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**Progress Report**



**MOUNTAIN LION**

Study I, Job 8

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## TABLE OF CONTENTS

STATEWIDE.....	1
ABSTRACT.....	1
PANHANDLE REGION .....	6
ABSTRACT.....	6
PANHANDLE DAU (GMUS 1, 2, 3, 4, 4A, 5, 6, 7, 9) .....	6
CLEARWATER REGION .....	16
ABSTRACT.....	16
LATAH DAU (GMUS 8, 11A) .....	17
PALOUSE-DWORSHAK DAU (GMUS 8A, 10A) .....	18
LOLO DAU (GMUS 10, 12).....	19
HELLS CANYON DAU (GMUS 11, 13, 18).....	20
ELK CITY DAU (GMUS 14, 15, 16).....	22
SELWAY DAU (GMUS 16A, 17, 19, 20).....	23
LITERATURE CITED .....	24
SOUTHWEST REGION .....	47
ABSTRACT.....	47
WARREN DAU (GMUS 19A, 20A, 25, 26, 27) .....	47
MCCALL DAU (GMUS 22, 23 24, 31, 32A) .....	49
BOISE-STANLEY DAU (GMUS 32, 33, 34, 35, 36, 39).....	50
OWYHEE DAU (GMUS 40, 41, 42, 46, 47) .....	52
MAGIC VALLEY REGION .....	72
ABSTRACT.....	72
SUN VALLEY DAU (GMUS 36A, 43, 44, 48, 49, 50).....	73
OAKLEY DAU (GMUS 54, 55, 56, 57) .....	74
SOUTHEAST REGION .....	85
ABSTRACT.....	85
POCATELLO DAU (GMUS 69, 70, 71, 72, 73, 73A, 74) .....	85
UPPER SNAKE REGION.....	93
ABSTRACT.....	93
(GMUS 50, 51, 58, 59, 59A, 60, 60A, 61, 62, 62A, 63, 63A, 64, 65, 66, 67, 69).....	93

**TABLE OF CONTENTS (Continued)**

SNAKE RIVER DAU (GMUS 38, 45, 52, 52A, 53, 60, 60A, 61, 62, 62A, 63, 63A, 68, 68A) .....95

BEAR LAKE-PALISADES DAU (GMUS 64, 65, 66, 66A, 67, 75, 76, 77, 78).....96

LITERATURE CITED .....97

SALMON REGION.....107

    ABSTRACT.....107

    SALMON DAU (GMUS 21, 21A, 28, 36B) .....108

    BORAH DAU (GMUS 29, 30, 30A, 37, 37A, 51, 58, 59, 59A) .....109

APPENDIX A.....121

**LIST OF TABLES**

STATEWIDE

Table 1. Mountain lion depredations by region, 1997-2005.....5

PANHANDLE REGION

Table 1. Mountain lion plan harvest objectives, Panhandle Region, 2002-2005. ....10

Table 2. Mountain lion harvest by DAU, Panhandle Region, 1997-2005.....10

Table 3. Mountain lion harvest by weapon and sex, Panhandle DAU, Panhandle Region, 1996-2005. ....11

CLEARWATER REGION

Table 1. Mountain lion plan harvest objectives, Clearwater Region, 2002-2004.....25

Table 2. Mountain lion harvest by DAU, Clearwater Region, 1997-2005.....26

Table 3. Mountain lion harvest by weapon and sex, Clearwater Region, 2000-2005. ....27

SOUTHWEST REGION

Table 1. Mountain lion plan harvest objectives, Southwest Region, 2002-2004. ....55

Table 2. Mountain lion harvest by DAU, Southwest Region, 1997-2005.....56

Table 3. Mountain lion harvest by weapon and sex, Southwest Region, 1999-2005.....57

MAGIC VALLEY REGION

Table 1. Mountain lion plan harvest objectives, Magic Valley Region, 2002-2004. ....76

**TABLE OF CONTENTS (Continued)**

Table 2. Mountain lion harvest by DAU, Magic Valley Region, 1997-2005.....76  
Table 3. Mountain lion harvest by weapon and sex, Magic Valley Region, 1996-2005.....77

**SOUTHEAST REGION**

Table 1. Mountain lion plan harvest objectives, Southeast Region, 2002-2004.....88  
Table 2. Mountain lion harvest by weapon and sex, Pocatello DAU, Southeast Region, 1999-2005. ....88  
Table 3. Mountain lion harvest by DAU, Southeast Region, 1997-2005.....89

**UPPER SNAKE REGION**

Table 1. Mountain lion harvest by DAU, Upper Snake Region, 1997-2005.....98  
Table 2. Mountain lion plan harvest objectives, Upper Snake Region, 2002-2004. ....99  
Table 3. Mountain lion harvest by weapon and sex, Upper Snake Region, 1999-2004.....100

**SALMON REGION**

Table 1. Mountain lion plan harvest objectives, Salmon Region, 2002-2004.....112  
Table 2. Mountain lion harvest by DAU, Salmon Region, 1997-2005. ....113  
Table 3. Mountain lion harvest by weapon and sex, Salmon Region, 1998-2004. ....114

**LIST OF FIGURES**

**STATEWIDE**

Figure 1. Statewide Mountain Lion Management Zones (DAUs).....3  
Figure 2. Statewide mountain lion harvest, 1982-present.....4

**PANHANDLE REGION**

Figure 1. Mountain lion harvest, Panhandle DAU, Panhandle Region, 1996-2005.....12  
Figure 2. Harvest by method, Panhandle DAU, Panhandle Region, 2003-2005.....12  
Figure 3. Harvest by sex, Panhandle DAU, Panhandle Region, 1996-2005. ....13  
Figure 4. Sex and age composition of harvest, Panhandle DAU, Panhandle Region, 2002-2004.....14  
Figure 5. Average age composition of male harvest, Panhandle DAU, Panhandle Region, 2002-2004. ....15

**TABLE OF CONTENTS (Continued)**

**CLEARWATER REGION**

Figure 1. Mountain lion harvest, Latah DAU, Clearwater Region, 1996-2005.....29

Figure 2. Harvest by method, Latah DAU, Clearwater Region, 2003-2005. ....29

Figure 3. Sex and age composition of harvest, Latah DAU, Clearwater Region, 2002-2004.....30

Figure 4. Average age composition of male harvest, Latah DAU, Clearwater Region, 2002-2004. ....31

Figure 5. Harvest by sex, Latah DAU, Clearwater Region, 1996-2005. ....31

Figure 6. Mountain lion harvest, Palouse-Dworshak DAU, Clearwater Region, 1996-2005. ....32

Figure 7. Harvest by method, Palouse-Dworshak DAU, Clearwater Region, 2003-2005. ....32

Figure 8. Sex and age composition of harvest, Palouse-Dworshak DAU, Clearwater Region, 2002-2004.....33

Figure 9. Average age composition of male harvest, Palouse-Dworshak DAU, Clearwater Region, 2002-2004.....34

Figure 10. Harvest by sex, Palouse-Dworshak DAU, Clearwater Region, 1996-2005. ....34

Figure 11. Mountain lion harvest, Lolo DAU, Clearwater Region, 1996-2005. ....35

Figure 12. Harvest by method, Lolo DAU, Clearwater Region, 2003-2005. ....35

Figure 13. Sex and age composition of harvest, Lolo DAU, Clearwater Region, 2002-2004.....36

Figure 14. Average age composition of male harvest, Lolo DAU, Clearwater Region, 2002-2004. ....37

Figure 15. Harvest by sex, Lolo DAU, Clearwater Region, 1996-2005.....37

Figure 16. Mountain lion harvest, Hells Canyon DAU, Clearwater Region, 1996-2005.....38

Figure 17. Harvest by method, Hells Canyon DAU, Clearwater Region, 2003-2005.....38

Figure 18. Sex and age composition of harvest, Hells Canyon DAU, Clearwater Region, 2002-2004. ....39

Figure 19. Average age composition of male harvest, Hells Canyon DAU, Clearwater Region, 2002-2004.....40

Figure 20. Harvest by sex, Hells Canyon DAU, Clearwater Region, 1996-2005. ....40

Figure 21. Mountain lion harvest, Elk City DAU, Clearwater Region, 1996-2005. ....41

Figure 22. Harvest by method, Elk City DAU, Clearwater Region, 2003-2005. ....41

Figure 23. Sex and age composition of harvest, Elk City DAU, Clearwater Region, 2002-2004.....42

**TABLE OF CONTENTS (Continued)**

Figure 24. Average age composition of male harvest, Elk City DAU, Clearwater Region, 2002-2004. ....43

Figure 25. Harvest by sex, Elk City DAU, Clearwater Region, 1996-2005.....43

Figure 26. Mountain lion harvest, Selway DAU, Clearwater Region, 1996-2005.....44

Figure 27. Harvest by method, Selway DAU, Clearwater Region, 2003-2005.....44

Figure 28. Sex and age composition of harvest, Selway DAU, Clearwater Region, 2002-2004.....45

Figure 29. Average age composition of male harvest, Selway DAU, Clearwater Region, 2002-2004. ....46

Figure 30. Harvest by sex, Selway DAU, Clearwater Region, 1996-2005. ....46

**SOUTHWEST REGION**

Figure 1. Mountain lion harvest, Warren DAU, Southwest Region, 1996-2005.....59

Figure 2. Sex and age composition of harvest, Warren DAU, Southwest Region, 2002-2004.....60

Figure 3. Average age composition of male harvest, Warren DAU, Southwest Region, 2002-2004. ....61

Figure 4. Harvest by method, Warren DAU, Southwest Region, 2003-2005. ....61

Figure 5. Harvest by sex, Warren DAU, Southwest Region, 1996-2005. ....62

Figure 6. Mountain lion harvest, McCall DAU, Southwest Region, 1996-2005.....62

Figure 7. Sex and age composition of harvest, McCall DAU, Southwest Region, 2002-2004.....63

Figure 8. Average age composition of male harvest, McCall DAU, Southwest Region, 2002-2004. ....64

Figure 9. Harvest by method, McCall DAU, Southwest Region, 2003-2005. ....64

Figure 10. Harvest by sex, McCall DAU, Southwest Region, 1996-2005. ....65

Figure 11. Mountain lion harvest, Boise-Stanley DAU, Southwest Region, 1996-2005. ....65

Figure 12. Harvest by sex, Boise-Stanley DAU, Southwest Region, 1996-2005.....66

Figure 13. Harvest by method, Boise Stanley DAU, Southwest Region, 2003-2005. ....66

Figure 14. Sex and age composition of harvest, Boise-Stanley DAU, Southwest Region, 2002-2004. ....67

Figure 15. Average age composition of male harvest, Boise-Stanley DAU, Southwest Region, 2002-2004.....68

Figure 16. Mountain lion harvest, Owyhee DAU, Southwest Region, 1996-2005. ....68

## TABLE OF CONTENTS (Continued)

Figure 17. Harvest by sex, Owyhee DAU, Southwest Region, 1996-2005.....	69
Figure 18. Harvest by method, Owyhee DAU, Southwest Region, 2003-2005.....	69
Figure 19. Sex and age composition of harvest, Owyhee DAU, Southwest Region, 2002-2004.....	70
Figure 20. Average age composition of male harvest, Owyhee DAU, Southwest Region, 2002-2004.....	71

### MAGIC VALLEY REGION

Figure 1. Mountain lion harvest, Sun Valley DAU, Magic Valley Region, 1996-2005. ....	78
Figure 2. Sex and age composition of harvest, Sun Valley DAU, Magic Valley Region, 2002-2004.....	79
Figure 3. Average age composition of male harvest, Sun Valley DAU, Magic Valley Region, 2002-2004.....	80
Figure 4. Harvest by method, Sun Valley DAU, Magic Valley Region, 2003-2005. ....	80
Figure 5. Harvest by sex, Sun Valley DAU, Magic Valley Region, 1996-2005.....	81
Figure 6. Mountain lion harvest, Oakley DAU, Magic Valley Region, 1996-2005.....	81
Figure 7. Sex and age composition of harvest, Oakley DAU, Magic Valley Region, 2002-2004.....	82
Figure 8. Average age composition of male harvest, Oakley DAU, Magic Valley Region, 2002-2004.....	83
Figure 9. Harvest by method, Oakley DAU, Magic Valley Region, 2003-2005.....	83
Figure 10. Harvest by sex, Oakley DAU, Magic Valley Region, 1996-2005. ....	84

### SOUTHEAST REGION

Figure 1. Mountain lion harvest, Pocatello DAU, Southeast Region, 1996-2005.....	90
Figure 2. Harvest by sex, Pocatello DAU, Southeast Region, 1996-2005. ....	90
Figure 3. Sex and age composition of harvest, Pocatello DAU, Southeast Region, 2002-2004.....	91
Figure 4. Average age composition of male harvest, Pocatello DAU, Southeast Region, 2002-2004.....	92
Figure 5. Average harvest by method, Pocatello DAU, Southeast Region, 2003-2005.....	92

### UPPER SNAKE REGION

Figure 1. Mountain lion harvest, Snake River DAU, Upper Snake Region, 1996-2005.....	101
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**TABLE OF CONTENTS (Continued)**

Figure 2. Harvest by sex, Snake River DAU, Upper Snake Region, 1996-2005. ....101

Figure 3. Sex and age composition of harvest, Snake River DAU, Upper Snake Region, 2002-2004. ....102

Figure 4. Average age composition of male harvest, Snake River DAU, Upper Snake Region, 2002-2004.....103

Figure 5. Harvest by method, Snake River DAU, Upper Snake Region, 2003-2005.....103

Figure 6. Mountain lion harvest, Bear Lake-Palisades DAU, Upper Snake Region, 1996-2005.....104

Figure 7. Harvest by sex, Bear Lake-Palisades DAU, Upper Snake Region, 1996-2005. ....104

Figure 8. Sex and age composition of harvest, Bear Lake-Palisades DAU, Upper Snake Region, 2002-2004.....105

Figure 9. Average age composition of male harvest, Bear Lake-Palisades DAU, Upper Snake Region, 2002-2004. ....106

Figure 10. Harvest by method, Bear Lake-Palisades DAU, Upper Snake Region, 2003-2005.....106

**SALMON REGION**

Figure 1. Mountain lion harvest, Salmon DAU, Salmon Region, 1996-2005.....115

Figure 2. Harvest by method, Salmon DAU, Salmon Region, 2003-2005.....115

Figure 3. Sex and age composition of harvest, Salmon DAU, Salmon Region, 2002-2004. ....116

Figure 4. Average age composition of male harvest, Salmon DAU, Salmon Region, 2002-2004.....117

Figure 5. Harvest by sex, Salmon DAU, Salmon Region, 1996-2005. ....117

Figure 6. Mountain lion harvest, Borah DAU, Salmon Region, 1996-2005. ....118

Figure 7. Harvest by method, Borah DAU, Salmon Region, 2003-2005. ....118

Figure 8. Sex and age composition of harvest, Borah DAU, Salmon Region, 2002-2004.....119

Figure 9. Average age composition of male harvest, Borah DAU, Salmon Region, 2002-2004.....120

Figure 10. Harvest by sex, Borah DAU, Salmon Region, 1996-2005.....120

**PROGRESS REPORT  
SURVEYS AND INVENTORIES**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Mountain Lion Surveys and</u>
<b>PROJECT:</b>	<u>W-170-R-30</u>		<u>Inventories</u>
<b>SUBPROJECT:</b>	<u>1-7</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>8</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2005 to June 30, 2006</u>		

**STATEWIDE**

**Abstract**

A new Mountain Lion Management Plan was completed in 2002. The PR report format was changed to reflect the changes in the Plan. Big game management units were rearranged into 18 Data Analysis Units (DAU [Figure 1]). Objectives and analysis based on age criteria have been outlined. Tooth-pulling for aging has been required since 2001. Approximately 80% of the teeth collected are aged. Many teeth were unable to be properly aged due to broken roots or other problems. Improving age data and related management objectives is an ongoing lion management goal of the Department.

The Idaho Department of Fish and Game requires hunters to check their harvested lions at a Department office or checkpoint within 10 days of the kill date so the hide can be tagged and a tooth removed for aging.

Despite the longer and more lenient seasons (Appendix A), lion harvest has declined statewide since 1997 when 798 were harvested. Despite varying snow conditions that typically result in fluctuating harvest, lion harvest continues a downward trend, likely reflecting a declining statewide population (Figure 2). A total of 470 mountain lions were checked in 2005, which was a slight increase of 11% from the 423 lions harvested in 2004. Resident hunters and non-resident hunters harvested 321 and 102 mountain lions, respectively. Female mountain lions comprised 43% of the harvest. Hunters using guides harvested 11 lions, a 23% increase from 2004. Hunters using hounds harvested 74% of the lions, 16% were harvested incidental to some other hunting activity, still hunters took 7%, and 1% were harvested by predator calling.

In 2005, tag sales continued to increase; resident hunters purchased 21,784 mountain lion tags, up 909 from 20,875 purchased in 2004. The majority (90%) of those tags were issued as part of the resident Sportsman Package. Additionally, 40 tags valid for a second mountain lion in portions of Units 10 and 16 and all of Units 12, 16A, 17, 19, 20, 20A, 26, and 27 were also sold.

Non-residents purchased 699 mountain lion tags in 2005, 9% fewer than in 2004. Of these, 261 were regular tags (sold for \$151.75), 12 tags were for a second lion (\$31.75) valid in only some units, and the majority of tags sold (426) were reduced-price mountain lion tags, available for

\$31.75 to non-resident purchasers of a deer or elk tag valid in the Lolo, Selway, or Middle Fork zones. Most non-resident lion hunters hunted in those 3 zones. Two non-resident deer tags were used to tag lions in 2005.

A total of 3,074 hound-hunting permits were issued in 2005, a decrease of 103 since 2004. Of these, 2,945 were sold to residents and 129 to non-resident hunters. Only 75 statewide permits are available for non-residents; the remainders were from the Lolo, Selway, and Middle Fork zones.

### **Depredations**

Most lion depredations are handled by USDA-APHIS Wildlife Services in accordance with the interagency MOU between Wildlife Services and the Department. Mountain lion depredations are usually very minor throughout the state. In 2005, only 7 lions were killed in response to depredation complaints (Table 1).

