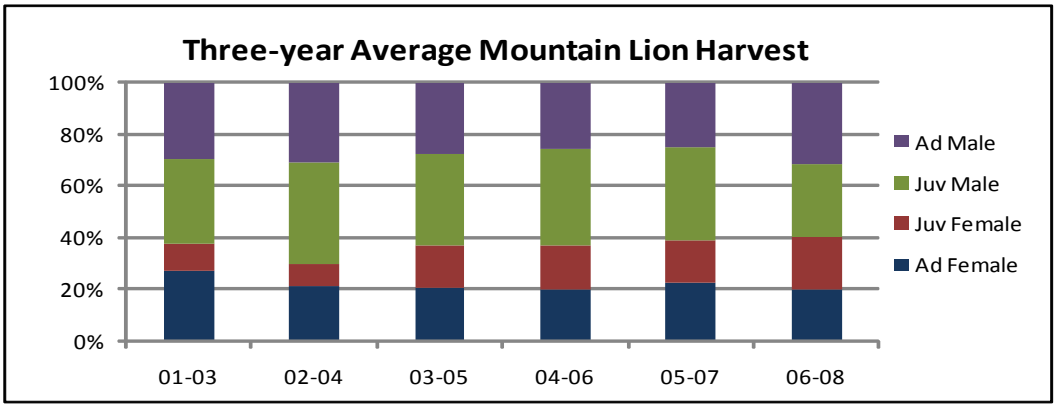


Figure 14. Oakley DAU.

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mountain Lion Surveys and Inventories
PROJECT:	W-170-R-34		
SUBPROJECT:	5	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	8		

PERIOD COVERED: July 1, 2009 to June 30, 2010

SOUTHEAST REGION

Abstract

Information and data from GMUs within the Pocatello DAU were previously included in reports from the Southeast and Upper Snake regions.

A total of 32 mountain lions (15 males, 17 females) were reported harvested in the Pocatello DAU during the report period. No mountain lion livestock depredation complaints were reported by Wildlife Services during this reporting period.

Climatic Conditions

Spring rainfall was similar to the previous year, summer rainfall was below average, and rain showers during late summer and fall contributed to some green-up prior to winter. Snow pack measurements taken during 2009-2010 were 80-110% of the 30-year average in both the Snake River (northern portion of the region) and Great Basin (southern portion) watersheds.

Presence or absence of snow for tracking can have a significant effect on mountain lion harvest in some areas. Lower snow depths generally restrict snowmobiles. Conversely, adequate snow levels make tracking more efficient.

Pocatello DAU (GMUs 69, 70, 71, 72, 73, 73A, 74)

Management Objectives

The Department's Mountain Lion Management Plan was rewritten in 2002. Specific objectives regarding sex and age composition of the harvest (Table 1) will be developed in the near future. Management policy and strategy calls for maintaining viable populations of lions in Idaho while maintaining harvest at levels at or above those of the early 1990s where appropriate. Harvest levels in that period were significantly lower than those of the mid- to late 1990s and early 2000s.

Historical Information

The mountain lion was first classified as a big game species in Idaho in 1972. Mountain lion tags have been required since 1975. Mountain lion numbers are believed to have been low in the Southeast Region during the 1950s and 1960s when annual harvest in eastern Idaho averaged from 2 to 4 animals. Population information is sparse; however, increased sightings, increased depredations, and increased harvest all suggest that mountain lion populations have increased over recent historic levels. Populations of the main prey species, mule deer, fluctuate widely and are currently at moderate levels. A large livestock industry in southeastern Idaho and the concern for depredations has and will probably continue to influence mountain lion populations and management.

From 1991-1997 and again in 1999-2000, the region was divided into a west district (GMUs 70, 71, 73, 73A, 74) and an east district (GMUs 66A, 72, 75, 76, 77, 78) with a female harvest quota for each district. In 1999, GMU 74 was moved from the western to eastern quota district. Quotas varied from 2 females per district to 15 in the west and 5 in the east. District remained open until the female quota had been reached or the end of the season, whichever occurred first. If the female quota was reached prior to the closing date, pursuit-only was allowed until the close of the season. The female quota was removed in 2005. It is mandatory that all mountain lions harvested by hunters are checked and pelts tagged by the Department. Harvest data and characteristics are taken from these mandatory checks.

GMUs 70, 71, 73, and 73A have served as 'mountain lion harvest treatments' for the mule deer research project conducted from 1998 through 2003. Management was intended to maintain relatively higher harvest than in adjacent 'control' GMUs with lower harvest levels.

Due to pressure from sportsmen's groups and a commitment to the Mule Deer Initiative, the Department initiated a general lion season with no female quotas across the Southeast Region for the 2005-2006 mountain lion season. The Pocatello DAU still has a general lion season for reasons mentioned above.

Season Structure

Within the Pocatello DAU, the 2008-2009 mountain lion take season was from 30 August through 31 March (Appendix A). Dogs are prohibited from 1 October to 16 November in GMUs 70, 71, 72, 73, 73A, and 74; in GMU 69, dogs are prohibited from 1 October to 30 November. The female harvest quota was removed in 2005 and the Southeast Region now has a general mountain lion season.

Harvest Characteristics

Reported harvest of lions from the DAU for the 2009 season was 32; 15 male and 17 females (Fig. 15). Age information for 2008 (cementum annuli from teeth collected via the mandatory check) suggests that a near equal amount of subadult lions are being harvested to adult lions, and that the percentage of adult females over a three year average is increasing.

Hound hunting remained the predominant method of take (80%). Incidental harvest (generally lions taken while deer or elk hunting) and predator calling accounted for most of the remainder.

Depredations

Wildlife Services responds to mountain lion depredation issues in concert with the Department. No mountain lions were killed by Wildlife Services for depredations during the reporting period.

Management Implications

During the period 1981-1990, the annual harvest of mountain lions in southeast Idaho was low (0-10). Seventeen mountain lions were reported harvested in 1990, prompting the establishment of a female quota beginning in 1991. As the quotas were gradually increased during the 1990s, the harvest increased significantly, reaching a high of 94 in 1998.

Male/female ratios in the harvest have generally ranged between 1:1 and 2:1. The 45% female harvest during the reporting period has increased over the past 2 years, likely due to the general mountain lion season structure. Effects to the mountain lion population of recent record-level harvests are unknown. Tracking the age structure within the harvest to identify changes in mountain lion population structure will continue to be important.

Low deer populations in the mid-1990s prompted many hunters to suggest that lion predation was a significant limiting factor and to favor reducing lion populations through increased harvest. The Department implemented a deer research project in southeast Idaho in 1998 which, in part, looked at whether varying levels of lion harvest influenced deer population response.

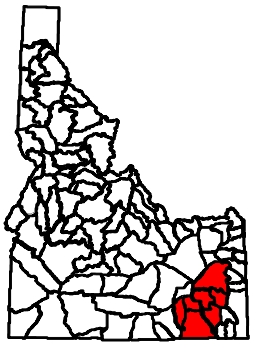
Continuing concern for the Southeast Region's mule deer herd resulted in the removal of the female harvest quota; there is now a general lion season across the Southeast Region. This, however, has generated a concern among lion hunters regarding lion populations and opportunities for trophy lion hunting.

During the season setting process in the spring of 2010, lion hunter comments were unanimous for some form of protection for the female portion of the lion population. So, as a compromise between the lion hunting and mule deer hunting publics, a region wide female lion harvest quota was set at 22 females.