# Lion Management Zones

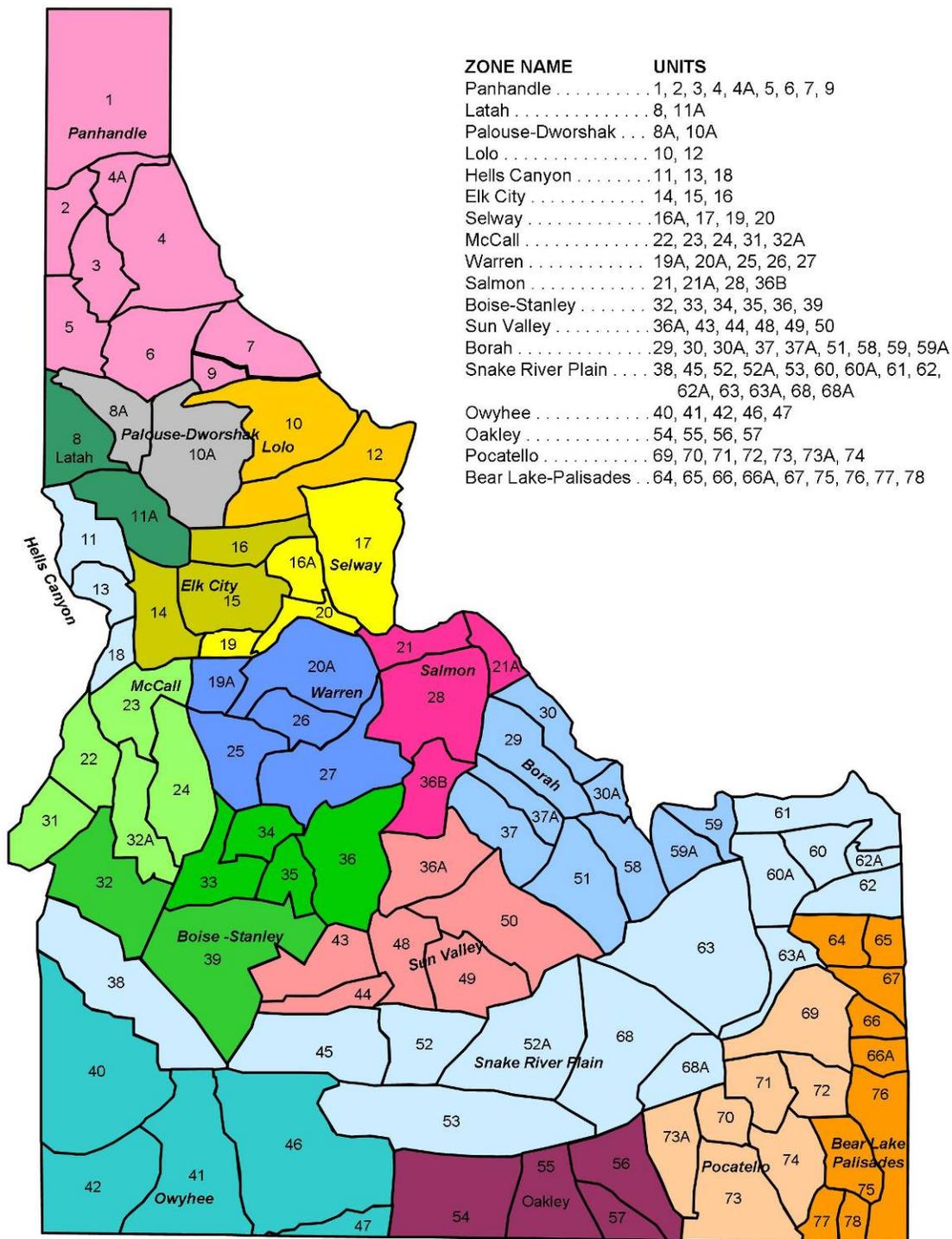


Figure 1. Statewide Mountain Lion Management Zones (DAUs).

# Idaho Lion Harvest 1982-2005

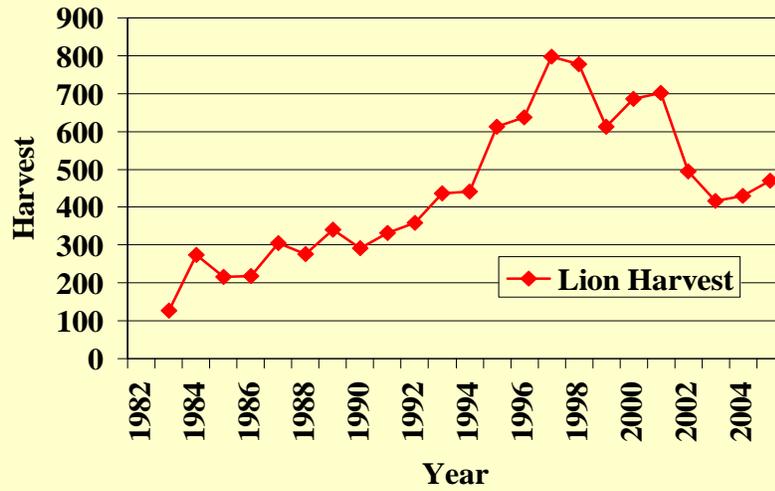


Figure 2. Statewide mountain lion harvest, 1982-present.

Table 1. Mountain lion depredations by region, 1997-2005.

Region	Year								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Panhandle	7	2	0	2	2	0	0	1	1
Clearwater	0	2	3	3	2	0	1	0	0
Southwest	1	0	2	1	2	0	1	0	3
Magic Valley	1	2	5	2	1	1	1	1	2
Southeast	0	1	7	8	2	3	2	3	0
Upper Snake	1	1	2	3	0	0	0	2	1
Salmon	1	1	0	2	0	0	0	0	0
Total	11	9	19	21	9	4	5	7	7

**PROGRESS REPORT  
SURVEYS AND INVENTORIES**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Mountain Lion Surveys and</u>
<b>PROJECT:</b>	<u>W-170-R-30</u>		<u>Inventories</u>
<b>SUBPROJECT:</b>	<u>1</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>8</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2005 to June 30, 2006</u>		

**PANHANDLE REGION**

**Abstract**

The 2005-2006 mountain lion season produced a regional harvest of 57 mountain lions, the first time the annual harvest has been lower than the 3-year objective. Female mountain lion harvest made up 58% of the harvest. 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 2005-2006 season, significant snowfall did not occur for nearly the entire winter. Hunting conditions, particularly for hound hunters, were poor for most areas during the harvest season.

**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 units. However, there is no deer or elk general season in Units 4, 7, or 9 after 3 November. Unit 9 is rarely accessible due to deep ridge-top snow on the boundary of the unit, 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 (Figure 1) 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). Specific objectives regarding sex and age composition of the harvest (Table 1) will be developed in the near 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 1971, 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 units virtually closed. Unit 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 1995-1996 hunting season, this DAU was comprised of 3 separate areas: 1-1 (Units 1, 2, 3, and 5), 1-2 (Units 4 and 4A), and 1-3 (Units 6, 7, and 9). Concurrent with the establishment of Panhandle DAU, seasons in some units 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**

The 2005-2006 season (Appendix A) was 170 days, opening 30 August and closing 15 February in all GMUs. This is the third year of a 6-week reduction in harvest opportunity from season lengths prior to the 2003-2004 season. The use of hounds is not allowed during general deer and elk rifle seasons.

### **Harvest Characteristics**

The 2005-2006 mountain lion harvest in Panhandle DAU was 57 (Table 2), the first season below the 3-year minimum threshold of 61 lions. The winter weather was reasonably conducive to lion hunting, however, and the lack of harvest is unlikely to simply be a function of low success rates due to hunting conditions. During the 2005-2006 season, no mountain lions were harvested in Unit 9, which is consistent with the past due to its remote location and poor access.

During the 2003-2005 seasons, an average of 75% of successful mountain lion hunters used hounds (Figure 2) and 68% used rifles (Table 3) to take a mountain lion.

Thirty-seven of the 242 mountain lions harvested (15%) in this DAU during the past 3 seasons (2003-2005) were taken incidentally (Figure 2), primarily by hunters pursuing other big game animals. This high proportion of incidental harvest is largely a function of the abnormally mild weather patterns during the harvest season. Very little snow accumulation made it difficult for hunters with hounds to track lions.

### **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 (Figure 3), and the 3-year un-weighted average is 46% females in the harvest. There is currently no established threshold for this measurement, but the current value is beyond the maximum threshold (40%) in the 1991-1995 Mountain Lion Management Plan. These data are consistent with those expected from a mountain lion population with high adult mortality.

### **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. The dataset for this measurement is currently not large enough to report even a short-term trend. However, as the dataset increases through time, it will be used as another indicator of population health. The age-specific data may also be used to reconstruct the population and may, thereby, be used to calculate population trend. Age data from the 2002-2004 harvest seasons indicate that sub-adult lions (<3 years old) made up 62%, 61%, and 77% of the harvest, respectively (Figure 4). During the 2002-2004 harvest seasons, there were 2 male lions harvested that were  $\geq 8$  years old (Figure 5); 63% were  $\leq 2$  years old.

### **Depredations**

There were no lions reported killed by USDA Wildlife Services during the past year (see Table 1 in the Statewide section).

### **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 2005-2006 harvest (57) is below this threshold. If hunters take fewer than 58 lions during the 2006-2007 season, the average 3-year harvest will also be below the threshold.

During the annual season setting process (February-March 2003), concerns by regional lion hunters, particularly hound-hunters, about the declining harvest and lack of older-aged male lions in the harvest resulted in a shortening of the 2003-2004 season by 45 days. The shortened season

length was maintained for the past 2 seasons. For the 5 years prior to this change, an average of 14% of the harvest came during the recently-closed period (range 7-23%). It is anticipated substantial changes will be required to improve lion survival such that there are sufficient lions to support a harvest above the threshold level given the previous seasons.

Table 1. Mountain lion plan harvest objectives, Panhandle Region, 2002-2005.

DAU	Management goals	Current status
Panhandle	Minimum 3-year average harvest of 61 lions	81
	Sex/age composition - <b>To be established</b>	Stable
	Percent males 3+ years - <b>To be established</b>	35%
	Catch-Per-Unit Effort - <b>To be established</b>	No data

Table 2. Mountain lion harvest by DAU, Panhandle Region, 1997-2005.

DAU Unit	Year								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Panhandle									
1	59	66	51	55	48	26	39	26	27
2	15	21	12	13	3	2	3	3	2
3	15	10	16	16	8	5	8	7	4
4	35	33	16	20	11	17	26	8	12
4A	1	3	9	3	2	1	1	1	4
5	12	10	16	8	12	7	7	6	0
6	37	27	19	16	23	20	20	11	4
7	17	6	12	11	5	8	9	10	4
9	1	0	0	0	0	0	0	0	0
Total	192	176	151	142	112	86	113	72	57

Table 3. Mountain lion harvest by weapon and sex, Panhandle DAU, Panhandle Region, 1996-2005.

Year	Sex	Weapon					Total
		Rifle	Archery	Muzzleloader	Handgun	Other	
1996	M	55	11	0	14	0	80
	F	36	4	3	11	0	54
1997	M	74	10	3	18	0	105
	F	59	6	4	9	0	78
1998	M	70	10	0	17	0	97
	F	53	11	2	12	1	79
1999	M	53	5	2	6	6	72
	F	62	3	0	13	1	79
2000	M	52	5	3	14	1	75
	F	53	4	0	9	0	66
2001	M	42	6	0	9	1	58
	F	38	7	0	9	0	54
2002	M	31	3	3	4	0	41
	F	37	1	0	6	1	45
2003	M	49	4	0	10	1	64
	F	37	3	2	6	0	48
	U	0	0	0	0	1	1
2004	M	23	3	2	4	0	32
	F	27	4	0	5	0	36
2005	M	22	7	1	3	0	33
	F	17	4	1	1	1	24

**Total Harvest, 1996-2005**  
**Units 1, 2, 3, 4, 4A, 5, 6, 7, 9**

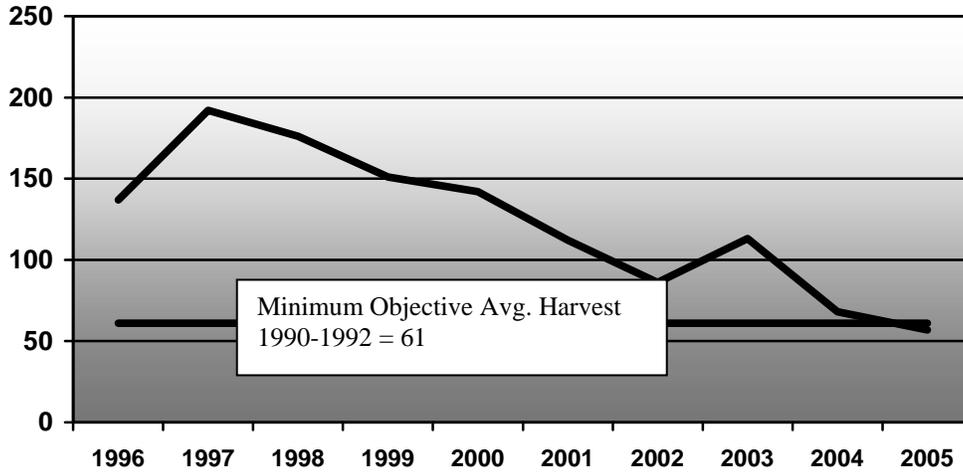


Figure 1. Mountain lion harvest, Panhandle DAU, Panhandle Region, 1996-2005.

**Method of Take, 2003-2005**  
**Units 1, 2, 3, 4, 4A, 5, 6, 7, 9**

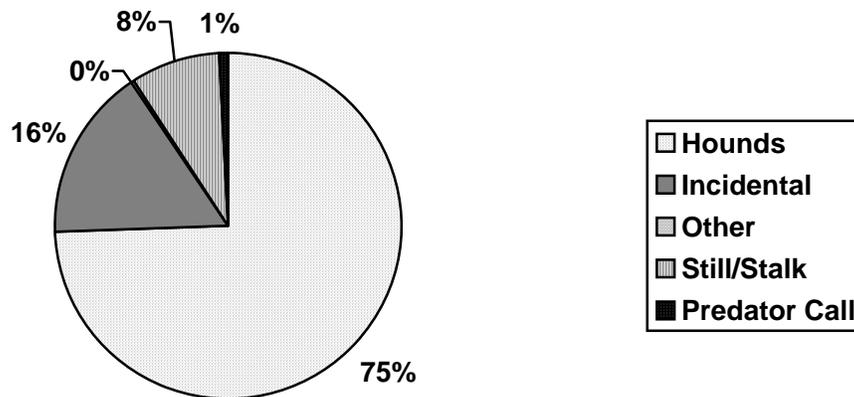


Figure 2. Harvest by method, Panhandle DAU, Panhandle Region, 2003-2005.

**Harvest by Sex, 1996-2005**  
**Units 1, 2, 3, 4, 4A, 5, 6, 7, 9**

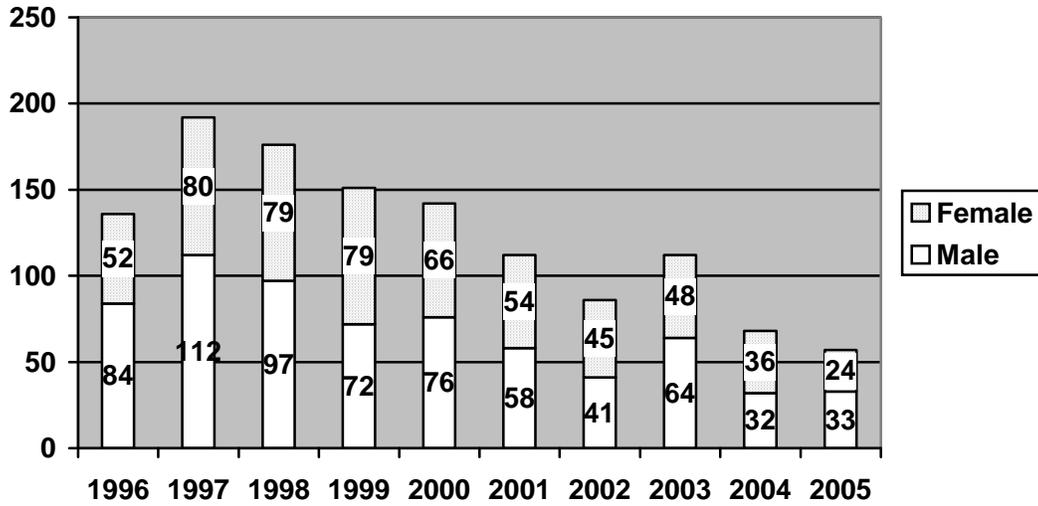
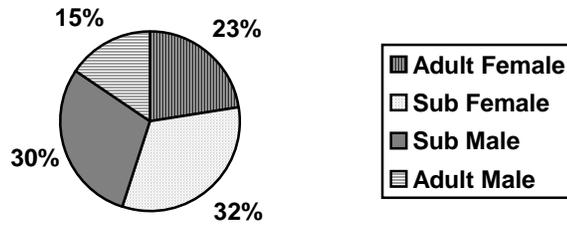
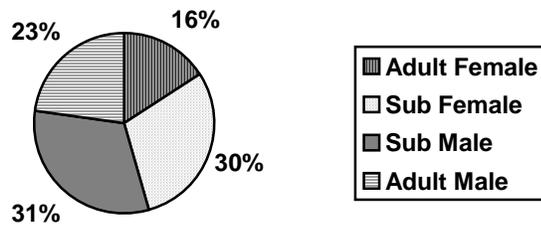


Figure 3. Harvest by sex, Panhandle DAU, Panhandle Region, 1996-2005.

2002



2003



2004

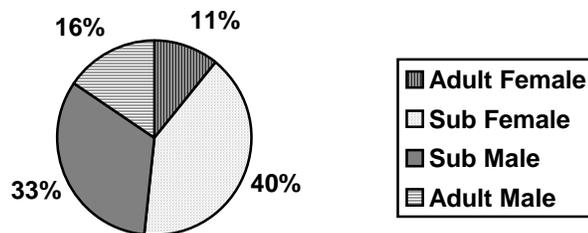


Figure 4. Sex and age composition of harvest, Panhandle DAU, Panhandle Region, 2002-2004.

**2002-2004**

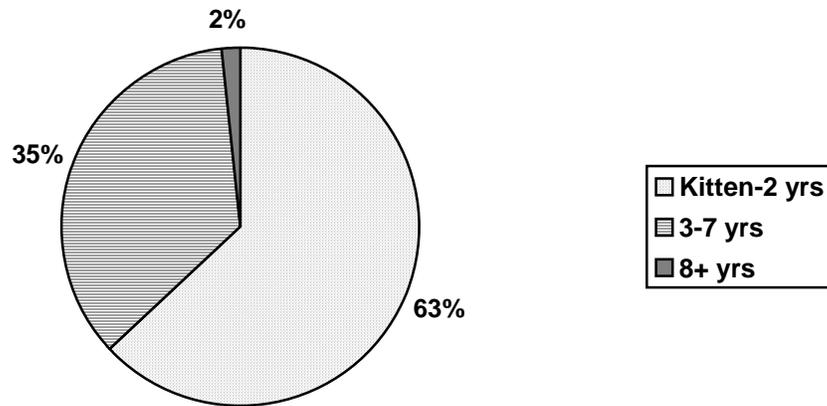


Figure 5. Average age composition of male harvest, Panhandle DAU, Panhandle Region, 2002-2004.

**PROGRESS REPORT  
SURVEYS AND INVENTORIES**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Mountain Lion Surveys and</u>
<b>PROJECT:</b>	<u>W-170-R-30</u>		<u>Inventories</u>
<b>SUBPROJECT:</b>	<u>2</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>8</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2005 to June 30, 2006</u>		

**CLEARWATER REGION**

**Abstract**

Hunters harvested 117 mountain lions (50% females) in 6 DAUs in the Clearwater Region (Latah, Palouse-Dworshak, Lolo, Hells Canyon, Elk City, Selway) during the 2005-2006 hunting season. This was a decline from the 2002-2004 average of 139 lions harvested and a decrease from last season (126 lions). Compared to the 2004-2005 season, an increase occurred only in Hells Canyon DAU (+4 lions); whereas decreases occurred in Lolo (-4 lions), Elk City (-2 lions), Palouse-Dworshak DAUs (-3 lions); and Selway DAU showed no change. During the 2005-2006 season, most mountain lions were harvested using hounds, followed by incidental harvest. Most mountain lions were harvested with a rifle.

**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 (Table 1).

**Climatic Conditions**

Clearwater Region experienced a normal snow pack for the water year of 2005-2006. Clearwater River Basin was 97% of average snow water (Oct-Jun), with total precipitation average at 112%. Meanwhile, Salmon River Basin averaged 121% of snow water with a total precipitation average at 132% for the same time period. Snow depth was slightly above normal at higher elevations, although snow depths were normal at lower elevations. Spring storms that raised total precipitation to above average levels consisted of heavy intermittent rain showers which allowed for good growth of big game food sources.

## **Depredations**

Mountain lion depredations are usually very minor in Clearwater Region. From 2003-2005, only 1 lion was killed in response to a depredation complaint (see Table 1 in the Statewide section).

### **Latah DAU (GMUs 8, 11A)**

## **Historical Information**

Latah DAU units 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 management units has historically been light (Table 2), averaging 6 lions per year from 2002-2004 (Figure 1). Only 1 lion was taken in the 2005-2006 season. This level was lower than the 1990-1992 minimum harvest objective of 3.

Harvest with the use of hounds (30%) and incidental to other hunting activities (50%) in Latah DAU (Figure 2) accounted for the majority of lions taken during 2003-2005. Most hunters (91%) used rifles to harvest a mountain lion (Table 3).

## **Age Structure**

Number of mountain lions harvested in Latah DAU is typically too small to accurately reflect the age structure of the population. Age structure of the harvest shifted toward a greater proportion of sub-adult males from 2002-2004 (Figure 3). Composition of males harvested from 2002-2004 was predominantly young (kitten-2 years) and some middle-aged (3-7 years) lions (Figure 4).

## **Sex Ratio**

During 2005-2006, no mountain lions harvested in this DAU were female (Figure 5). The number and percentage of females harvested has been variable but low in recent years.

## **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.

### **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 (Unit 8A), Clearwater River, and lower North Fork of Clearwater River (Unit 10A). Both units 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 2002-2004 averaged 43 lions per year (Figure 6); 32 lions were harvested in 2005-2006 (Table 2). This level continues to exceed the 1990-1992 minimum harvest objective of 21 and has been highly variable, probably due to varied hunting conditions between years.

Harvest in Palouse-Dworshak DAU from 2003-2005 was dominated by hunters using hounds (Figure 7), and the majority of hunters (81%) used rifles to harvest a mountain lion (Table 3).

#### **Age Structure**

The age structure of the lion harvest has been relatively stable from 2002-2004 with the majority of the harvest comprised of sub-adult females and sub-adult males (Figure 8). Composition of males harvested from 2002-2004 was 55% young (kitten-2 years) lions, 43% middle-aged (3-7 years), and 2% adult ( $\geq 8$  years) lions (Figure 9).

## **Sex Ratio**

During 2005-2006, 20 of 32 (63%) mountain lions harvested in this DAU were female (Figure 10). The number of females harvested recently peaked at 53 in 1997 and has been lower since that time. The percentage of females has averaged about 50%.

## **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 1997-1998 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 Unit 10A, where the highest annual harvest has occurred every year since 1994. Although lion harvest has declined from a peak in 1997, the unit retains a relatively high harvest level. It is unclear whether the current status is a result of a population change or hunting conditions. However, hunters are indicating that lion observations are becoming less frequent.

## **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. Much of these 2 units are difficult to access because of snow, mud, and steep, rugged terrain. Deer and elk populations throughout most of the DAU provide a substantial prey base; however, elk numbers have declined 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 with a 2-lion bag limit for the entire DAU (Appendix A). Use of electronic calls for hunting lions was legal in Unit 12. 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 (Table 2). An average harvest of 25 lions occurred from 2002-2004. During the 2005-2006 hunting season, Lolo DAU hunters harvested 21 mountain lions (Figure 11) which exceeds the 1990-1992

minimum harvest objective of 20. Availability of mountain lions appears to be declining, probably as a result of the effects of substantial decreases in elk numbers over the past few years and continued lion hunting pressure as a result of the 2-lion bag limit and reduced non-resident tag costs.

The majority of hunters in Lolo DAU used hounds (86%) to harvest mountain lions (Figure 12). The weapon used most often was rifle, followed by handgun and bow (Table 3).

### **Age Structure**

Numbers of mountain lions harvested is typically too small to accurately reflect the age structure of the population for this DAU. However, age structure of the harvest, though variable, has remained relatively stable with a greater proportion of sub-adults harvested from 2002-2004 (Figure 13). According to an evaluation of lion harvest data by Anderson and Lindzey (2001), a relatively higher proportion of adults in the harvest may indicate that high harvest rates have begun to affect the lion population age structure with a shift in availability away from sub-adult lions. This does not yet appear to be the case in this DAU. Composition of males harvested from 2002-2004 was predominantly young (60%) and middle-aged (30%) lions, with adults (10%) noticeably lacking (Figure 14).

### **Sex Ratio**

During the 2005-2006 hunting season, Lolo DAU hunters killed 21 mountain lions (Figure 15), 6 of which were female (29%). While the percentage of females was lower than the 1994-2003 average (45%), the percentage of females in 2003 (70%) was the highest in the past 10 years. Since then, it has declined to 36% in 2004 and 29% in 2005. In addition, percentage of adult females has shown a 3-year decreasing trend from 2002-2004.

### **Management Implications**

Mountain lion harvest in Lolo DAU has declined abruptly during the past 4 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 units in the region also experienced decreased harvest in recent years.

## **Hells Canyon DAU (GMUs 11, 13, 18)**

### **Historical Information**

Wildlife habitat in Hells Canyon units 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. Unit 11 is mostly private land except for the Craig Mountain Wildlife Management Area (66,000 acres). Unit 13 is primarily under private ownership and is managed mostly for agriculture and livestock production. Unit 18 is two-thirds

public land, mostly in the Hells Canyon Wilderness and National Recreation Area. All 3 units 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 (Table 2). From 2002-2004, harvest averaged 20 lions per year and never exceeded 35 (Figure 16). Twenty-one mountain lions were harvested in the 2005-2006 season. This level has surpassed the 1990-1992 minimum harvest objective of 15 each year.

Seventy-two percent of the lion harvest in Hells Canyon DAU from 2003-2005 was accomplished with the use of hounds (Figure 17), and 23% was from activities incidental to hunting. The most commonly used weapons were the rifle and handgun (Table 3).

### **Age Structure**

Number of mountain lions harvested in Hells Canyon DAU is generally too small to accurately reflect the age structure of the population. Age structure of the harvest has shifted toward a greater proportion of adult females and males from 2002-2004 (Figure 18). Fifty percent of male lions harvested from 2002-2004 were middle-aged (3-7 years), 41% were  $\leq 2$  years, and only 9% were  $\geq 8$  years old (Figure 19).

### **Sex Ratio**

During 2005-2006, 7 of 21 (33%) mountain lions harvested in this DAU were female (Figure 20). The number of females harvested has been variable, ranging from 6-21 in the past 5 years. The percentage of females has remained at or above 50% most years but has been below that the last 3 years.

### **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.

## 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 Unit 15 was closed to mountain lion harvest from 1999 through the 2003-2004 season for research purposes. Only the portion of Unit 16 north of Selway River was open for a 2-lion bag limit for the 2005-2006 season.

### Harvest Characteristics

Hunter access can be difficult in some portions of this DAU. During the 2005-2006 hunting season, Elk City DAU hunters harvested 32 mountain lions for the fourth consecutive season in which harvest has been below the 1990-1992 minimum harvest objective of 40 lions (Figure 21). Lion harvest peaked in 1996 and has been at a lower level since that time (Table 2). Some of the decline can be attributed to the lion harvest closure in the northern portion of Unit 15 from 1999 through the 2003-2004 season.

Harvest with the use of hounds (71%) and incidental to other hunting activities (23%) in Elk City DAU (Figure 22) accounted for the majority of lions taken during 2003-2005. The weapon used most often was rifle followed by handgun (Table 3).

### Age Structure

Age structure of the harvest increased from 44% adults ( $\geq 3$  years) in 2001 to 55% in 2004 (Figure 23). Composition of males harvested from 2002-2004 was 48% middle-aged (3-7 years) and 47% young lions (kitten-2 years), with adults  $\geq 8$  years accounting for only 5% (Figure 24).

### Sex Ratio

During 2005-2006, 21 of 32 (66%) mountain lions harvested in Elk City DAU were female (Figure 25). Percentage of females in 2005-2006 is the highest in the past 10 years (1993-2004 average = 48%).

## **Management Implications**

A decline in total mountain lion harvest in Elk City DAU was to be expected after the northern portion of Unit 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.

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

## **Historical Information**

Units 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 units, 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 was allowed. 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 non-resident hound permits, outfitter efforts, and low snow pack (Figure 26). However, harvest declined substantially in 2002 and has remained low since then (Table 2). Current harvest (10 lions) is below the 1990-1992 minimum harvest objective of 16. Because these are such large units 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 in Selway DAU accounted for the majority of lions (89%) taken from 2003-2005 (Figure 27). The most common weapons used were rifle and handgun (Table 3).

## **Age Structure**

Number of mountain lions harvested is typically too small to accurately reflect the age structure of the population. Of known-age animals harvested, age data from the 2003-2005 harvest seasons indicate that adult lions ( $\geq 3$  years old) made up 72% of the harvest (Figure 28).

Composition of males harvested from 2002-2004 was 69% for middle-aged (3-7 years) lions, 23% for lions  $\leq 2$  years, and only 8%  $\geq 8$  years old (Figure 29).

### **Sex Ratio**

During the 2005-2006 hunting season, Selway DAU hunters killed 10 mountain lions, including 4 females (Figure 30). The number and percentage of females harvested has remained low in recent years, but in 2004, levels were similar to 2001 where harvest was predominately female. Few mountain lions are typically harvested from these units because of their remote nature and difficult access facing hunters.

### **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 is generally considered to be light except in those few areas with good road access or in areas where outfitters concentrate their hunting efforts.

### **Literature Cited**

ANDERSON, C., AND F. LINDZEY. 2001. Abstract in the Proceedings of the 8<sup>th</sup> annual conference of The Wildlife Society, Reno, Nevada, USA.

Table 1. Mountain lion plan harvest objectives, Clearwater Region, 2002-2004.

DAU	Management goals	Current status
Latah	Minimum 3-year average harvest of 3 lions	5
	Sex/age composition - <b>To be established</b>	Stable
	Percent males 3+ years - <b>To be established</b>	11%
	Catch-per-Unit Effort - <b>To be established</b>	No data
Palouse-Dworshak	Minimum 3-year average harvest of 21 lions	43
	Sex/age composition - <b>To be established</b>	Stable
	Percent males 3+ years - <b>To be established</b>	45%
	Catch-per-Unit Effort - <b>To be established</b>	No data
Lolo	Minimum 3-year average harvest of 20 lions	25
	Sex/age composition - <b>To be established</b>	Decreasing
	Percent males 3+ years - <b>To be established</b>	40%
	Catch-per-Unit Effort - <b>To be established</b>	No data
Hells Canyon	Minimum 3-year average harvest of 15 lions	20
	Sex/age composition - <b>To be established</b>	Increasing
	Percent males 3+ years - <b>To be established</b>	59%
	Catch-per-Unit Effort - <b>To be established</b>	No data
Elk City	Minimum 3-year average harvest of 40 lions	33
	Sex/age composition - <b>To be established</b>	Decreasing
	Percent males 3+ years - <b>To be established</b>	53%
	Catch-per-Unit Effort - <b>To be established</b>	No data
Selway	Minimum 3-year average harvest of 16 lions	13
	Sex/age composition - <b>To be established</b>	Stable
	Percent males 3+ years - <b>To be established</b>	77%
	Catch-per-Unit Effort - <b>To be established</b>	No data

Table 2. Mountain lion harvest by DAU, Clearwater Region, 1997-2005.

DAU Unit	Year								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Latah</b>									
8	8	9	6	2	7	2	1	0	1
11A	6	5	2	4	5	4	4	5	0
Total	14	14	8	6	12	6	5	5	1
<b>Palouse- Dworshak</b>									
8A	17	20	14	12	12	14	11	7	9
10A	87	69	34	55	26	34	33	28	23
Total	104	89	48	67	38	48	44	35	32
<b>Lolo</b>									
10	23	21	16	20	11	12	12	11	10
12	24	18	25	34	18	8	18	14	11
Total	47	39	41	54	29	20	30	25	21
<b>Hells Canyon</b>									
11	11	3	4	10	5	7	7	7	7
13	8	5	4	7	8	3	7	3	7
18	13	11	10	17	11	9	10	7	7
Total	32	19	18	34	24	19	24	17	21
<b>Elk City</b>									
14	16	18	28	13	14	13	12	13	6
15	44	21	9	15	20	11	9	15	13
16	18	20	13	17	12	9	11	6	14
Total	78	59	50	45	46	33	32	34	33
<b>Selway</b>									
16A	1	0	1	3	4	3	2	0	2
17	13	17	7	13	19	7	8	3	2
19	0	1	2	8	2	1	0	1	1
20	6	2	2	15	8	3	6	6	5
Total	20	20	12	39	33	14	16	10	10

Table 3. Mountain lion harvest by weapon and sex, Clearwater Region, 2000-2005.

DAU	Year	Sex	Weapon					Total	
			Rifle	Archery	Muzzleloader	Handgun	Other		
Latah	2000	M	3	0	0	0	0	3	
		F	2	0	0	0	1	3	
	2001	M	7	0	0	0	0	7	
		F	3	0	0	2	0	5	
	2002	M	3	0	0	2	0	5	
		F	1	0	0	0	0	1	
	2003	M	3	0	0	0	0	3	
		F	2	0	0	0	0	2	
	2004	M	3	0	0	0	0	3	
		F	1	0	0	1	0	2	
	2005	M	1	0	0	0	0	1	
		F	0	0	0	0	0	0	
	Palouse-Dworshak	2000	M	19	3	1	10	0	33
			F	24	3	4	3	0	34
2001		M	11	4	1	4	0	20	
		F	9	3	1	5	0	18	
2002		M	20	2	0	2	0	24	
		F	16	6	0	2	0	24	
2003		M	22	4	0	0	0	26	
		F	15	0	0	3	0	18	
2004		M	13	2	1	2	0	18	
		F	14	1	0	2	0	17	
2005		M	10	1	0	1	0	12	
		F	17	1	0	2	0	20	
Lolo		2000	M	13	6	0	10	0	29
			F	15	4	0	5	0	24
	2001	M	6	6	0	4	1	17	
		F	4	4	0	4	0	12	
	2002	M	5	2	0	1	0	8	
		F	6	2	0	4	0	12	
	2003	M	4	1	0	4	0	9	
		F	17	3	0	1	0	21	
	2004	M	10	3	0	3	0	16	
		F	4	2	0	3	0	9	
	2005	M	11	1	0	3	0	15	
		F	6	0	0	0	0	6	
	Hells Canyon	2000	M	7	1	1	4	0	13
			F	16	2	0	3	0	21
2001		M	6	0	2	1	1	10	
		F	9	2	0	3	0	14	
			U	1	0	0	0	1	

Table 3. Continued.

DAU	Year	Sex	Weapon				Total		
			Rifle	Archery	Muzzleloader	Handgun		Other	
	2002	M	9	0	0	0	0	9	
		F	9	0	0	1	0	10	
	2003	M	9	0	0	5	0	14	
		F	9	0	0	1	0	10	
	2004	M	8	0	0	3	0	11	
		F	5	0	0	1	0	6	
	2005	M	11	0	0	3	0	14	
		F	6	0	0	1	0	7	
	Elk City	2000	M	11	0	0	13	0	24
			F	14	1	0	6	0	21
		2001	M	13	4	0	7	1	25
			F	11	1	0	9	0	21
		2002	M	14	1	0	0	0	15
			F	13	0	1	3	1	18
2003		M	15	0	0	3	0	18	
		F	11	0	1	2	0	14	
2004		M	7	1	0	4	0	12	
		F	19	0	0	3	0	22	
2005		M	9	1	0	1	0	11	
		F	16	0	0	5	0	21	
Selway		2000	M	4	4	0	12	1	21
			F	6	1	0	11	0	18
	2001	M	1	3	0	6	0	10	
		F	8	2	0	13	0	23	
	2002	M	4	1	0	2	0	7	
		F	5	2	0	0	0	7	
	2003	M	2	1	0	8	0	11	
		F	0	3	0	2	0	5	
	2004	M	3	0	0	0	0	3	
		F	3	0	0	4	0	7	
	2005	M	4	1	0	1	0	6	
		F	1	1	0	2	0	4	

**Total Harvest, 1996-2005  
Units 8, 11A**

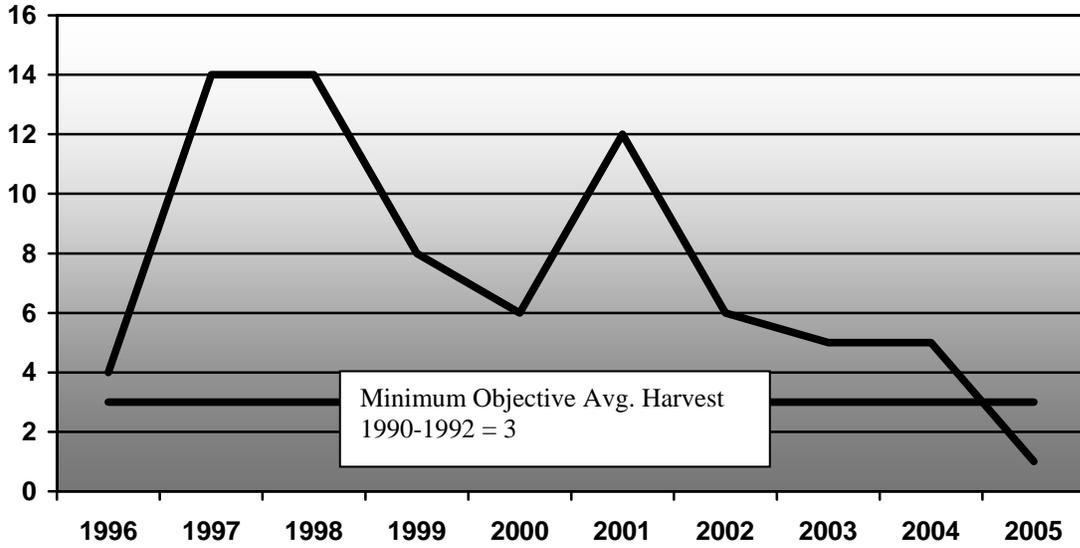


Figure 1. Mountain lion harvest, Latah DAU, Clearwater Region, 1996-2005.