Pocatello DAU (GMUs 69, 70, 71, 72, 73, 73A, 74)

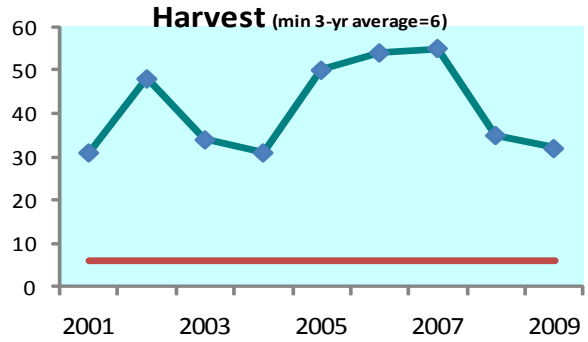
2009 Season

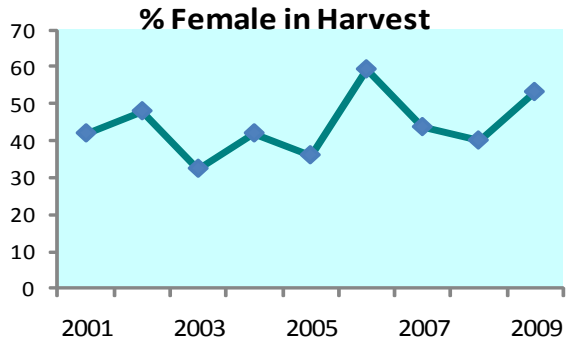
Criterion	Goal	Current status
Min 3-yr average harvest	6	41
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	5	13	15	9	8	12	11	7	
Subadult male	10	9	6	9	23	7	15	8	
Male - no age	3	3	2	0	1	3	5	4	15
Male subtotal	18	25	23	18	32	22	31	19	15
Adult female	2	10	5	4	5	12	13	7	
Subadult female	11	6	6	9	10	11	6	4	
Female - no age	0	7	0	0	3	9	5	3	17
Female subtotal	13	23	11	13	18	32	24	14	17
Unknown sex	0	0	0	0	0	0	0	2	
Total	**31**	**48**	**34**	**31**	**50**	**54**	**55**	**35**	**32**





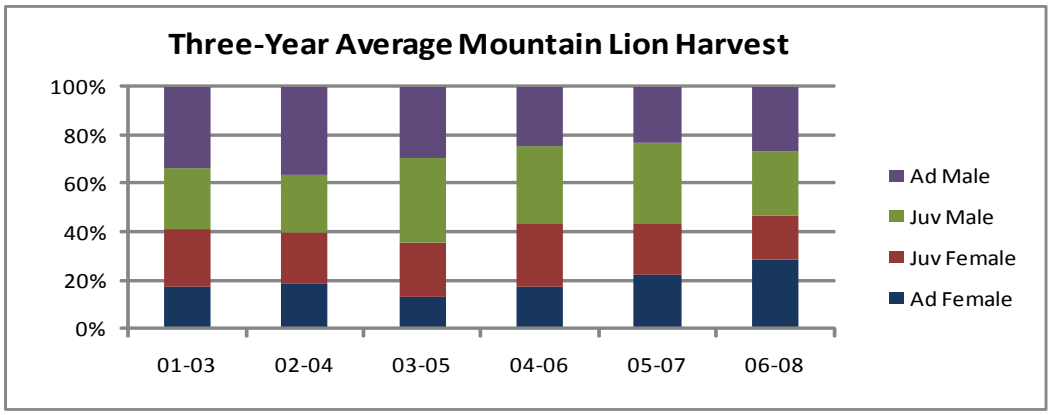


Figure 15. Pocatello DAU.

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mountain Lion Surveys and Inventories
PROJECT:	W-170-R-34		
SUBPROJECT:	6	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	8		

PERIOD COVERED: July 1, 2009 to June 30, 2010

UPPER SNAKE REGION

Abstract

The Department revised its mountain lion management plan during the 2002-2003 reporting period. The plan established new DAUs and the region is now included in 5 different DAUs that also overlap parts of other regions. Upper Snake Region is responsible for reporting on Snake River and Bear Lake-Palisades DAUs.

Fifteen mountain lions were reported harvested in Snake River DAU (Fig 16), and 32 lions were harvested in Bear Lake-Palisades DAU (Fig. 17) during the 2009 season. Harvest was determined from hunter reports as required by Fish and Game Commission regulation. There was no female mountain lion quota for any of the GMUs in either DAU during the 2009 season. Information on lion depredation complaints for this reporting period from Wildlife Services did not include any verified mountain lion depredations or removals.

Climatic Conditions

Overall, climatic conditions were very favorable throughout this reporting period. The summer of 2009 was moist and the region saw exceptional vegetation growth, creating excellent habitat conditions throughout the region. The winter of 2009-2010 was mild, with less than average snow pack and crusting. The minimal winter snowpack receded quickly and moist spring conditions led to good forage conditions throughout the spring and early summer of 2010.

Historical Information

Mountain lion habitat in Upper Snake Region lies outside of the core lion habitat in Idaho. Historically, lions were killed year-round to minimize conflict with livestock production resulting in very low lion numbers in the region. In 1972, mountain lions in Idaho were reclassified as a game animal and harvest was regulated. Seasons in the western part of Upper Snake Region during the 1970s remained liberal to address livestock conflict concerns. Lion numbers and distribution in the region recovered slowly and by the late 1980s, a few lions were observed in the eastern part of the region.

Mountain lion distribution in the region appears to be closely associated with areas that have mule deer year-round. Most of the mule deer in the region are migratory with some areas having very few deer during summer and other areas with few deer during winter. Other areas are only occupied by deer during spring and fall migration. Those areas that do not have good year-round mule deer numbers tend to have only non-territorial lions and only occasional lion occurrence.

During the 1970s and 1980s, most of the lion harvest from Upper Snake Region came from GMU 50 with occasional harvest from GMU 51. Very little harvest occurred from GMUs 58 and 59A. GMUs 60 through 69 had no lion season until the 1990s when a short, limited season was opened for GMUs 64, 65, and 67. Since then, all other GMUs in Upper Snake Region have been opened to lion hunting. Hunting seasons have also been lengthened and female quotas removed.

In the past, GMUs in Upper Snake Region have been included in different lion DAUs, sometimes including parts of other regions and, at other times, contained solely within Upper Snake Region. From 1996-2002, GMUs 50 and 51 were in DAU 6-2; GMUs 58, 59, and 59A were in DAU 6-1; GMUs 63A, 64, 65, 66, 67, and 69 were in DAU 6-3; and GMUs 60, 60A, 61, 62, and 62A were in DAU 6-4. GMU 63 had no lion season.

Starting with the 2003 season, GMUs were placed in new DAUs. Since no biological data were available to establish DAUs based on lion populations, DAUs were established using areas of somewhat similar habitat/ownership and/or average annual lion harvest during the 1990-2000 harvest seasons that might potentially be large enough to follow trends in lion numbers.

GMU 50 is now in the Sun Valley DAU along with GMUs 36A, 43, 44, 48, and 49. GMUs 51, 58, 59, and 59A are in the Borah DAU along with GMUs 29, 30, 30A, 37, and 37A. GMUs 60, 60A, 61, 62, 62A, 63, and 63A are in Snake River DAU along with GMUs 38, 45, 52, 52A, 53, 68, and 68A. GMUs 64, 65, 66, and 67 are in Bear Lake-Palisades DAU along with GMUs 66A, 75, 76, 77, and 78. GMU 69 is now in the Pocatello DAU along with GMUs 70, 71, 72, 73, 73A, and 74.