**Method of Take, 2003-2005  
Units 8, 11A**

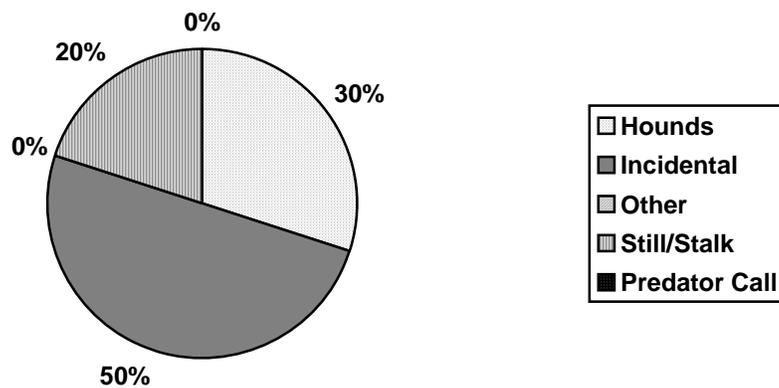
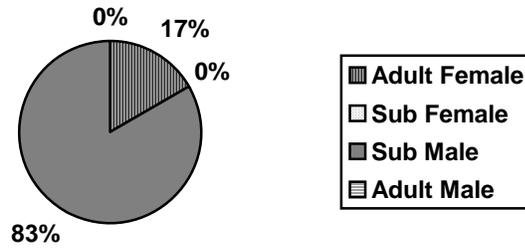
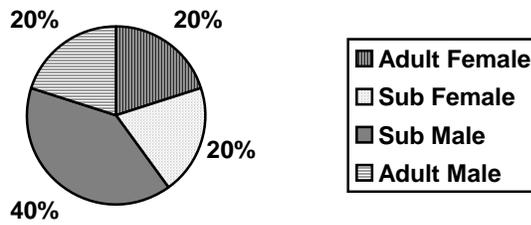


Figure 2. Harvest by method, Latah DAU, Clearwater Region, 2003-2005.

2002



2003



2004

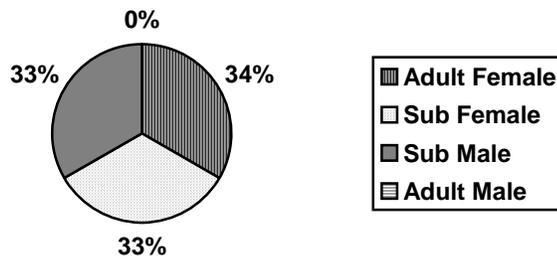


Figure 3. Sex and age composition of harvest, Latah DAU, Clearwater Region, 2002-2004.

### 2002-2004

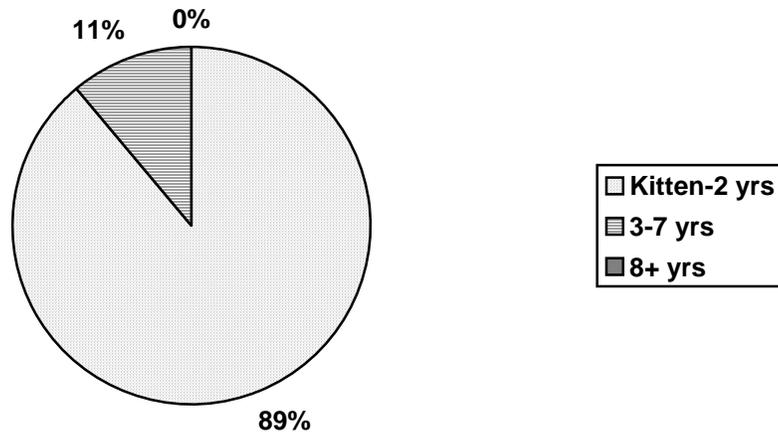


Figure 4. Average age composition of male harvest, Latah DAU, Clearwater Region, 2002-2004.

### Harvest by Sex, 1996-2005 Units 8, 11A

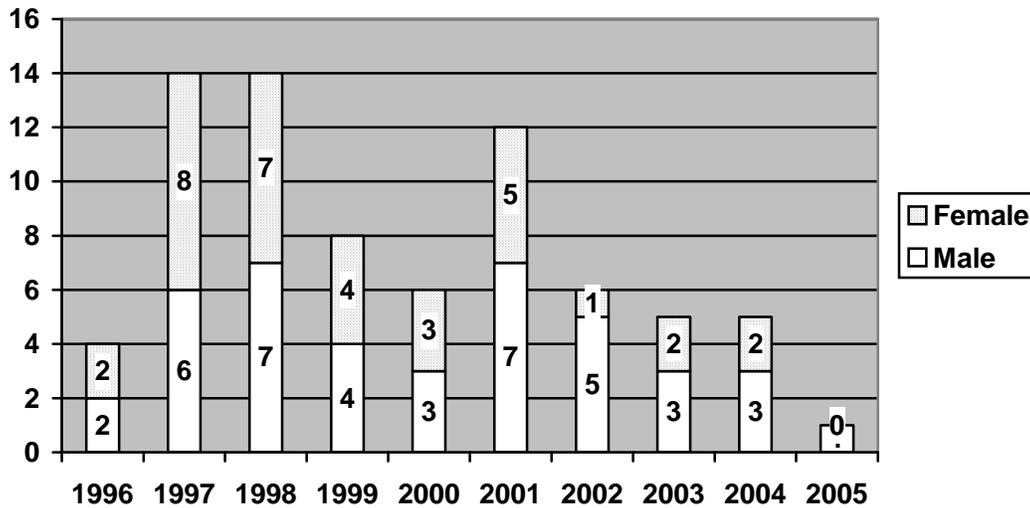


Figure 5. Harvest by sex, Latah DAU, Clearwater Region, 1996-2005.

**Total Harvest, 1996-2005  
Units 8A, 10A**

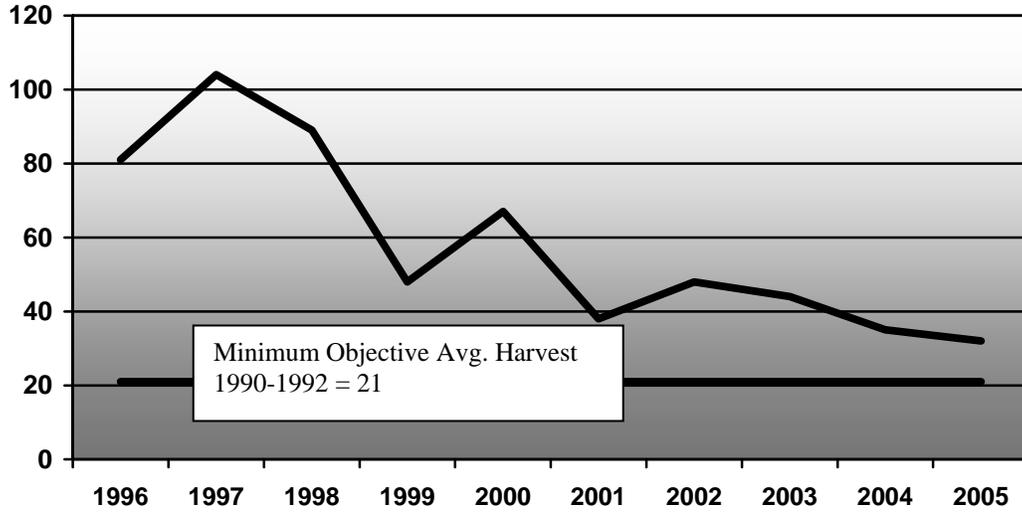


Figure 6. Mountain lion harvest, Palouse-Dworshak DAU, Clearwater Region, 1996-2005.

**Method of Take, 2002-2004  
Units 8A, 10A**

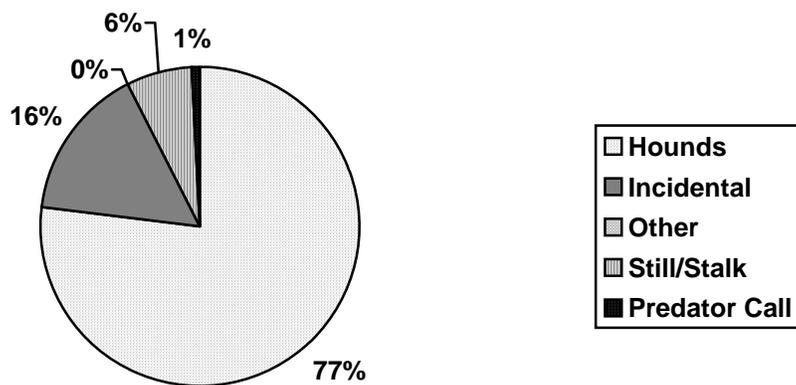
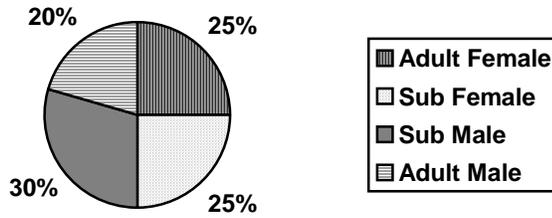
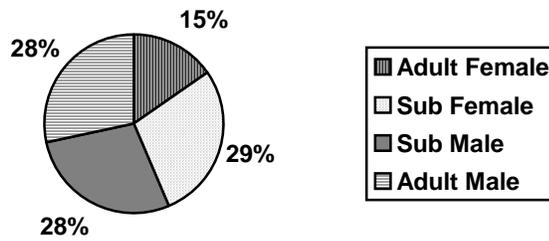


Figure 7. Harvest by method, Palouse-Dworshak DAU, Clearwater Region, 2003-2005.

**2002**



**2003**



**2004**

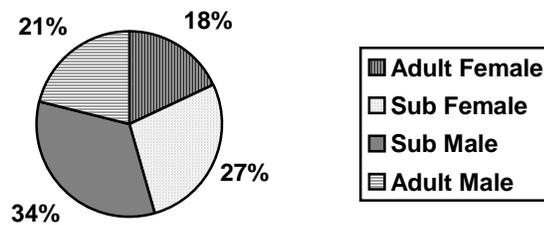


Figure 8. Sex and age composition of harvest, Palouse-Dworshak DAU, Clearwater Region, 2002-2004.

**2002-2004**

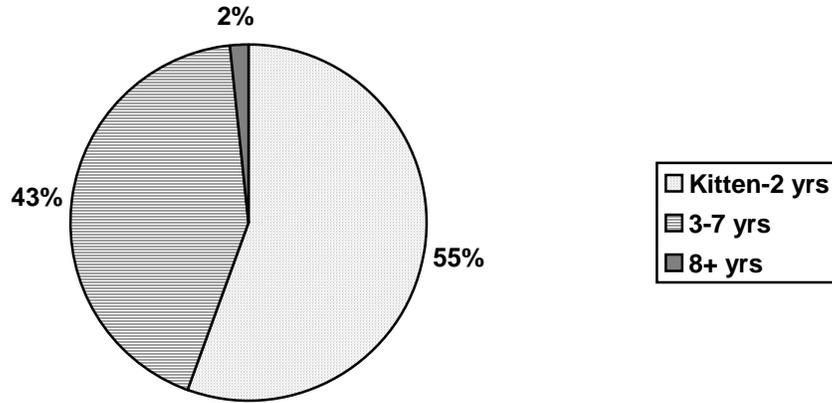


Figure 9. Average age composition of male harvest, Palouse-Dworshak DAU, Clearwater Region, 2002-2004.

**Harvest by Sex, 1996-2005  
Units 8A, 10A**

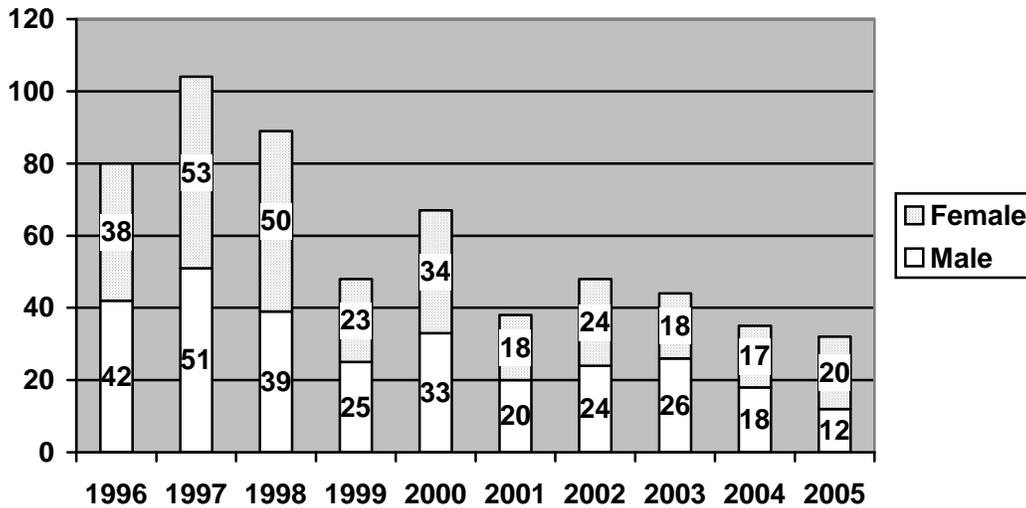


Figure 10. Harvest by sex, Palouse-Dworshak DAU, Clearwater Region, 1996-2005.

**Total Harvest, 1996-2005**  
**Units 10, 12**

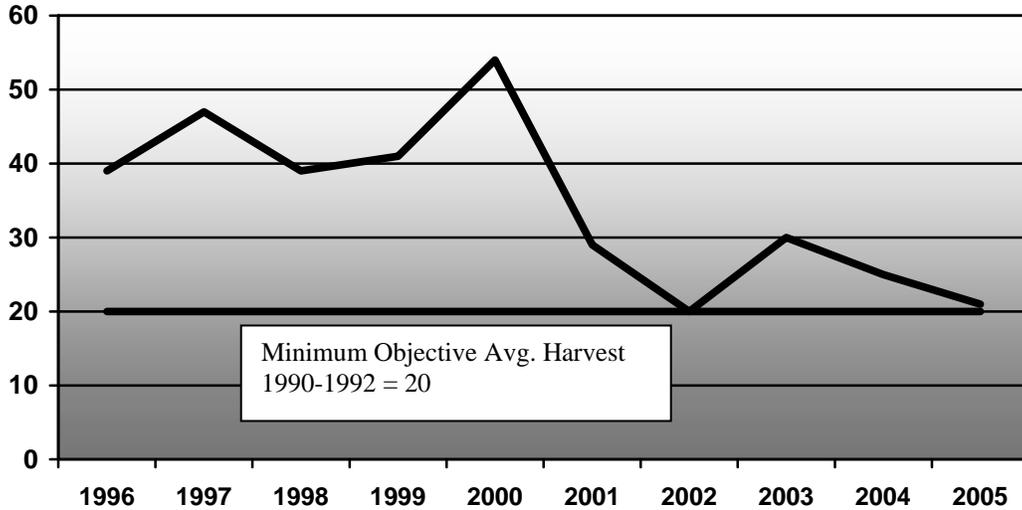


Figure 11. Mountain lion harvest, Lolo DAU, Clearwater Region, 1996-2005.

**Method of Take, 2003-2005**  
**Units 10, 12**

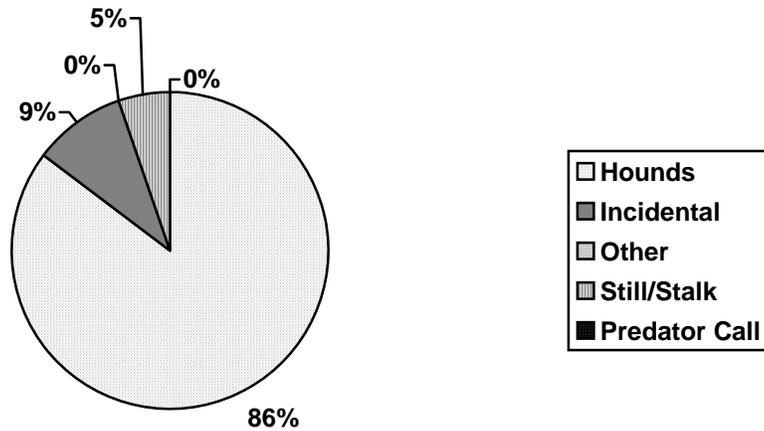
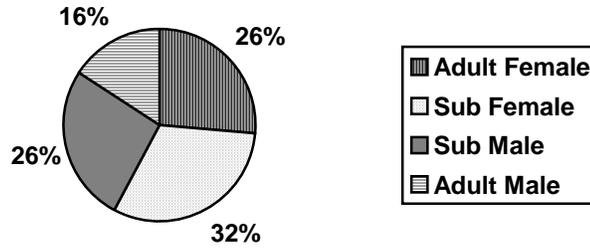
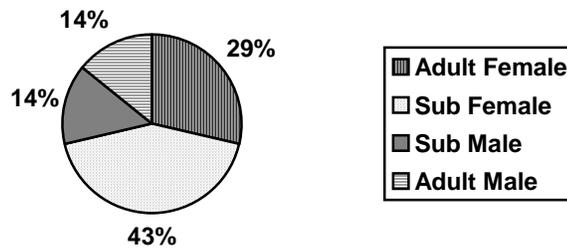


Figure 12. Harvest by method, Lolo DAU, Clearwater Region, 2003-2005.