Management Objectives

One criteria suggested by Anderson and Lindzey (2005) to manage mountain lion populations is the percentage of adult (≥3-year-old) female lions harvested from a population. If this percentage exceeds 25%, it is an indication of a lion population being harvested at a level that will result in a decline. Anderson and Lindzey (2005) also emphasized the need to have consistent harvest seasons for at least 3 years to evaluate what effect the harvest is having on lion populations.

The management goal for GMUs managed by the Upper Snake Region is to try to maintain consistent hunting seasons over time while at the same time trying to keep the adult female component of the harvest ≤25%.

Management Implications

Since the new DAUs overlap with other IDFG administrative regions, it has been difficult to have uniform and consistent hunting seasons between regions and over years. The new DAUs also make it difficult to track individual mountain lion concentrations in the region. There is a need to monitor individual lion concentrations in the region to avoid conflict with livestock producers and other interests concerned about lion predation on other big game species while still addressing the desires of lion hunters.

Snake River DAU

(GMUs 38, 45, 52, 52A, 53, 60, 60A, 61, 62, 62A, 63, 63A, 68, 68A)

Management Objectives

Specific objectives regarding sex and age composition of the harvest have not been developed for this DAU. The current Mountain Lion Management Plan states that initial harvest goals will be to maintain harvest levels on a 3-year running average that are at or above the 3-year average harvest for the 1990-1992 lion seasons. From 2007-2009, harvest averaged 11 lions per year. This level is over 8 times higher than the 1990-1992 minimum harvest objective of 1.3.

Historical Information

In general, these GMUs have marginal lion habitat, lack year-round prey sources, and lie on the margins of areas with established lion populations. Lion presence tends to be occasional transient lions from other areas having established territorial lion populations. Hunting seasons have varied from closed to 214 days with some having female quotas and others with no female quotas; however, none of these GMUs have had female quotas since the 2004 harvest season (Appendix A).

Harvest Characteristics

Harvest has been light with 20% incidental harvest but has increased since 2007. Harvest has varied in age and sex composition (Fig 16) and most occurs by the use of hounds. During the 2007-2009 seasons, 41% of successful mountain lion hunters used hounds. Harvest has varied from 2-15 for the 1994-2009 seasons and has also varied from all male to all female. From 2000 to 2008, most (45%) reported lion harvest has occurred from GMU 45 while no lions were reported from GMUs 38, 52A, 53, 60A, 63, 63A, or 68.

Depredations

No lion depredation complaints were verified during this reporting period from Wildlife Services.

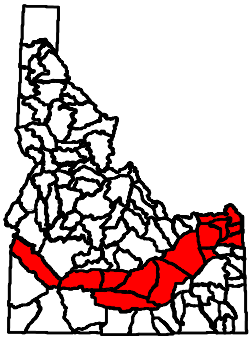
Management Implications

GMUs included in this DAU are managed by the Southwest (GMU 38), Magic Valley (GMUs 45, 52, 52A, and 53), Upper Snake (GMUs 60, 60A, 61, 62, 62A, 63, and 63A) and Southeast (GMUs 68 and 68A) regions. As stated in the historical section, this DAU is basically a population sink area for several adjacent areas that act as source populations for lions harvested in this DAU. Prior to 2004, hunting season restrictions varied between these administrative regions. Hunter access, winter conditions, and vulnerability of lions to harvest also varies throughout this DAU. Therefore, it is difficult to manage lions in this DAU based on data collected. As long as harvest remains light and principally opportunistic, there is probably no need for more intense monitoring or management. Individual regions, especially Magic Valley Region, will need to monitor harvest for their GMUs to ensure it is consistent with local public desires.

Snake River DAU (GMUs 38, 45, 52, 52A 53, 60, 60A, 61, 62, 62A, 63, 63A, 68, 68A)

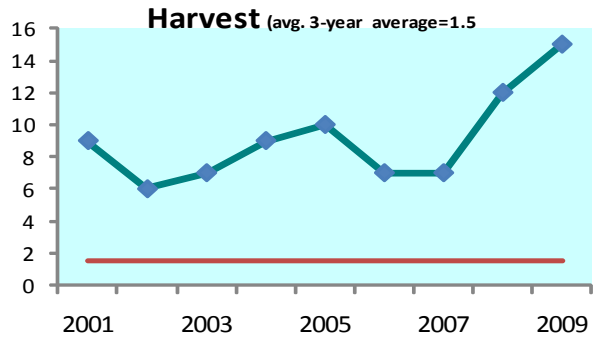
2009 Season

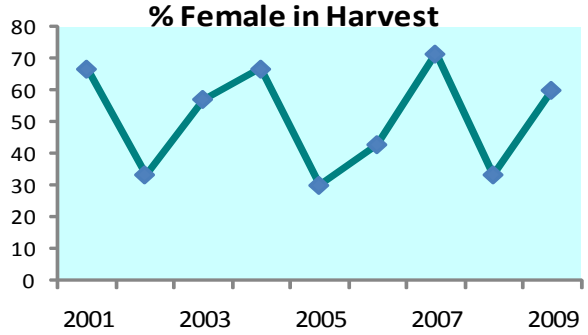
Criterion	Goal	Current status
Min 3-yr average harvest	1.3	9
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	2	4	3	2	3	3	1	7	
Subadult male	0	0	0	1	4	1	1	1	
Male - no age	1	0	0	0	0	0	0	0	6
Male subtotal	3	4	3	3	7	4	2	8	6
Adult female	1	0	1	1	1	1	4	3	
Subadult female	2	1	2	5	1	2	1	1	
Female - no age	3	1	1	0	1	0	0	0	9
Female subtotal	6	2	4	6	3	3	5	4	9
Unknown sex	0	0	0	0	0	0	0	0	
Total	**9**	**6**	**7**	**9**	**10**	**7**	**7**	**12**	**15**





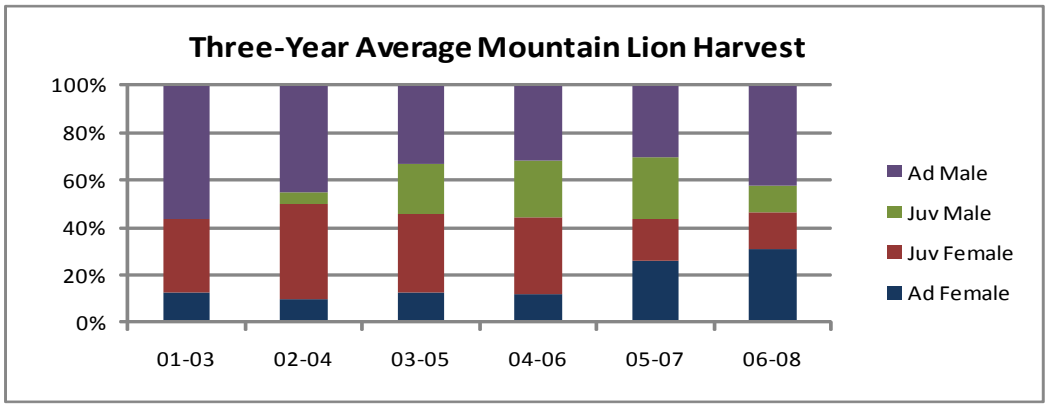


Figure 16 Snake River DAU

Bear Lake-Palisades DAU

(GMUs 64, 65, 66, 66A, 67, 75, 76, 77, 78)

Management Objectives

Specific objectives regarding sex and age composition of the harvest have not been developed for this DAU. The current Mountain Lion Management Plan states that initial harvest goals will be to maintain the harvest level on a 3-year running average at or above the 3-year average harvest for the 1990-1992 big game seasons. From 2007-2009, harvest averaged 30 lions per year. This level is 5 times higher than the 1990-1992 minimum harvest objective of 6 lions.

Historical Information

This DAU lies along the Idaho-Wyoming state line from the Teton Valley south to the Utah state line and is managed by both Upper Snake (GMUs 64, 65, 66, and 67) and Southeast (GMUs 66A, 75, 76, 77, and 78) regions. Mountain lions in this area tend to be associated with lions from the Pocatello DAU and Utah but separated from other lion populations in Idaho and Wyoming. No data exists to determine if lions in this area comprise 1 population with different concentration areas or if several different semi-isolated populations exist. Hunting seasons have ranged from closed in some GMUs to liberal with no quotas in other GMUs. GMUs 64, 65, 66, and 67 did not have a female quota for the 2004 harvest season and none of the GMUs in the DAU have had a female quota since 2005 (Appendix A).

Harvest Characteristics

Harvest has been quite variable and ranged from 12 in 1996 to 46 in 1998. Adult (≥3 years old) female harvest was 48% in 2008, 17% in 2007, 21% in 2006, 19% in 2005, and 7% in 2004. Adult female harvest has been close to or has exceeded 25% once since 2004 which, following Anderson and Lindzey's (2005) research, indicates a lion population being harvested at a level that will result in declining population density. From 2006-2008, 17% of the harvest was male lions under 2 years old, 34% was male lions 3 years and older, 20% was juvenile females, and 30% was adult female. There was one male lion aged 8 years or older (similar to the 2 previous reporting periods), possibly indicating a lion population being harvested at a level that will result in a declining lion density.

From 2000 to 2008, 9% of the harvest has come from GMU 64, 5% from GMU 65, 10% from GMU 66, 2% from GMU 66A, 18% from GMU 67, 13% from GMU 75, 26% from GMU 76, 12% from GMU 77, and 4% from GMU 78.

During the 2007-2009 seasons, an average of 69% of successful mountain lion hunters used hounds and 16% of take was incidental.

Management Implications

GMUs within this DAU are managed by Upper Snake and Southeast regions and were previously parts of other DAUs. Consequently, hunting seasons have varied from area to area and from year to year. However, in 2005, GMUs within this DAU had the same lion season with no female quotas. It is desirable to maintain the same season for all GMUs within the DAU for 3 or more years to determine what direction the lion population(s) within the DAU is going.

There is a need to monitor more closely the percent adult females harvested. Anderson and Lindzey (2005) found that when the adult (≥3-year-old) female harvest averaged 25% or greater, the lion population declined. If their research results are correct, we could see a decline in the lion population that may be reflected in a decline in harvest.

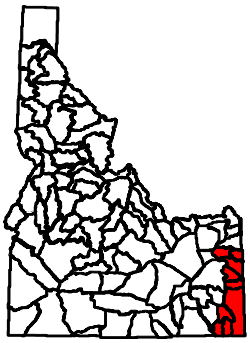
Literature Cited

Anderson, C. R. Jr., and F. G. Lindzey. 2005. Experimental evaluation of population trend and harvest composition in a Wyoming cougar population. Wildlife Society Bulletin 33(1):179-188.

Bear Lake-Palisades DAU (GMUs 64, 65, 66, 66A, 67, 75, 76, 77, 78)

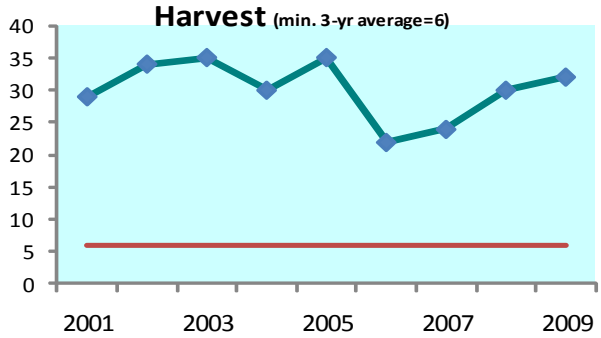
2009 Season

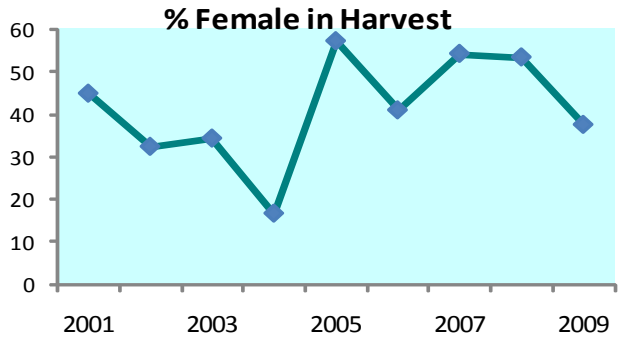
Criterion	Goal	Current status
Min 3-yr average harvest	6	30
Sex/age composition	TBD	
% males ≥3 yrs	TBD	
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	6	15	8	10	5	8	7	9	
Subadult male	6	6	11	14	9	5	4	3	
Male - no age	4	2	4	1	1	0	0	2	20
Male subtotal	16	23	23	25	15	13	11	14	20
Adult female	5	8	8	2	6	4	4	13	
Subadult female	4	2	4	2	12	3	9	2	
Female - no age	4	1	0	1	2	2	0	1	12
Female subtotal	13	11	12	5	20	9	13	16	12
Unknown sex	0	0	0	0	0	0	0	0	
Total	**29**	**34**	**35**	**30**	**35**	**22**	**24**	**30**	**32**





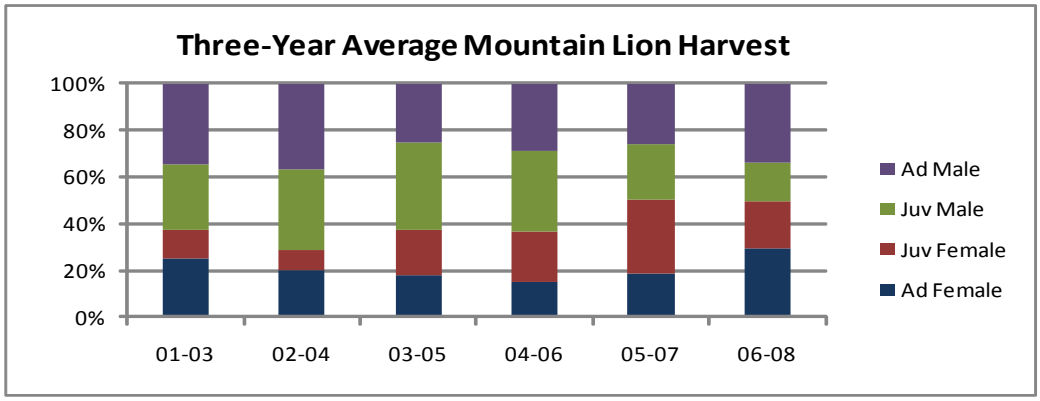


Figure 17 Bear Lake Palisades DAU

PROGRESS REPORT
SURVEYS AND INVENTORIES

STATE:	Idaho	**JOB TITLE:**	Mountain Lion Surveys and Inventories
PROJECT:	W-170-R-34		
SUBPROJECT:	7	**STUDY NAME:**	Big Game Population Status, Trends, Use, and Associated Habitat Studies
STUDY:	I		
JOB:	8		

PERIOD COVERED: July 1, 2009 to June 30, 2010

SALMON REGION

Abstract

Hunters harvested 201 mountain lions (118 males, 83 females) in 2 DAUs reported by Salmon Region (Salmon and Borah) during the past 5 seasons. Forty-two mountain lions (38% females) were harvested in these DAUs during the 2009 season. In Salmon and Borah DAUs, 69% of mountain lions were taken using hounds.