2002



2003



2004

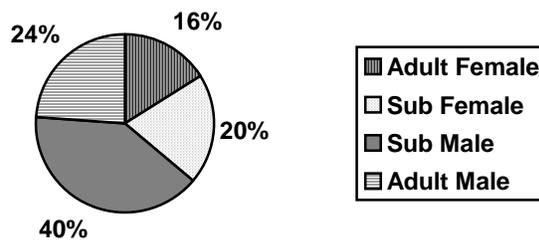


Figure 13. Sex and age composition of harvest, Lolo DAU, Clearwater Region, 2002-2004.

### 2002-2004

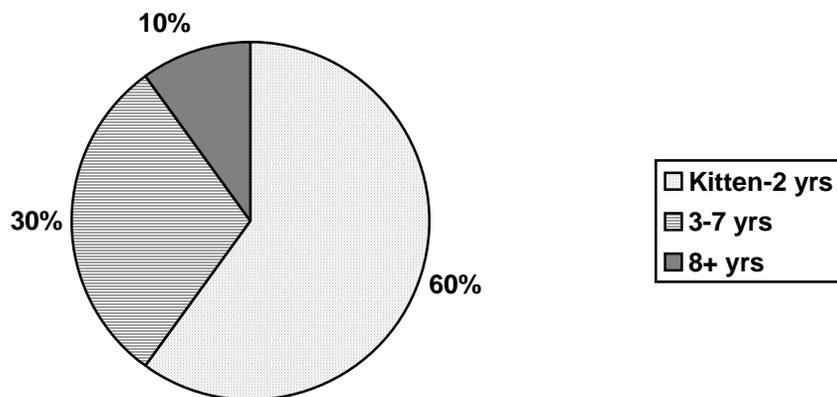


Figure 14. Average age composition of male harvest, Lolo DAU, Clearwater Region, 2002-2004.

### Harvest by Sex, 1996-2005 Units 10, 12

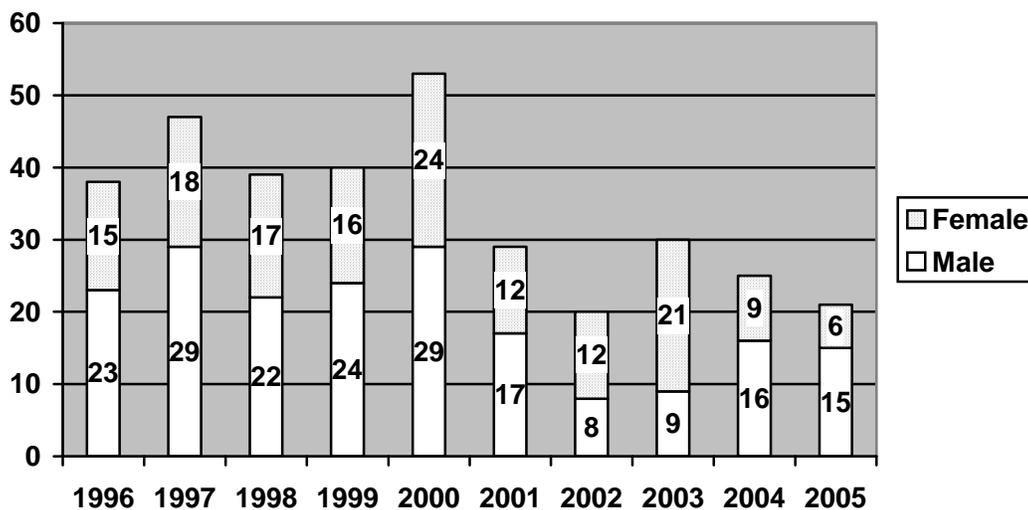


Figure 15. Harvest by sex, Lolo DAU, Clearwater Region, 1996-2005.

**Total Harvest, 1996-2005**  
**Units 11, 13, 18**

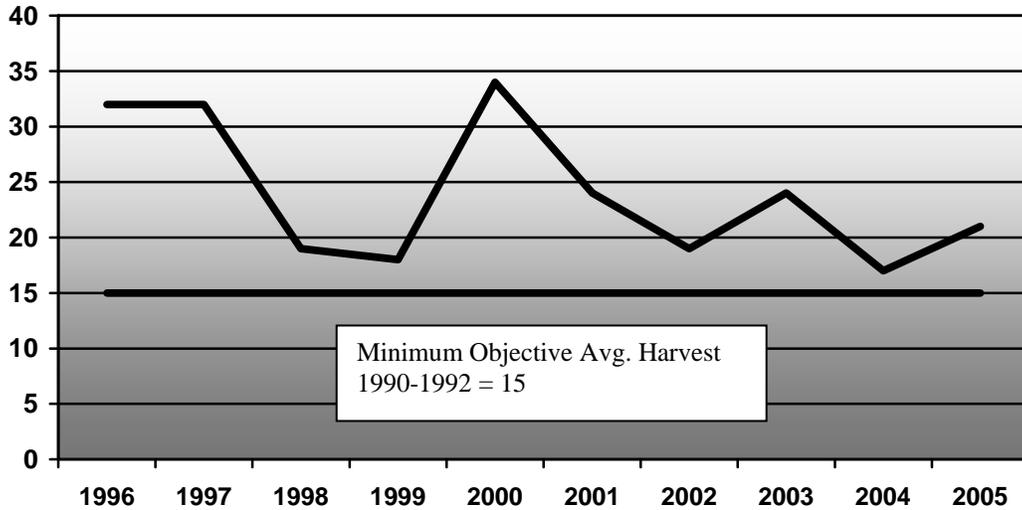


Figure 16. Mountain lion harvest, Hells Canyon DAU, Clearwater Region, 1996-2005.

**Method of Take, 2003-2005**  
**Units 11, 13, 18**

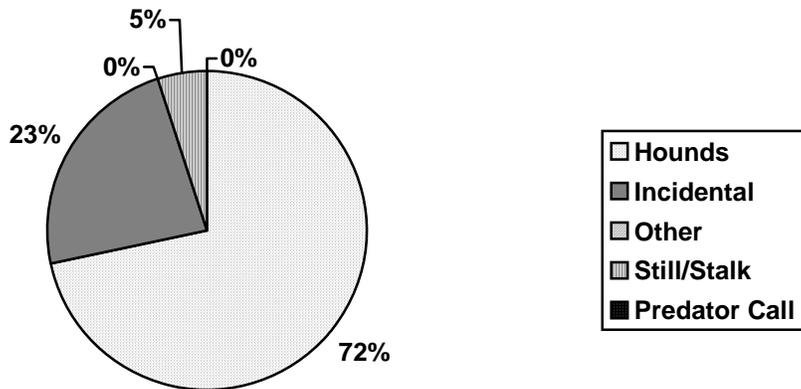
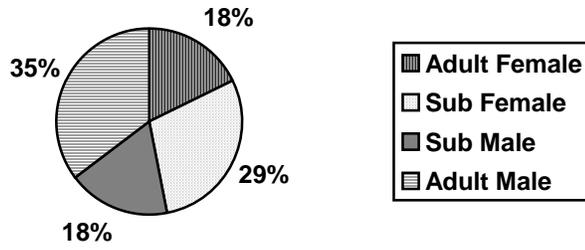
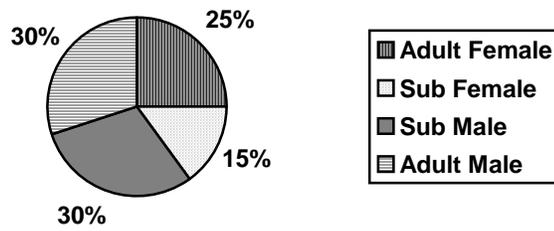


Figure 17. Harvest by method, Hells Canyon DAU, Clearwater Region, 2003-2005.

## 2002



## 2003



## 2004

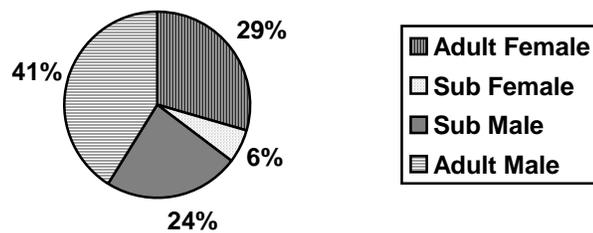


Figure 18. Sex and age composition of harvest, Hells Canyon DAU, Clearwater Region, 2002-2004.

### 2002-2004

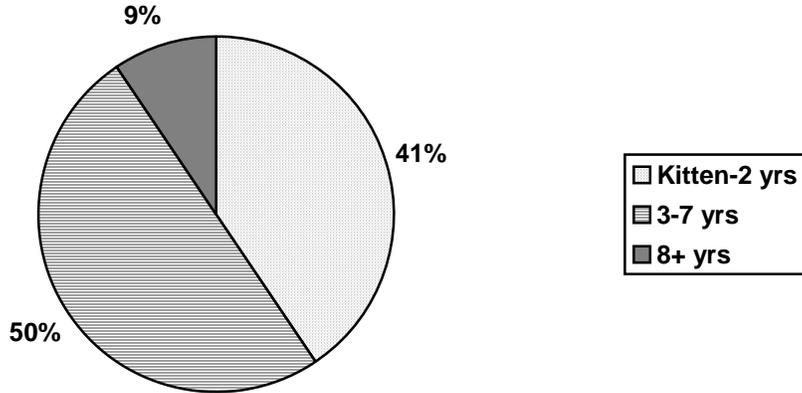


Figure 19. Average age composition of male harvest, Hells Canyon DAU, Clearwater Region, 2002-2004.

### Harvest by Sex, 1996-2005 Units 11, 13, 18

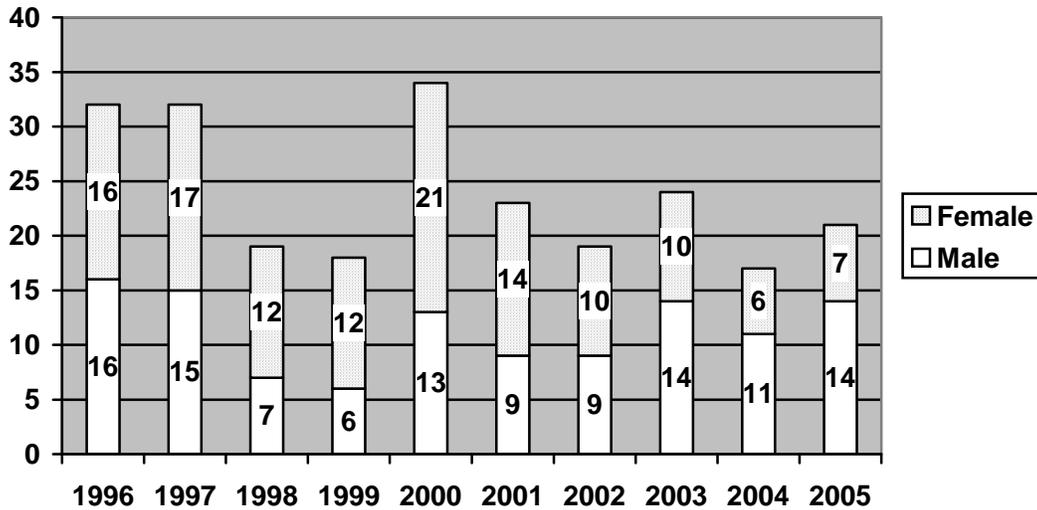


Figure 20. Harvest by sex, Hells Canyon DAU, Clearwater Region, 1996-2005.

**Total Harvest, 1996-2005**  
**Units 14, 15, 16**

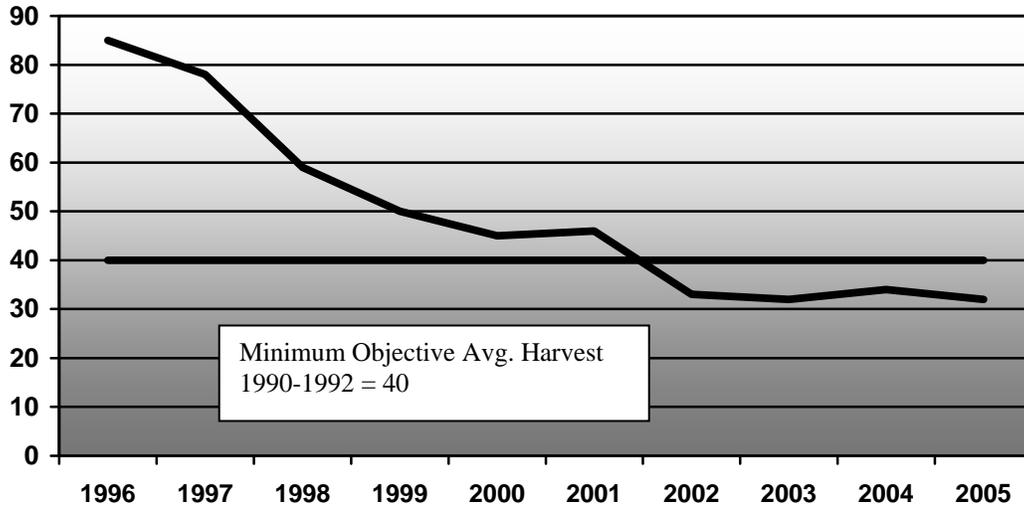


Figure 21. Mountain lion harvest, Elk City DAU, Clearwater Region, 1996-2005.

**Method of Take, 2003-2005**  
**Units 14, 15, 16**

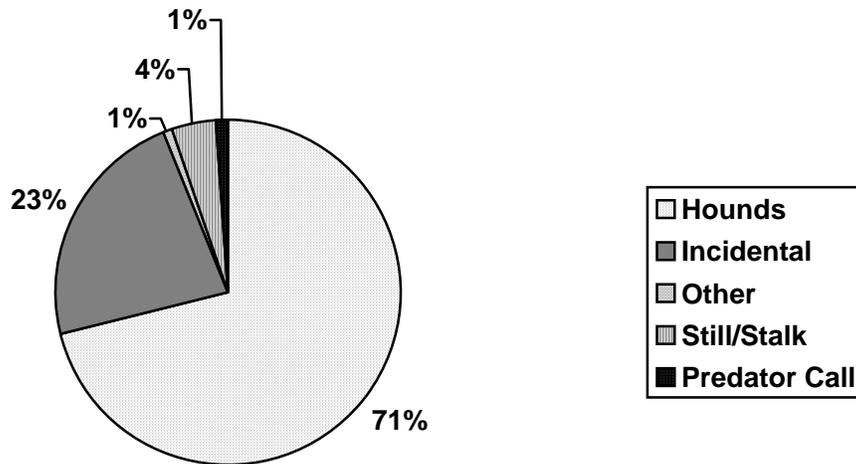
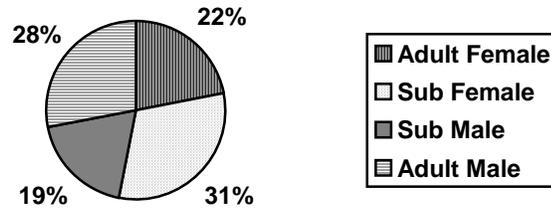
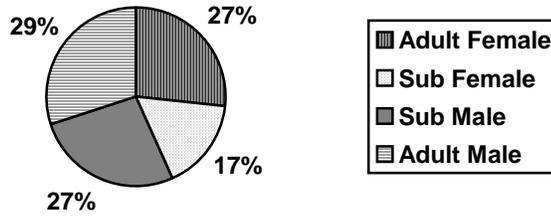


Figure 22. Harvest by method, Elk City DAU, Clearwater Region, 2003-2005.

2002



2003



2004

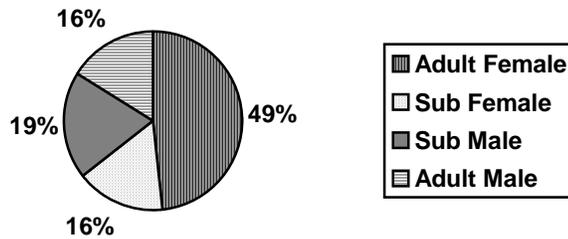


Figure 23. Sex and age composition of harvest, Elk City DAU, Clearwater Region, 2002-2004.

### 2002-2004

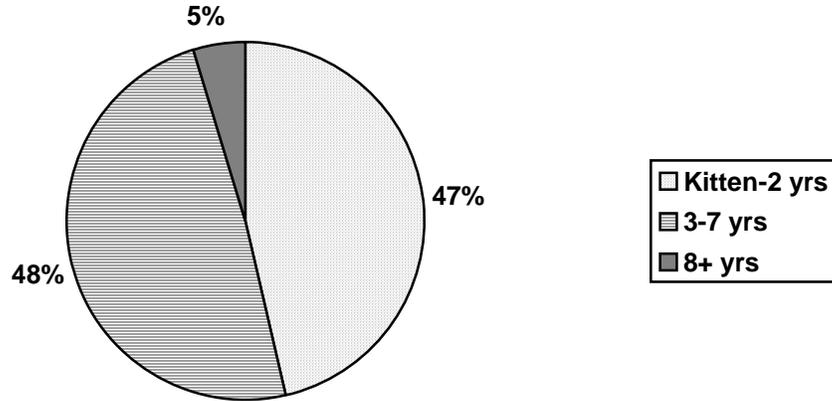


Figure 24. Average age composition of male harvest, Elk City DAU, Clearwater Region, 2002-2004.

### Harvest by Sex, 1996-2005 Units 14, 15, 16

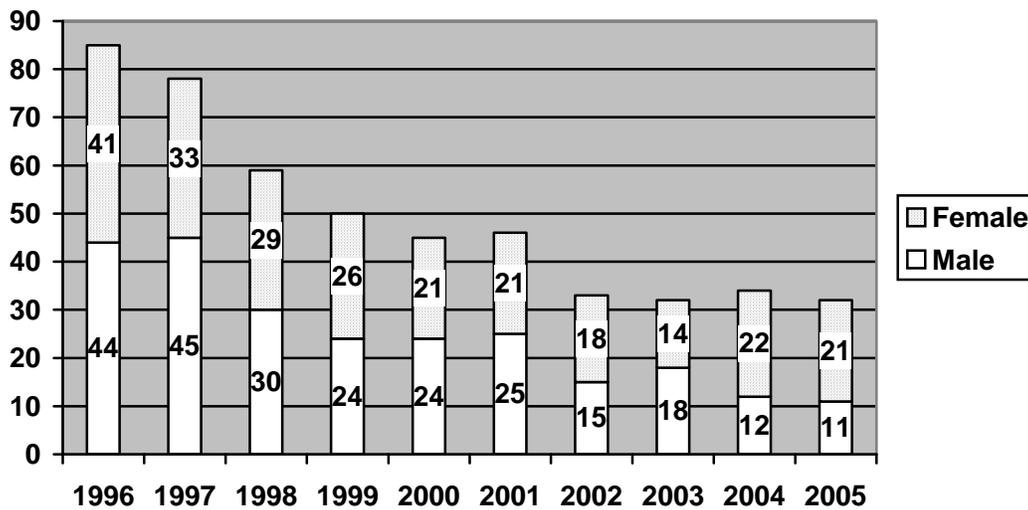


Figure 25. Harvest by sex, Elk City DAU, Clearwater Region, 1996-2005.