Average annual mountain lion harvest from Salmon and Borah DAUs increased through the late 1990s to slightly >50, more than tripling from 1970s levels. Increased harvest probably reflected mountain lion population increases as a result of prey (primarily elk) population increases. In contrast, harvest during the last 3 seasons ranged from 34 to 50 animals. Weather certainly influenced tracking conditions and harvest during the last 3 years, but total harvest has fallen compared to the peak years of the late 1990s for the Salmon DAU. Cursory evaluation of age composition of harvested animals (based on cementum annuli rather than tooth drop) suggests average age has been relatively stable. In some analysis areas, human harvest may be contributing to changes in population characteristics. Gray wolves, now established in several GMUs, may also be contributing to changes in mountain lion demographics.

Climatic Conditions

Rainfall during summer months in 2009 was above average, with some cool, moist weather during spring and early summer. Vegetative growth appeared well above average. Winter conditions were generally moderate, with normal temperatures and below normal precipitation. In general, prey animals (i.e., deer and elk) should have entered winter in above average body condition, and then encountered a mild winter, which should have produced moderate to high over-winter survival for adults. Snow-pack (as measured at higher elevations) was approximately 69% of average by late winter. Onset of spring weather and associated plant phenology was later than normal in 2010. Water-year precipitation through June 2010 has been approximately 90% of average at both higher elevations (Snotel sites) and low elevations (Salmon weather station). Spring and early summer conditions in 2010 were cool and wetter than average.

Depredations

There were 2 mountain lion depredations reported in Salmon Region during 2009.

Salmon DAU (GMUs 21, 21A, 28, 36B)

Management Objectives

Follow statewide management direction in the 2002-2010 Mountain Lion Management Plan. Objectives are to maintain distribution of mountain lions and maintain harvest at or above 1990-1992 levels. Specific objectives regarding sex and age composition of the harvest will be developed in the near future (e.g., ≤40% females in the harvest, ≥20% of males ≥5 years old).

Historical Information

Salmon DAU is comprised primarily of drainages west of the upper Salmon River. Elevations vary from 3,000 to 11,000 feet and include sagebrush grasslands, river breaks, mixed conifer forests, and sub-alpine habitats.

The DAU supports mountain lion populations that are generally accessible during winter. Both deer and elk are abundant prey species with bighorn sheep and mountain goats locally common. Salmon DAU mountain lion populations are likely partly sustained by immigration from adjacent, less-hunted wilderness populations (e.g., Warren DAU). During 1995 and 1996, wolves were reintroduced in Salmon and Warren DAUs. At least 10 wolf packs frequent Salmon DAU and additional wolf activity is suspected. Depredation problems are not a major concern in Salmon DAU.

Season Structure

During 1996-1997, the general mountain lion season in Salmon DAU was extended by 15 days from 31 January to 15 February. The 1999-2000 season was extended by another 61 days (30 Aug to 31 Mar) because of an apparent continued increase in mountain lion populations. With 17 days added to the beginning and 44 days at the end, total season length became 214 days. This season structure remained the same in 2009 (Appendix A). In general, dogs may be used when a firearm season for deer or elk is not open. Neither spotted young nor female mountain lions accompanied by young may be taken. There were no dog-training seasons in Salmon DAU GMUs.

Harvest Characteristics

Harvest fell to a 10-year low of 18 animals in 2004 and increased to 33 in 2007 and 2009. Average harvest for these GMUs increased from approximately 11 mountain lions per year in the 1970s to nearly 18 during the 1980s and 31 per year in the 1990s. Harvest has dropped to an average of 25 mountain lions per year since 2000.

During the 2009 season**,** 67% of mountain lions harvested in Salmon DAU were taken with assistance of hounds and 33% were taken incidentally to other hunting. Two lions were killed as a result of depredations or conflicts with humans.

Sex Ratio

During 2009, 12 of 33 (34%) mountain lions harvested were females. Over the longer term, females comprised 38% of the harvest (34 of 90) during the 3 most recent seasons (2007-2009).

Age Structure

Of known-age animals (n = 170) harvested since 2001 (year in which we began acquiring cementum annuli data), 56% were adults (≥3 years old). Sex and age structure of harvested mountain lions has not fluctuated significantly over the last 3 seasons. Of known-age mountain lions (n = 102), 22% were females ≥3 years old across the last 5 years.

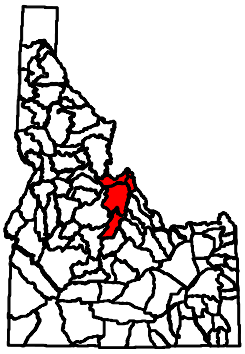
Management Implications

Following initiation of mandatory checking in 1973, mountain lion harvest in Salmon DAU increased to a peak in the mid 1990s and has since declined. Increased harvest probably reflected mountain lion population increases as a result of prey (primarily elk) population increases. Adults comprised 68% of harvested lions during the 2006-2008 seasons; 3 males ≥8 years were harvested. Percent females in the harvest is within the previous goal of ≤40% based on the last 3 years and appears to be stable, or slightly increasing. Reintroduced gray wolves likely have some impact on mountain lion populations, at least on a local level.

Salmon Zone DAU (GMUs 21, 21A, 28, 36B)

2009 Season

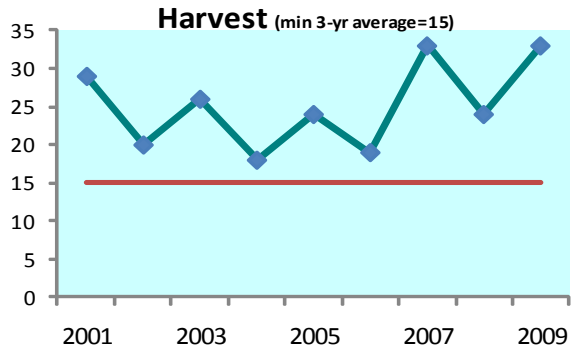
Criterion	Goal	Current status
Min 3-yr average harvest	15	30
Sex-age composition	TBD	
% males ≥3 yrs	TBD	38%
Catch/unit effort	TBD	No data

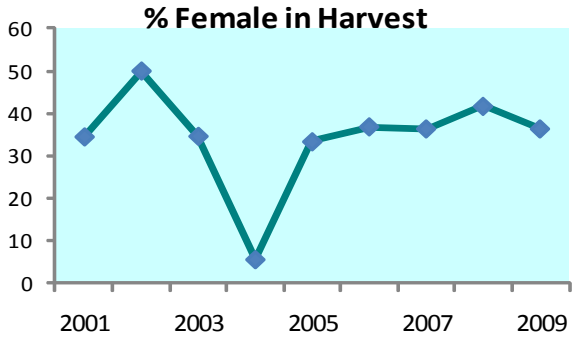


Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	12	6	13	7	7	6	11	9	
Subadult male	5	3	3	9	6	4	6	5	
Male no age	2	1	1	1	3	2	4	0	21
Male subtotal	19	10	17	17	16	12	21	14	21
Adult female	7	4	4	0	4	4	8	6	
Subadult female	3	3	5	1	3	1	3	2	
Female no age	0	3	0	0	1	2	1	2	12
Female subtotal	10	10	9	1	8	7	12	10	12
Unknown sex	0	0	0	0	0	0	0	0	
Total	**29**	**20**	**26**	**18**	**24**	**19**	**33**	**24**	**33**