**Total Harvest, 1996-2005  
Units 16A, 17, 19, 20**

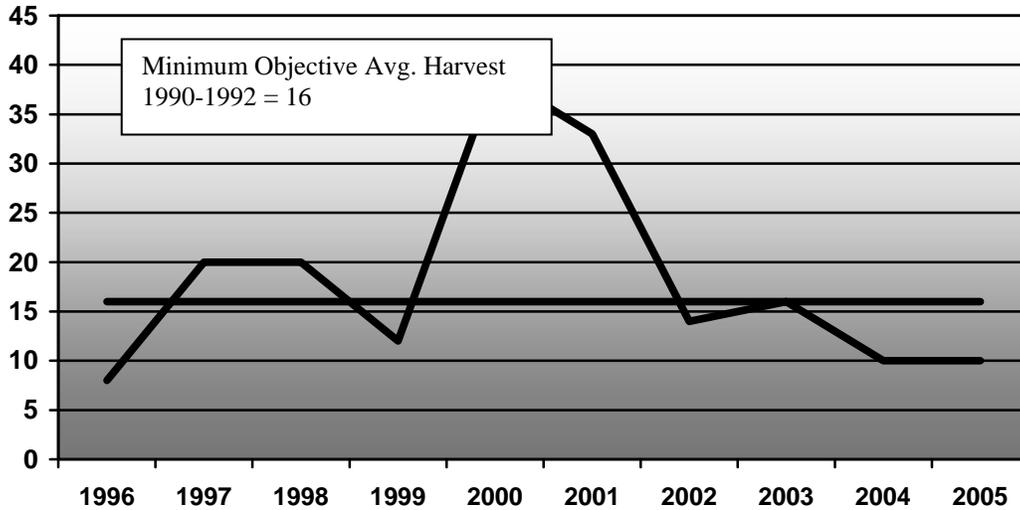


Figure 26. Mountain lion harvest, Selway DAU, Clearwater Region, 1996-2005.

**Method of Take, 2003-2005  
Units 16A, 17, 19, 20**

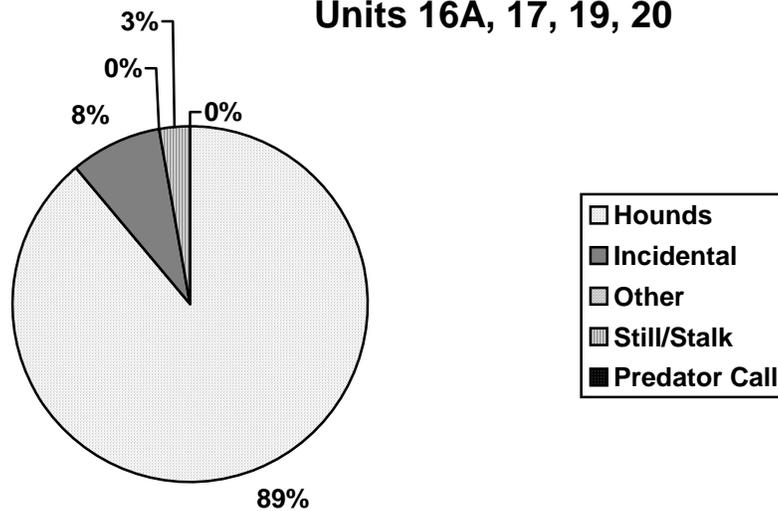
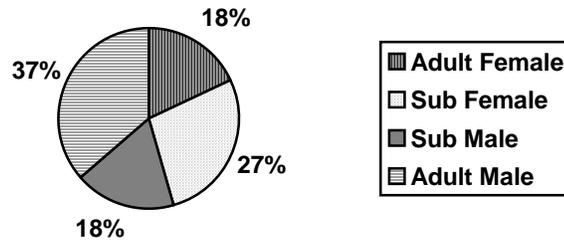
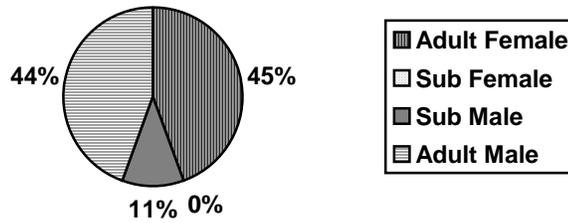


Figure 27. Harvest by method, Selway DAU, Clearwater Region, 2003-2005.

2002



2003



2004

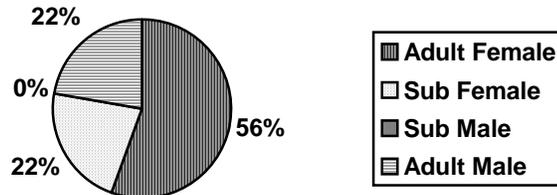


Figure 28. Sex and age composition of harvest, Selway DAU, Clearwater Region, 2002-2004.

**2002-2004**

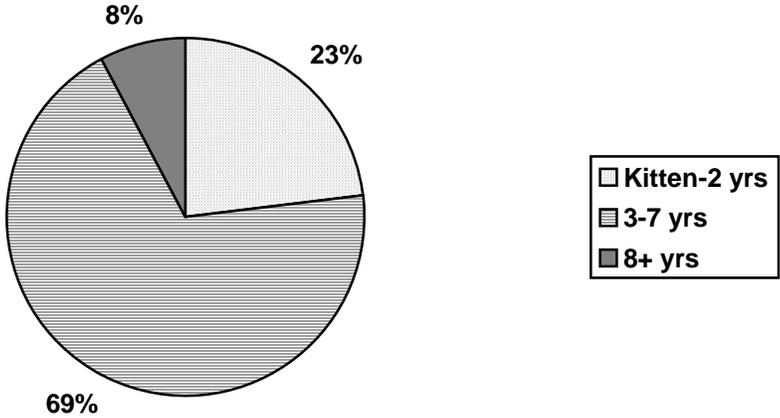


Figure 29. Average age composition of male harvest, Selway DAU, Clearwater Region, 2002-2004.

**Harvest by Sex, 1996-2005  
Units 16A, 17, 19, 20**

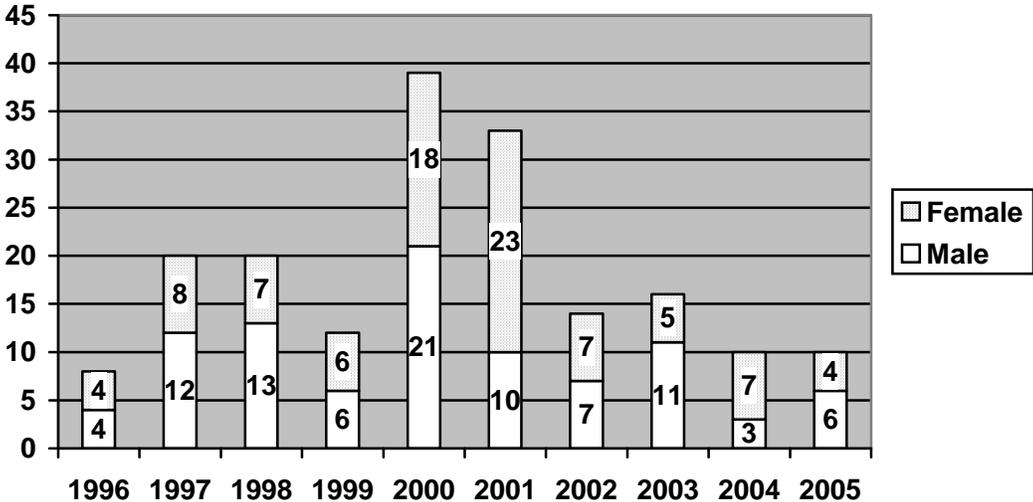


Figure 30. Harvest by sex, Selway DAU, Clearwater Region, 1996-2005.

**PROGRESS REPORT  
SURVEYS AND INVENTORIES**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Mountain Lion Surveys and</u>
<b>PROJECT:</b>	<u>W-170-R-30</u>		<u>Inventories</u>
<b>SUBPROJECT:</b>	<u>3</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>8</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2005 to June 30, 2006</u>		

**SOUTHWEST REGION**

**Abstract**

Mandatory harvest reports indicated 112 mountain lions were harvested in 4 DAUs reported by Southwest Region (Warren, McCall, Boise-Stanley, Owyhee) during the 2005-2006 season. The 2005-2006 harvest was 22% higher than that reported in 2004-2005. Fifteen units in Southwest Region have a female harvest quota; after a female harvest quota is met in these units, 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 unit during the 2005-2006 season.

**Climatic Conditions**

The 2005-2006 winter provided mixed mountain lion hunting conditions. Precipitation was 130% of the long-term average snow depths during winter in the mountainous portion of Southwest Region, but slightly below average in the rest of the region. Snow began accumulating in late December and early January, but much of the precipitation later in the winter fell as rain.

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

**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 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 for the 1990-1992 mountain lion seasons (Table 1). 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, with most of it occurring within the Frank Church River-of-No-Return Wilderness boundaries. Research data indicate mountain lion populations in this area are self-regulating, contributing emigrating animals to surrounding GMUs. Wolves were reintroduced in this DAU in 1995. The effects of coexistence of these species has not been determined to date. The current structure of long seasons and 2-lion bag limits in Units 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**

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 also recorded on sex, weapon type, hunt method, and date of kill.

Twenty-three mountain lions (14 male, 9 female) were harvested in Warren DAU (Tables 2 and 3) during the 2005-2006 season. The 2005-2006 harvest was 156% more than that reported in 2004-2005, and was 53% above the minimum objective average harvest (Figure 1).

Most lions aged in the 2004-2005 harvest were sub-adult females (Figure 2). Three-year average age data indicate that 57% of harvested males were in the 3- to 7-year-old age class, and 14% were  $\geq 8$  years old (Figure 3).

During the 2003-2005 seasons, 86% of mountain lions harvested in Warren DAU were taken with assistance of hounds (Figure 4) and 10% were taken incidentally to other hunting. The proportion of females in the harvest has varied from 33-75% in the last 5 years (Figure 5).

## **Depredations**

Most lion depredations are handled by USDA-APHIS 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 (see Table 1 in the Statewide section). An improved system for recording and tracking lion depredations and incidents has been implemented and should improve the reliability of this data.

## **Management Implications**

The remote nature of this DAU makes it unlikely that sport harvest can regulate lion population numbers. The establishment of wolf packs will likely have the greatest effect on lion populations in this area, and monitoring of this effect is needed. 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)

### 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 for the 1990-1992 mountain lion seasons (Table 1). 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 units 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 indicated 30 mountain lions (14 male, 16 female) were harvested in McCall DAU (Tables 2 and 3) during the 2005-2006 season. The 2005-2006 harvest was 7% higher than reported in 2004-2005, and was 50% above the minimum objective average harvest (Figure 6).

Age data indicate that most lions aged in the 2004-2005 harvest were adult males and females (Figure 7). Three-year average age data indicate that 65% of the male harvest was comprised of the 3- to 7-year-old age class (Figure 8). None of the harvested males were  $\geq 8$  years old.

Use of hounds is the predominant method of harvest for mountain lions in this DAU (Figure 9). The proportion of females in the harvest was 53% in 2005 (Figure 10). The female lion harvest quota was met in Unit 31 in this DAU in 2003, but not during the 2004-2005 and 2005-2006 seasons.

### Depredations

One lion was killed in response to livestock depredation during the reporting period (see Table 1 in the Statewide section).

## **Management Implications**

Female lion harvest quotas, implemented to skew lion harvest toward the male component, 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  $\geq 8$  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.

### **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 units 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 units is to maintain a 3-year running average harvest of  $\geq 30$  lions per year (Table 1), the lowest level harvested during the mid-1990s.

This group of units 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. Because of the proximity of these units to the state's largest human population center, 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 units are very popular among houndsmen. Our 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.

The number of complaints of mountain lions around Boise and the surrounding suburban areas, and in close proximity to human inhabitations elsewhere in the DAU, seem to have increased in recent years. This perceived trend is likely a result of changes in mountain lion numbers and/or distribution in response to thriving deer and elk populations in these areas, as well as the spread of human development further into habitat occupied by deer & elk. Regional staff began tracking public reports of mountain lion sightings and encounters throughout the region in 2001. All reports are carefully evaluated and responded to as circumstances merit. Any mountain lion captured in a developed area or any mountain lion that exhibits behavior that suggests it poses a threat to public safety will be permanently removed from the wild.

## **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 units of this DAU to allow ample sport harvest opportunity but ensure the lion populations would not be over-harvested. Only Unit 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 42 mountain lions in Boise-Stanley DAU (Tables 2 and 3) during the 2005-2006 season, including 21 females, 20 males, and 1 undetermined. Harvest was 17% higher than during the 2004-2005 season and 40% above the minimum harvest objective (Figure 11). The 3-year average (2003-2005) harvest of 43 lions per year exceeded the minimum harvest objective (Table 1).

The proportion of females in the harvest has ranged 39-64% over the last 3 years (Figure 12). Houndsmen accounted for 73% of mountain lions harvested in the DAU over the last 3 years (Figure 13), while 17% of the lions taken were killed by hunters incidental to a deer or elk hunt.

Age structure information (Figure 14) has fluctuated widely over the last 3 years and must be interpreted with caution. The lack of mature ( $\geq 8$  years) male lions harvested from 2002-2004 (Figure 15) reflects the heavy hunting pressure in these units. Age information for lions harvested during the 2005-2006 season was not yet available for this report.

Despite snow accumulation above long-term average, no female lion quotas were met in units in this DAU during the 2005-2006 season.

### **Depredations**

Most lion depredations are handled by USDA-APHIS Wildlife Services in accordance with the interagency MOU between Wildlife Services and the Department. Two mountain lions were killed for depredation on domestic sheep in this DAU during the reporting period (see Table 1 in the Statewide section).

### **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. Approximately 30 observations of mountain lions within developed areas were reported by the public in Boise-Stanley DAU during 2003-2004. Most reports originated from sightings along Warm Springs Avenue, within city limits, on the northeast end of Boise over a period of several months. A young male lion (est. 10-14 months) was captured after being hit by a vehicle in the area and was

destroyed. The number of mountain lion observations reported in the greater Boise urban area declined considerably during 2004-2005, but occasional sightings continue. Between 1 July 2005 and 30 June 2006, approximately 19 sightings of mountain lions were reported by the public within, or in close proximity to, city limits of Boise and Eagle. Several 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 the male component, seem to be working in most of the units in this DAU. No older ( $\geq 8$  years) male lions have been taken from these units during the last 4 years. 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.

### **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 sport harvest of mountain lions in those units where there is a concern about the impacts of lion predation on California bighorn sheep herds. Generous seasons are offered (Appendix A), particularly in Units 41 and 42, where we have the greatest concern about the impacts of mountain lions on bighorn sheep. Female harvest quotas are currently in place in each of these units 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 Unit 40, and the 10-female quota in Units 41 and 42 has never been reached. The harvest objective for this group of units is to maintain a 3-year running average harvest of  $\geq 20$  lions per year (Table 1).

### **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 units 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 Unit 41 and the Owyhee River drainage in Unit 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 Units 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 units have been taken with the use of electronic calls since the rule was implemented.

### **Harvest Characteristics**

Hunters harvested 17 mountain lions (6 females, 10 males, and 1 undetermined) in the Owyhee DAU (Tables 2 and 3) during the 2005-2006 season. Harvest decreased 11% from the 2004-2005 season, but the 3-year running average (2003-2005) harvest of 23 lions per year remains above the DAU minimum harvest objective of 20 lions per year (Figure 16).

Harvest levels during the 2003-2004 season may have been influenced by high prices for bobcat pelts, and the declines in 2004-2005 and 2005-2006 are likely a reflection of reduced snowfall and poor tracking conditions.

Females comprised 38% of the harvest in 2005-2006 (Figure 17).

Houndsmen accounted for 75% of mountain lions harvested in the DAU over the last 3 years (Figure 18), whereas 18% of the lions taken were killed by hunters incidental to a deer or controlled elk hunt.

Age structure information (Figure 19) must be interpreted with caution. The small percentage of mature ( $\geq 8$  years) male lions harvested from 2002-2004 (Figure 20) may reflect heavy hunting pressure on lions in accessible portions of these units, resulting in harvest being comprised of young animals and recent dispersers to the area. Age information for lions harvested during the 2005-2006 season was not yet available for this report.

### **Depredations**

Mountain lion depredations are rarely reported in this area (see Table 1 in the Statewide section), probably due to its remote nature and lack of domestic sheep grazing activities. USDA Wildlife Services responded to several reports of mountain lion harassment of horses in recent years, but no lions were killed for depredation purposes during the 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 units in this DAU because the female quota is rarely reached.

Table 1. Mountain lion plan harvest objectives, Southwest Region, 2002-2004.

DAU	Management goals	Current status
Warren	Minimum 3-year average harvest of 15 lions	17
	Sex/age composition - <b>To be established</b>	Unknown
	Percent males 3+ years - <b>To be established</b>	71%
	Catch-Per-Unit Effort - <b>To be established</b>	No data
McCall	Minimum 3-year average harvest of 20 lions	32
	Sex/age composition - <b>To be established</b>	Unknown
	Percent males 3+ years - <b>To be established</b>	65%
	Catch-Per-Unit Effort - <b>To be established</b>	No data
Boise-Stanley	Minimum 3-year average harvest of 30 lions	43
	Sex/age composition - <b>To be established</b>	Unknown
	Percent males 3+ years - <b>To be established</b>	71%
	Catch-Per-Unit Effort - <b>To be established</b>	No data
Owyhee	Minimum 3-year average harvest of 20 lions	23
	Sex/age composition - <b>To be established</b>	Unknown
	Percent males 3+ years - <b>To be established</b>	57%
	Catch-Per-Unit Effort - <b>To be established</b>	No data

Table 2. Mountain lion harvest by DAU, Southwest Region, 1997-2005.

DAU Unit	Year								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Warren</b>									
19A	2	3	5	10	6	5	1	1	3
20A	1	1	4	6	4	2	1	0	1
25	9	10	10	7	9	5	8	4	6
26	5	3	5	4	2	7	4	2	3
27	19	21	17	7	10	2	6	2	10
Total	36	38	41	34	31	21	20	9	23
<b>McCall</b>									
22	18	5	6	6	19	5	6	8	5
23	24	19	11	14	15	8	15	14	13
24	3	4	8	8	2	5	5	0	7
31	5	11	7	10	9	3	7	3	5
32A	15	15	6	9	2	6	6	3	3
Total	65	54	38	47	47	27	39	28	33
<b>Boise-Stanley</b>									
32	1	4	2	6	10	3	8	5	10
33	15	20	12	17	15	18	11	6	7
34	0	0	1	0	1	2	0	0	0
35	7	7	5	6	9	1	6	1	1
36	1	2	1	2	0	1	0	2	1
39	20	23	23	37	32	22	27	22	26
Total	44	56	44	68	67	47	52	36	45
<b>Owyhee</b>									
40	11	11	13	33	18	19	17	8	10
41	2	3	3	6	6	2	6	4	6
42	1	3	2	3	1	0	7	3	1
46	1	0	0	0	2	2	1	4	0
47	4	2	5	2	4	4	2	0	2
Total	19	19	23	44	31	27	33	19	19

Table 3. Mountain lion harvest by weapon and sex, Southwest Region, 1999-2005.

DAU	Year	Sex	Weapon					Total
			Rifle	Archery	Muzzleloader	Handgun	Other	
Warren	1999	M	13	1	1	4	0	19
		F	13	4	0	5	0	22
	2000	M	10	2	1	0	0	13
		F	14	1	0	5	1	21
	2001	M	9	3	1	2	0	15
		F	11	3	0	2	0	16
	2002	M	7	2	3	2	0	14
		F	4	2	0	1	0	7
	2003	M	4	1	0	0	0	5
		F	10	1	0	4	0	15
	2004	M	3	2	0	1	0	6
		F	3	0	0	0	0	3
	2005	M	9	2	0	3	0	14
		F	6	1	0	1	1	9
McCall	1999	M	14	4	1	3	0	22
		F	9	0	0	6	1	16
	2000	M	15	3	0	7	0	25
		F	14	2	0	6	0	22
	2001	M	14	4	1	8	1	28
		F	13	1	1	4	0	19
	2002	M	12	0	0	2	0	14
		F	11	0	0	2	0	13
	2003	M	14	1	0	6	0	21
		F	13	1	0	4	0	18
	2004	M	15	1	0	3	0	19
		F	8	1	0	0	0	9
	2005	M	9	1	0	4	0	14
		F	9	2	0	5	0	16
Boise-Stanley	1999	M	11	7	1	9	0	28
		F	10	3	0	3	0	16
	2000	M	13	8	1	16	0	38
		F	13	6	0	9	0	28
	2001	M	19	3	0	14	2	38
		F	17	2	0	8	2	29
	2002	M	14	5	0	8	2	29
		F	8	3	0	6	1	18
	2003	M	15	2	1	9	0	27
		F	15	2	0	7	1	25
	2004	M	6	4	0	2	1	13
		F	15	2	0	5	1	23
	2005	M	14	3	0	4	0	21
		F	1	0	0	0	0	1

Table 3. Continued.

DAU	Year	Sex	Weapon				Total	
			Rifle	Archery	Muzzleloader	Handgun		Other
Owyhee	1999	M	7	0	0	6	0	13
		F	6	0	0	3	0	9
	2000	M	11	0	1	8	0	20
		F	14	1	0	8	0	23
	2001	M	7	1	0	7	0	15
		F	10	0	0	5	1	16
	2002	M	12	0	1	2	0	15
		F	12	0	0	0	0	12
	2003	M	12	2	0	4	1	19
		F	9	2	0	3	0	14
	2004	M	7	1	0	2	0	10
		F	8	0	0	1	0	9
	2005	M	4	1	0	1	0	6
		F	1	0	0	0	0	1

**Total Harvest, 1996-2005**  
**Units 19A, 20A, 25, 26, 27**

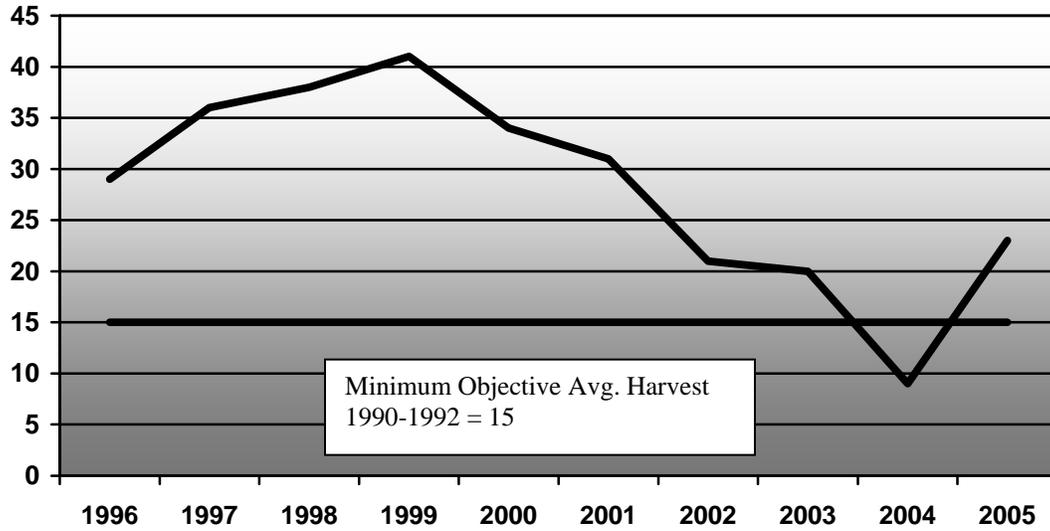
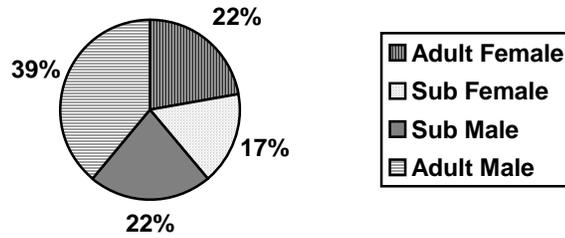
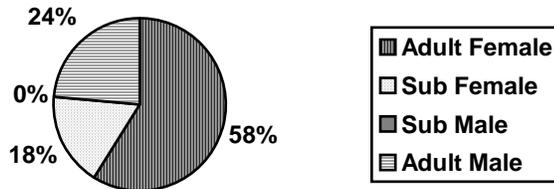


Figure 1. Mountain lion harvest, Warren DAU, Southwest Region, 1996-2005.

2002



2003



2004

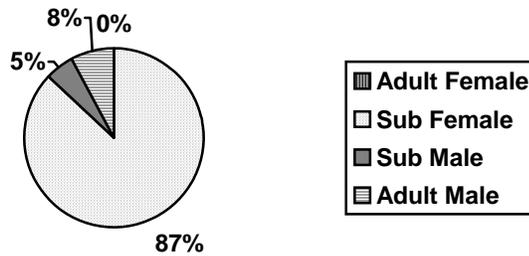


Figure 2. Sex and age composition of harvest, Warren DAU, Southwest Region, 2002-2004.

### 2002-2004

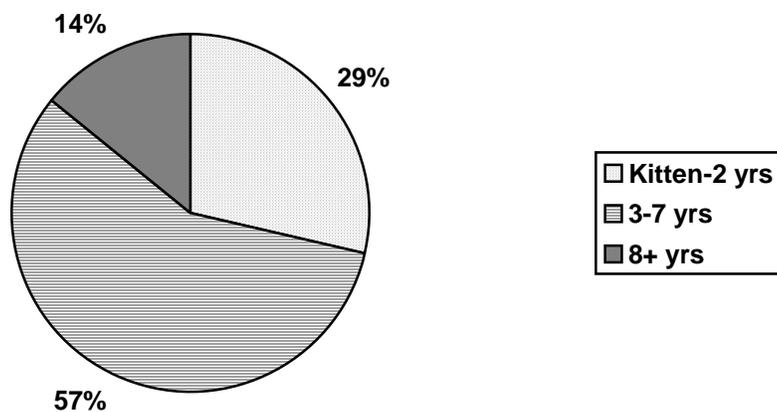


Figure 3. Average age composition of male harvest, Warren DAU, Southwest Region, 2002-2004.

### Method of Take, 2003-2005 Units 19A, 20A, 25, 26, 27

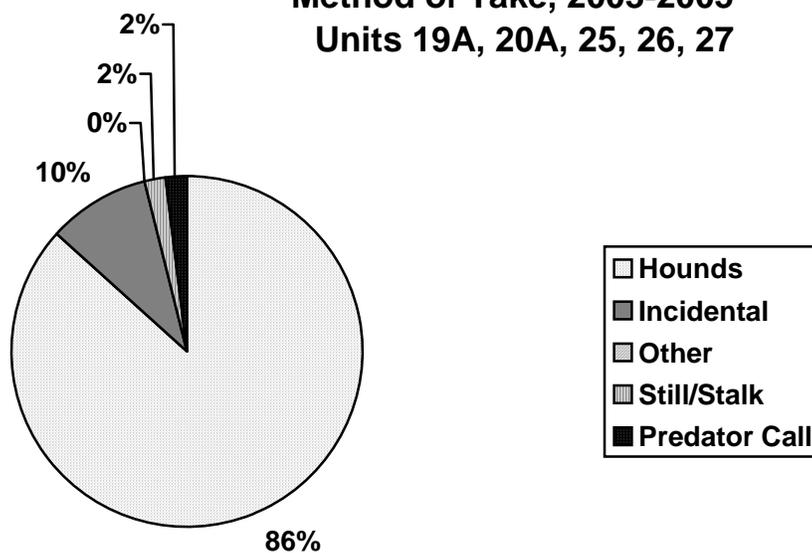


Figure 4. Harvest by method, Warren DAU, Southwest Region, 2003-2005.

**Harvest by Sex, 1996-2005**  
**Units 19A, 20A, 25, 26, 27**

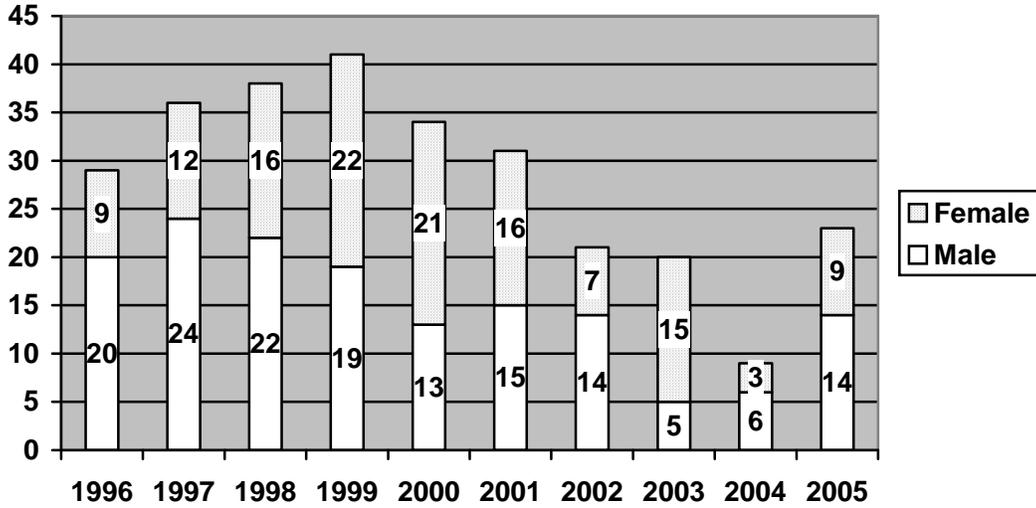


Figure 5. Harvest by sex, Warren DAU, Southwest Region, 1996-2005.

**Total Harvest, 1996-2005**  
**Units 22, 23, 24, 31, 32A**

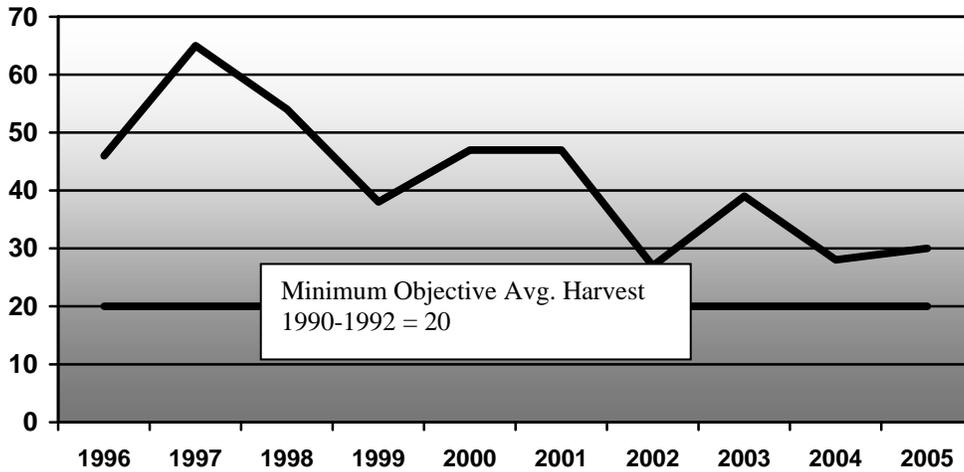
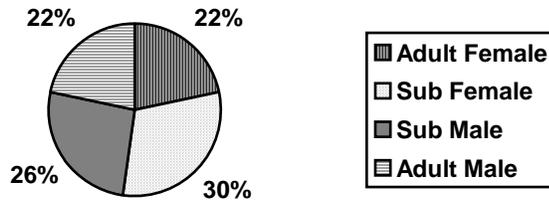
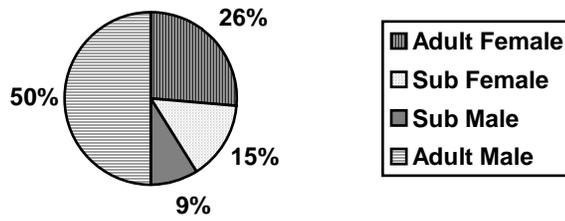


Figure 6. Mountain lion harvest, McCall DAU, Southwest Region, 1996-2005.

**2002**



**2003**



**2004**

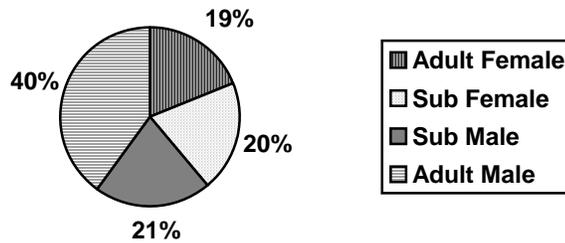


Figure 7. Sex and age composition of harvest, McCall DAU, Southwest Region, 2002-2004.

### 2002-2004

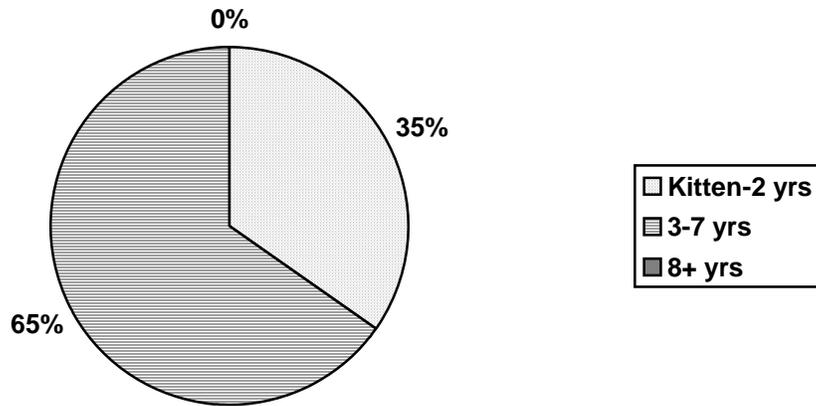


Figure 8. Average age composition of male harvest, McCall DAU, Southwest Region, 2002-2004.

### Method of Take, 2003-2005 Units 22, 23, 24, 31, 32A

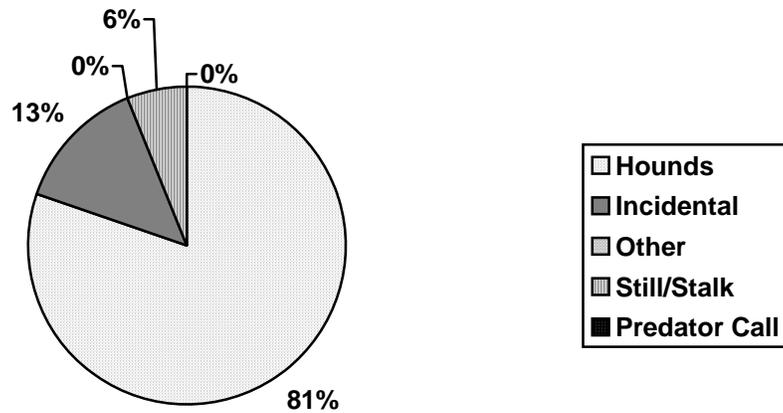


Figure 9. Harvest by method, McCall DAU, Southwest Region, 2003-2005.

**Harvest by Sex, 1996-2005**  
**Units 22, 23, 24, 31, 32A**

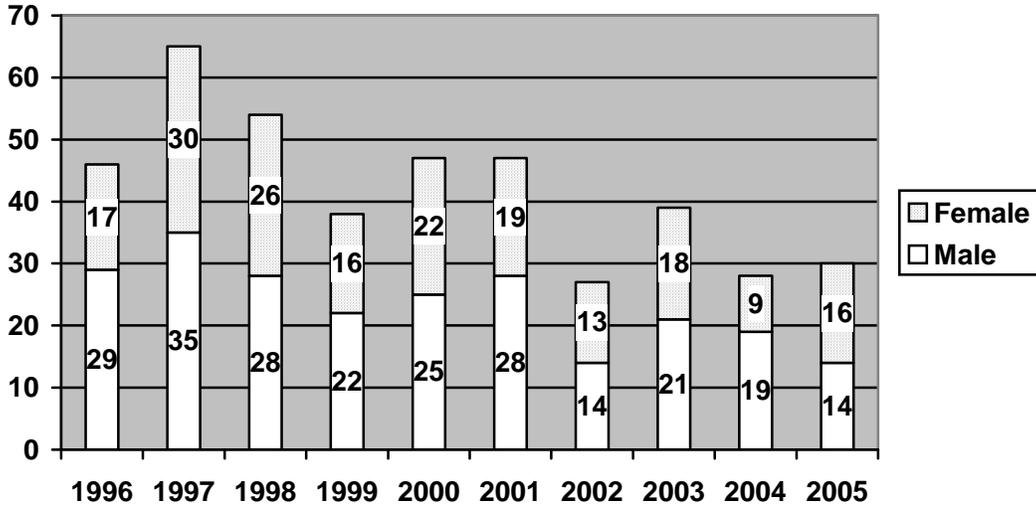


Figure 10. Harvest by sex, McCall DAU, Southwest Region, 1996-2005.