*Subtotal may be higher than sum because of unknown ages





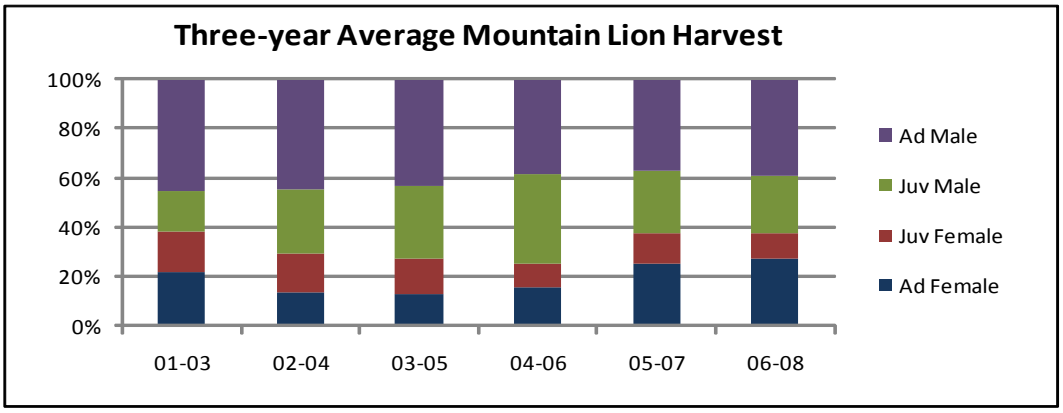


Figure 18 Salmon DAU

Borah DAU (GMUs 29, 30, 30A, 37, 37A, 51, 58, 59, 59A)

Management Objectives

Follow statewide management direction in the 2002-2010 Mountain Lion Management Plan. Objectives are to maintain distribution of mountain lions and maintain harvest at or above 1990-1992 levels. Specific objectives regarding sex and age composition of harvested mountain lions will be developed in the near future (e.g., ≤40% females in the harvest, ≥20% of males ≥5 years old).

Historical Information

Borah DAU is comprised primarily of drainages east of the upper Salmon River and drainages from the Little Lost River east to I-15. Elevations vary from 4,000 feet to 12,000 feet and include high desert communities, mixed conifer forests, and sub-alpine habitats. This DAU receives much less precipitation, and therefore has less forest, than DAUs farther north and west. Borah DAU supports a mountain lion population of low to moderate density that is generally readily accessible during winter. Both deer and elk are common prey species with bighorn sheep and mountain goats locally common. Depredation problems are an uncommon concern in the Borah DAU.

Season Structure

During 1996-1997, the general mountain lion season was extended from 31 January to 15 February in northern GMUs and to 31 March in southern GMUs. During 1999-2000, seasons throughout the DAU were extended to 30 August through 31 March (214 days) because of an apparent continued increase in mountain lion populations, to provide additional opportunity, and to allow archers to harvest mountain lions during standard deer and elk seasons. This season structure remained the same in 2009 (Appendix A). Female quotas were removed in southern GMUs starting fall 2003. There were no quotas or dog-training seasons in northern GMUs within the DAU. In general, dogs may be used when firearm seasons for deer or elk are not open. Neither spotted young nor female mountain lions accompanied by young may be taken.

Harvest Characteristics

Harvest of 9 mountain lions in 2009 was lower than the 5-year average (2004-2008) harvest of 15. Harvest for these GMUs increased gradually through the 1990s, but appears to have declined in recent years.

During the 2007-2009 seasons, 77% of mountain lions harvested in Borah DAU were taken with assistance of hounds; the remainder were taken incidentally to other hunting (11%), via still hunting/stalking (6%), or unknown method of take (6%).

Sex Ratio

During the 2009 season, 4 of 9 mountain lions harvested were females. Over the longer term, females comprised 49% of the harvest (17 of 35) during the 3 most recent seasons (2007-2009).

Age Structure

Of known-age animals (n = 105) harvested since 2001 (year in which we began acquiring cementum annuli data), 63% were adults. Sex and age structure of harvested mountain lions fluctuated significantly through this timeframe, in part due to low annual sample size. Thirteen of 19 known-age males were ≥3 years old across the last 3 seasons (2006-2008). Percent adult females in the harvest has been increasing since 2001.

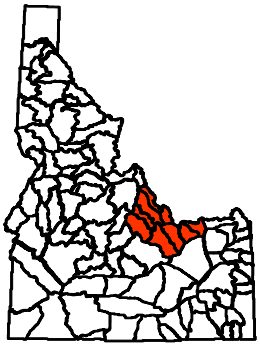
Management Implications

Annual mountain lion harvest in Borah DAU increased gradually through the 1970s to 1990s and currently appears to be declining. Increased harvest probably reflected mountain lion population increases as a result of prey (primarily elk) population increases. Sex composition of harvested animals in Borah DAU suggests that harvest rate may be high. Female harvest from 2004 to 2009 was relatively high, and the proportion of older-age mountain lions in the harvest has been low since 1999. No known-age males ≥8 years have been harvested in the Borah DAU since 2001. Percent females in the harvest was 49% from 2007 to 2009**,** which is above the previous goal of ≤40%. Both percent adult females and percent of total females in the harvest have been increasing since 2001. Monitoring trends in harvest rate and sex-age composition is a high priority. Expansion of gray wolves into parts of Borah DAU may have some impact on local mountain lion populations.

Borah Zone DAU (GMUs 29, 30, 30A, 37, 37A, 51, 58, 59, 59A)

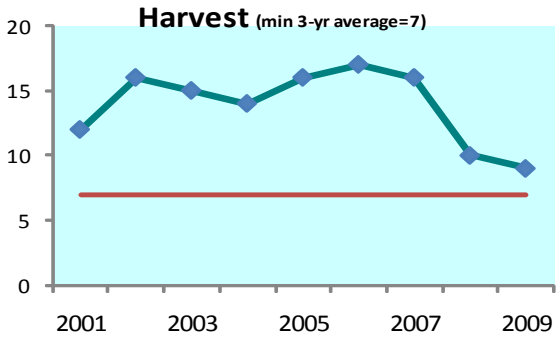
2009 Season

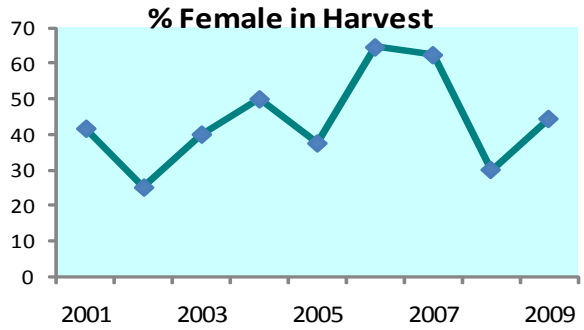
Criterion	Goal	Current status
Min 3-yr average harvest	7	12
Sex-age composition	TBD	
% males ≥3 yrs	TBD	60%
Catch/unit effort	TBD	No data



Harvest Statistics

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adult male	1	7	8	4	6	5	2	6	
Subadult male	5	4	1	2	4	1	4	1	
Male no age	1	1	0	1	0	0	0	0	5
Male subtotal	7	12	9	7	10	6	6	7	5
Adult female	1	2	4	2	4	5	7	2	
Subadult female	3	1	1	3	2	6	1	0	
Female no age	1	1	1	2	0	0	2	1	4
Female subtotal	5	4	6	7	6	11	10	3	4
Unknown sex	0	0	0	0	0	0	0	0	
Total	**12**	**16**	**15**	**14**	**16**	**17**	**16**	**10**	**9**





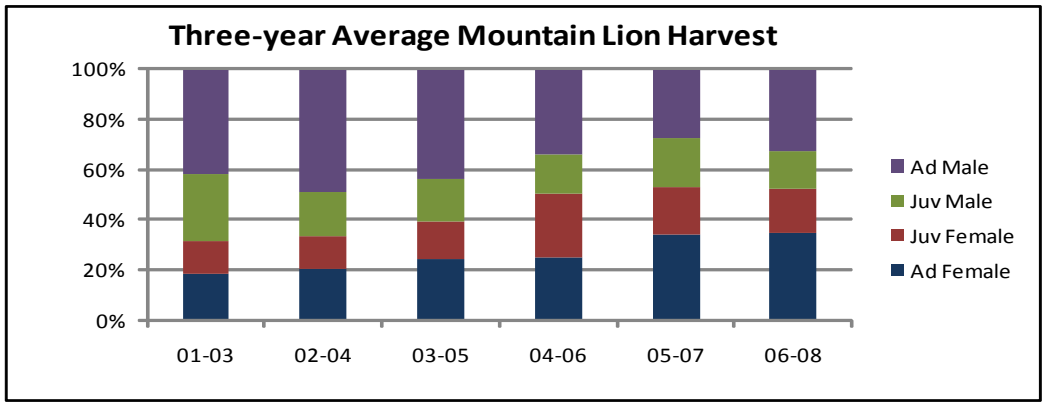


Figure 19. Borah DAU

APPENDIX A

IDAHO

2009 SEASON

MOUNTAIN LION RULES

Idaho
Big Game
Seasons and Rules
2009

Idaho Fish and Game photo

Deer, Elk, Pronghorn
August 2009 - January 2010

Black Bear, Mountain Lion
August 2009 - July 2010

Including Controlled Hunts for
Deer, Elk, Pronghorn, and Black Bear

2009-2010 Mountain Lion Hunting Seasons

General Rules

Female With Young: Neither spotted mountain lion young nor female mountain lions accompanied by young may be taken.

Evidence of Sex: Must be left attached to the hide of any mountain lion taken. For mountain lion, external evidence of sex (either scrotum, penis, or testicles for males, or vulva for females) must be left naturally attached to the hide until the mandatory check requirement has been satisfied.

Bag Limit: No person may take more mountain lions than he or she has legal tags for.

Mandatory Check and Report: Any hunter killing a mountain lion must, ***within 10 days of the date of kill (Note: where there is a female quota, hunters must report within 5 days):***

- Present the skull and hide to an Idaho Fish and Game conservation officer, regional office or other official checkpoint for removal and retention of a premolar tooth and to have the hide tagged with an official state export tag. No person shall have, **except** during the open season and for 10 days after the close of the season, any raw mountain lion pelt that does not have an official state export tag attached (either Idaho's or another state's official export tag).
- A hunter may authorize another person to comply with the above requirements if that person possesses enough information to accurately complete the necessary form.
- **Please thaw your mountain lion hide and skull before bringing it in for tagging. Staff members may not be able to check a frozen hide or skull.**

Fish and Game's headquarters office is not equipped to check mountain lions. In the Boise area, these animals can be checked at the Fish and Game regional office in Nampa (3101 S. Powerline Rd, 208-465-8465) between the hours of 8 a.m. and 5 p.m. or by appointment at the Garden City facility, 109 W. 44th St., 208-327-7099.

Capturing Mountain Lions: No person may trap, snare or otherwise capture or hold any mountain lion.

Big Game Feeding Sites: It is unlawful to hunt or pursue mountain lions within 1/2 mile of any active Fish and Game big game feeding site.

Female Mountain Lion Quota

To find out whether the quota on female mountain lions has been met and the season has been closed in a particular management unit, call 1-800-323-4334. For more specific information about the number of female lions harvested and reported for each management unit, call a Fish and Game regional office or the headquarters office in Boise. (See page 5, or http://fishandgame.idaho.gov.)

Hound Hunting

Anyone hunting with hounds, unless hunting with an outfitter, must have a hound hunter permit. (Please see section on hound hunting rules on page 66.)

Special Tags

Second tags:

Second tags issued for mountain lions may be used only in that portion of Unit 16 north of the Selway River and all of Units 16A, 17, 19, 20, 20A, 26, and 27. Nonresident mountain lion tags used in these units are available for $31.75.

Nonresident Deer Tag Used for Black Bear or Mountain Lion

(Please see page 74.)

Nonresident Reduced Mountain Lion Tags

(Please see page 74.)

Idaho Fish and Game photo

MOUNTAIN LION

Winter 2009 - 2010 Mountain Lion Seasons				
Units	**Take Season**	**Dogs Prohibited**	**Female Quota**	**Notes**
1	Sep 15 - Feb 16	Sep 15 - Dec 13		*Dog training season open Feb 17 - Mar 31.*
2, 3, 4A, 5, 6	Sep 15 - Feb 16	Oct 10 - Dec 13		*Dog training season open Feb 17 - Mar 31.*
4, 7, 9	Sep 15 - Feb 16	Oct 10 - Nov 21		*Dog training season open Feb 17 - Mar 31.*
8	Aug 30 - Mar 31	Oct 10 - Dec 1		
8A	Aug 30 - Mar 31	Aug 30 - Sep 14 Oct 10 - Dec 1		
10, 12	Aug 30 - Mar 31	Oct 10 - Oct 31		
10A	Aug 30 - Mar 31	Aug 30 - Sep 14 Oct 10 - Nov 20		
11, 11A, 14, 15, 18	Aug 30 - Mar 31	Oct 10 - Nov 20		
13	Aug 30 - Mar 31	Oct 10 - Nov 3		
16	Aug 30 - Mar 31	Oct 10 - Nov 20		*North of Selway River: 2 lion bag limit* *Remainder of unit:1 lion bag limit*
16A, 17 19, 20	Aug 30 - Mar 31	Sep 15 - Oct 31		*2 lion bag limit*
19A	Aug 30 - Mar 31	Oct 1 - Nov 24		
20A, 26, 27	Aug 30 - Apr 30	Sep 15 - Oct 31		*2 lion bag limit*
21, 21A, 28, 36B	Aug 30 - Mar 31	Oct 10 - Nov 8		
22	Aug 30 - Mar 31	Aug 30 - Nov 24	6	*See note 1, Page 61*
23	Aug 30 - Mar 31	Oct 1 - Nov 24	8	*See note 1, Page 61*
24	Aug 30 - Mar 31	Oct 5 - Nov 24	5	*See note 1, Page 61*
25	Aug 30 - Mar 31	Oct 5 - Nov 24	8	*See note 1, Page 61*
29, 30, 30A, 36A, 37, 37A	Aug 30 - Mar 31	Oct 1 - Nov 24		*Motorized Vehicle Restriction,* *See note 3, Page 61*
31	Aug 30 - Mar 31	Aug 30 - Nov 24	3	*See note 1, Page 61*
32	Aug 30 - Mar 31	Aug 30 - Nov 24	6	*Motorized Vehicle Restriction,* *See notes 1 & 3, Page 61*
32A	Aug 30 - Mar 31	Aug 30 - Nov 3 Nov 10 - Nov 24	5	*Motorized Vehicle Restriction,* *See notes 1 & 3, Page 61*
33, 34, 35	Aug 30 - Mar 31	Oct 5 - Nov 8	15	*See note 1, Page 61*
36	Aug 30 - Mar 31	Oct 5 - Nov 8		
38	Aug 30 - Mar 31	Oct 5 - Nov 30		
39	Aug 30 - Mar 31	Oct 5 - Nov 9	10	*See note 1, Page 61*
40	Aug 30 - Mar 31	Oct 5 - Nov 24	10	*See note 1, Page 61*
41, 42	Aug 30 - Jun 30	Oct 5 - Nov 24		*Electronic calls may be used*
43, 44, 48, 49	Aug 30 - Mar 31	Oct 1 - Nov 30	6	*See note 2, Page 61, Motorized Vehicle Restriction in Units 48 & 49, See note 3, Page 61*

(continued)

Winter 2009 - 2010 Mountain Lion Seasons - Continued				
Units	**Take Season**	**Dogs Prohibited**	**Female Quota**	**Notes**
45, 50, 51, 52, 52A, 53, 58, 59, 59A	Aug 30 - Mar 31	Oct 1 - Nov 30		*Motorized Vehicle Restriction in Units 45, 50, 51, 52, 53, 58, 59 & 59A, See note 3, Page 61*
46, 47	Aug 30 - Mar 31	Oct 1 - Nov 30	6	*See note 2, Page 61, Motorized Vehicle Restriction Unit 47, See note 3, Page 61*
54	Aug 30 - Mar 31	Oct 1 - Nov 30	6	*See note 2, Page 61*
55	Aug 30 - Mar 31	Oct 1 - Nov 30	6	*See note 2, Page 61*
56, 57, 60, 60A, 61, 62, 62A, 63, 63A, 64 ,65, 66, 66A, 67, 68, 68A, 69, 70, 71, 72, 73, 73A, 74, 75, 76, 77, 78	Aug 30 - Mar 31	Oct 1 - Nov 30		*Motorized Vehicle Restriction in Units 56, 57, 66, 69, 70, 73, 75, 77 & 78, See note 3, Page 61*

Notes:

1. The take season in this/these unit(s) will remain open for either sex until the female quota is reached or the take season ends. After the female quota has been reached, the take season in this/these unit(s) will remain open for males only.
2. The take season in this/these unit(s) will remain open until the female quota is reached, or the take season ends, whichever comes first. For these units, a dog training season opens upon the closure of the unit to harvest where a harvest quota is met. If opened, the training season in any of these units shall close March 31.
3. Motorized vehicle use as an aid to hunting for mountain lion is restricted **August 30 through December 31** to established roadways open to motorized vehicle traffic capable of travel by full-sized automobiles – any motorized vehicle with a gross vehicle weight in excess of 1,500 pounds. See Page 68.

Submitted by:

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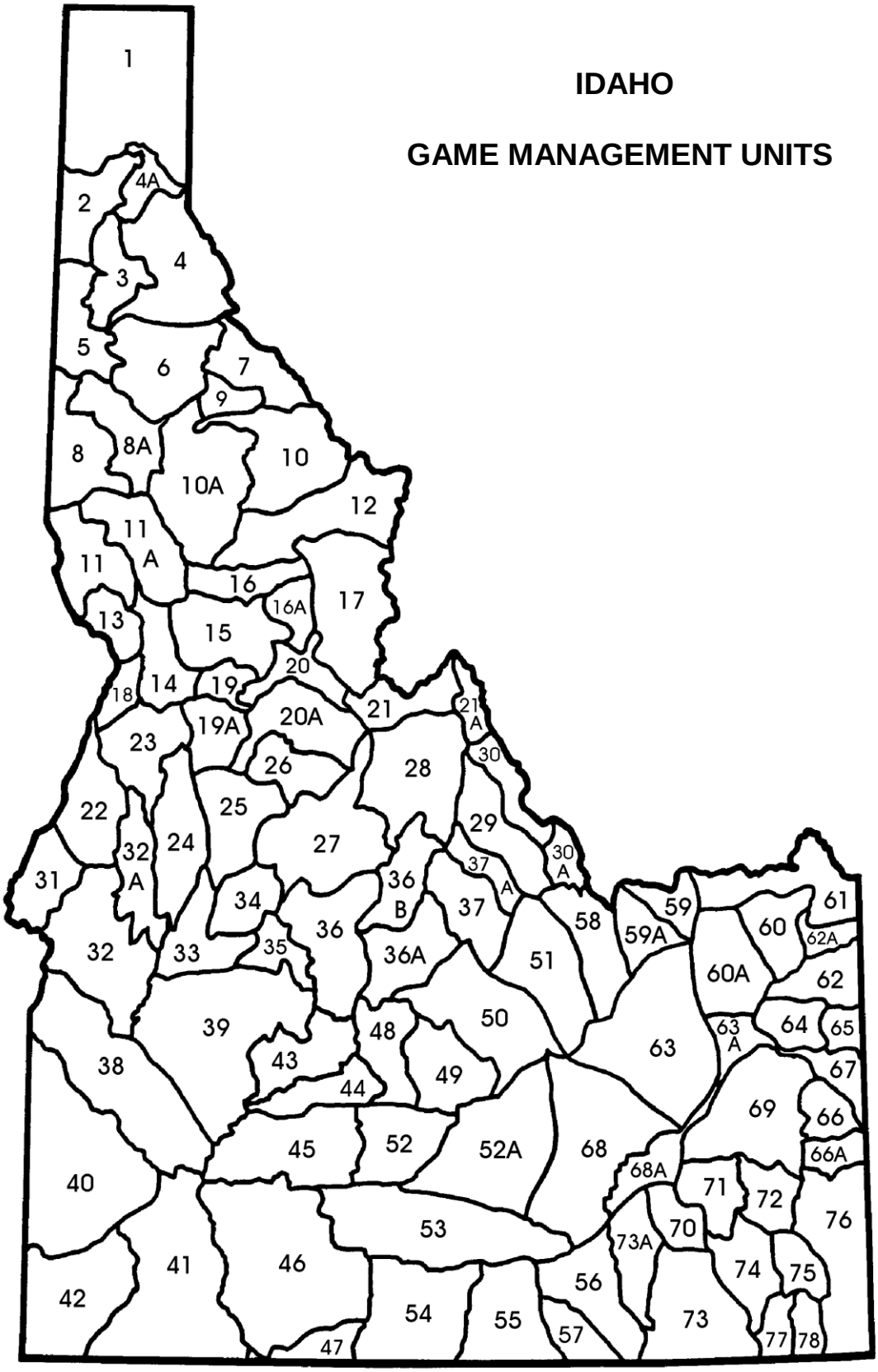
Randy Smith Regional Wildlife Manager	Toby Boudreau Regional Wildlife Manager	Daryl Meints Regional Wildlife Manager
Tom Keegan Regional Wildlife Manager		

Approved by: IDAHO DEPARTMENT OF FISH AND GAME

Brad Compton, Asst. Chief Bureau of Wildlife	Jeff Gould, Chief Bureau of Wildlife

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.