**Total Harvest, 1996-2005**  
**Units 32, 33, 34, 35, 36, 39**

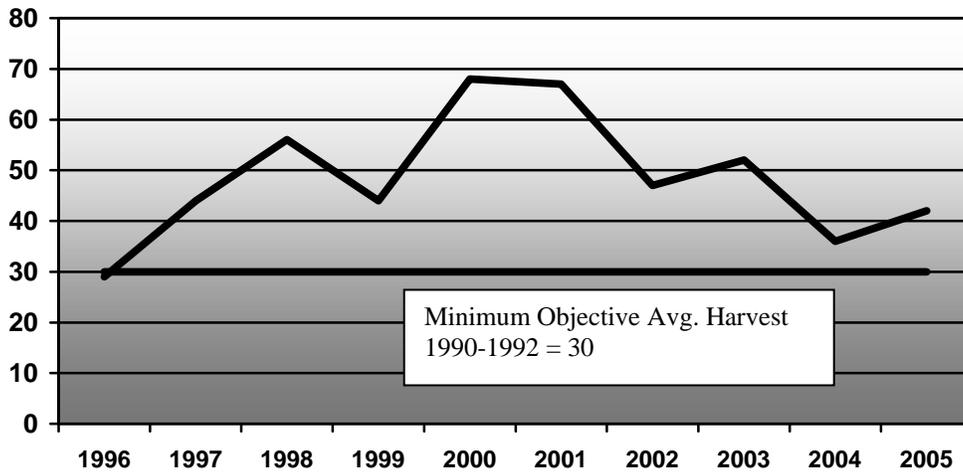


Figure 11. Mountain lion harvest, Boise-Stanley DAU, Southwest Region, 1996-2005.

**Harvest by Sex, 1996-2005**  
**Units 32, 33, 34, 35, 36, 39**

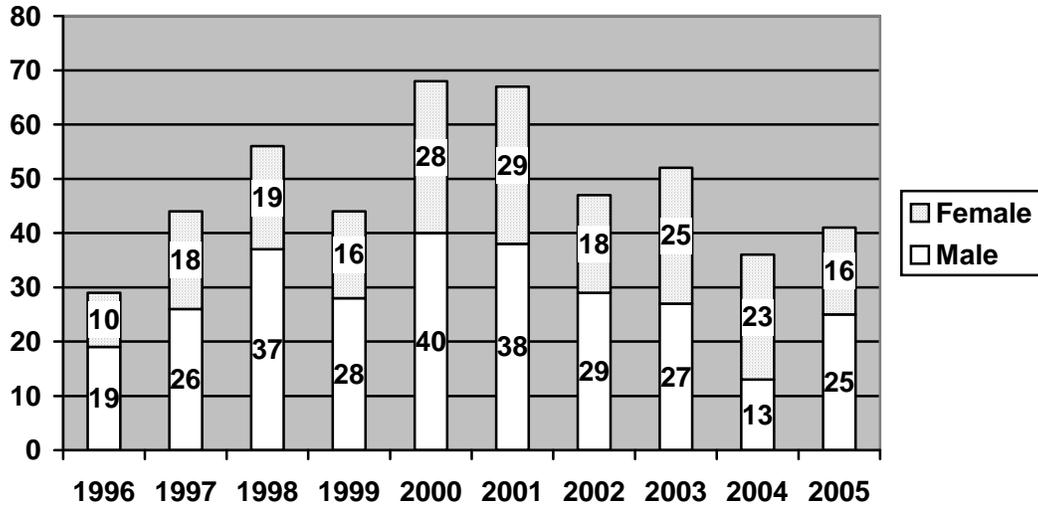


Figure 12. Harvest by sex, Boise-Stanley DAU, Southwest Region, 1996-2005.

**Method of Take, 2003-2005**  
**Units 32, 33, 34, 35, 36, 39**

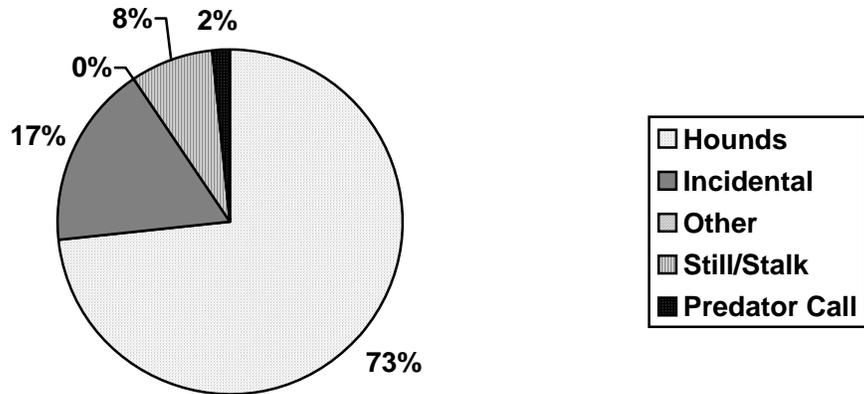
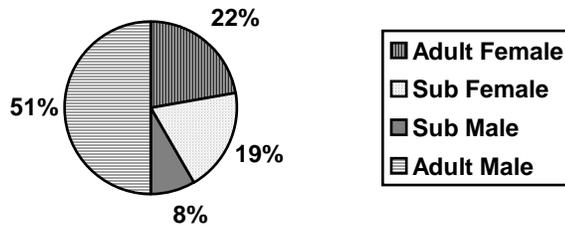
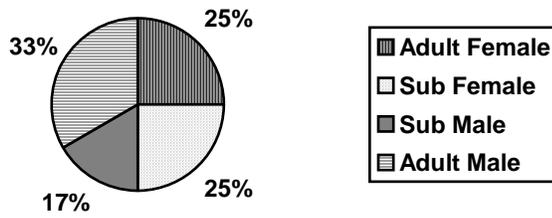


Figure 13. Harvest by method, Boise Stanley DAU, Southwest Region, 2003-2005.

2002



2003



2001

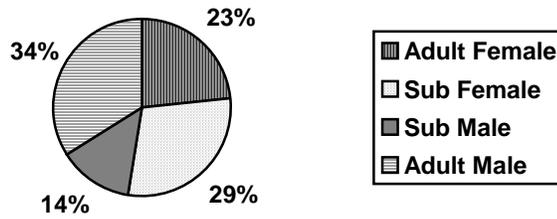


Figure 14. Sex and age composition of harvest, Boise-Stanley DAU, Southwest Region, 2002-2004.

**2002-2004**

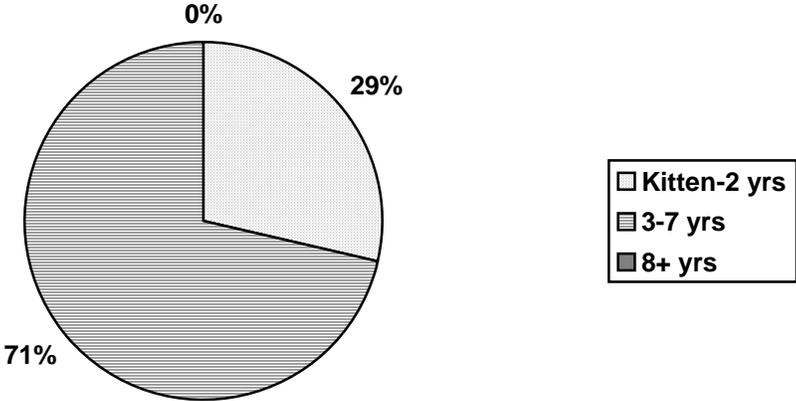


Figure 15. Average age composition of male harvest, Boise-Stanley DAU, Southwest Region, 2002-2004.

**Total Harvest, 1996-2005  
Units 40, 41, 42, 46, 47**

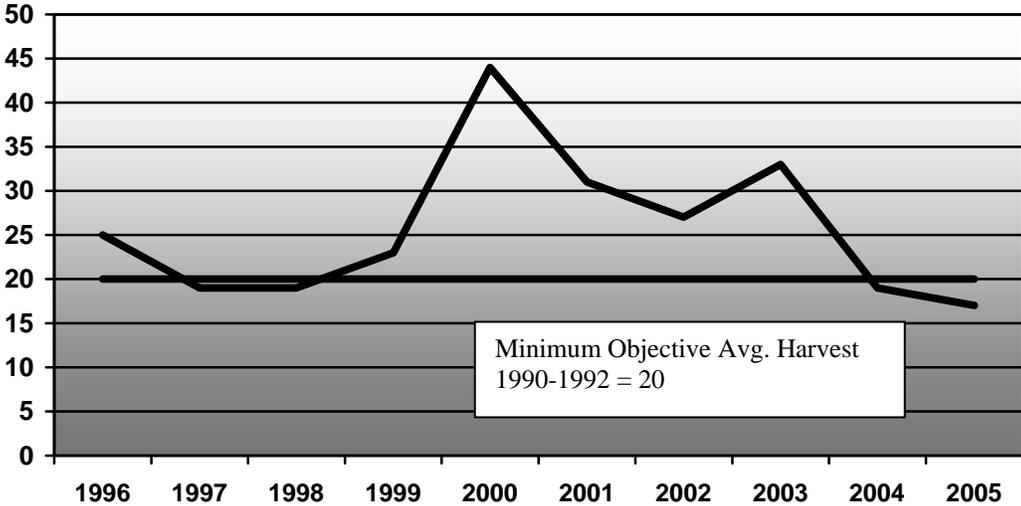


Figure 16. Mountain lion harvest, Owyhee DAU, Southwest Region, 1996-2005.

**Harvest by Sex, 1996-2005**  
**Units 40, 41, 42, 46, 47**

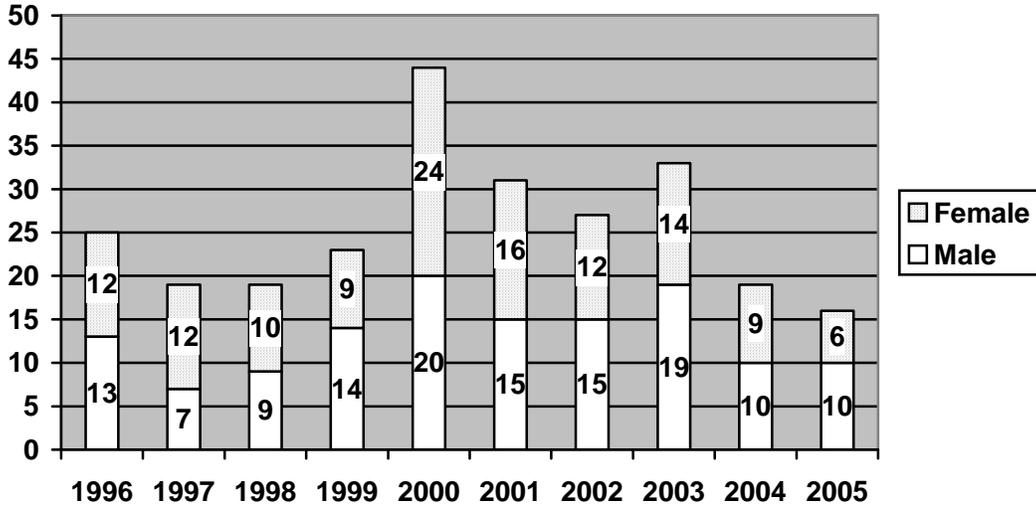


Figure 17. Harvest by sex, Owyhee DAU, Southwest Region, 1996-2005.

**Method of Take, 2003-2005**  
**Units 40, 41, 42, 46, 47**

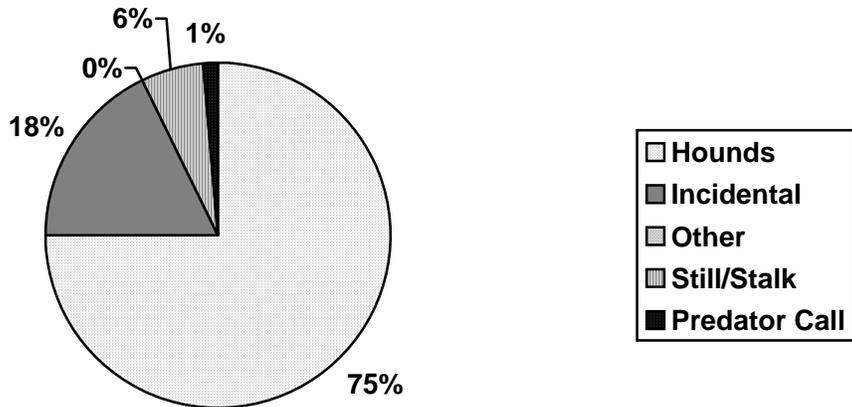
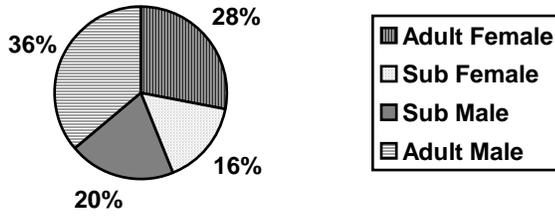
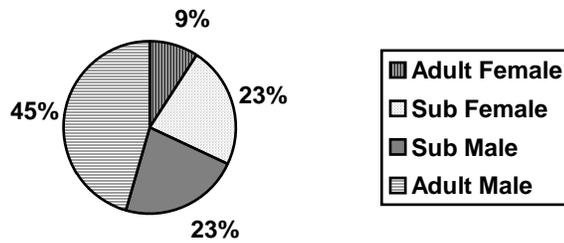


Figure 18. Harvest by method, Owyhee DAU, Southwest Region, 2003-2005.

**2002**



**2003**



**2004**

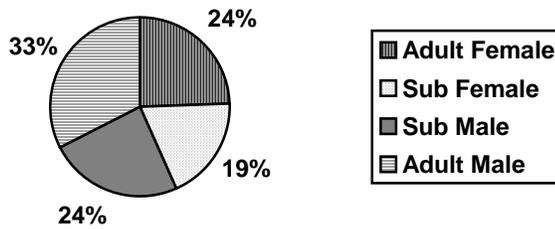


Figure 19. Sex and age composition of harvest, Owyhee DAU, Southwest Region, 2002-2004.

**2002-2004**

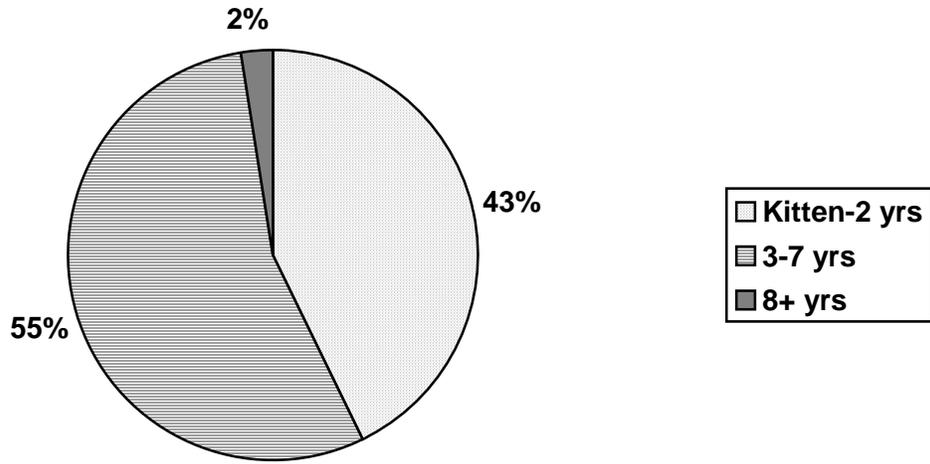


Figure 20. Average age composition of male harvest, Owyhee DAU, Southwest Region, 2002-2004.

**PROGRESS REPORT  
SURVEYS AND INVENTORIES**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Mountain Lion Surveys and</u>
<b>PROJECT:</b>	<u>W-170-R-30</u>		<u>Inventories</u>
<b>SUBPROJECT:</b>	<u>4</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>8</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2005 to June 30, 2006</u>		

**MAGIC VALLEY REGION**

**Abstract**

Mandatory reports indicated a harvest of 49 mountain lions in the Sun Valley and Oakley DAUs during the 2005-2006 season, an increase of 40% from the 2004-2005 season when 35 mountain lions were taken. Twenty-one mountain lions were harvested in Sun Valley DAU and 28 in Oakley DAU. Two mountain lions were killed in the Oakley DAU in response to depredations and/or to human safety concerns. The female quota was not reached in any of the units within these 2 DAUs. Twenty of 49 (41%) mountain lions harvested in 2005-2006 were females. Hound hunting accounted for 78% of the harvest in these DAUs. Most lions were taken with rifles, which accounted for 58% of the harvest.

**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 will be determined during the upcoming year (Table 1).

**Depredations**

Mountain lion depredations are uncommon in the Sun Valley and Oakley DAUs with an average of 1 depredation per year since 2000. Two depredations were reported in these DAUs during the reporting period (see Table 1 in the Statewide section). One additional depredation occurred in Unit 45 which is in Magic Valley Region but is not in either of the DAUs reported by the region.

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

### Historical Information

Sun Valley DAU has accounted for an average of 41% 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 units; however, in recent years, depredations have been rare.

### Harvest Characteristics

Twenty-one mountain lions were harvested in Sun Valley DAU during the 2005-2006 season (Table 2). This level was higher than the 1990-1992 minimum harvest objective of 13 (Figure 1), and equaled the 10-year high (21) harvested in 2003-2004. Fourteen (67%) of 21 mountain lions harvested in this DAU were taken with rifles (Table 3). Five (23%) of the remaining lions were harvested with handguns, 1 was harvested with a muzzleloader, and 1 was harvested with a bow. Nine (43%) of the 21 lions harvested were female. The season structure has remained constant in recent years with a season length of 214 days beginning 30 August (Appendix A). The female quota was not met in Units 43, 44, 48, or 49 during the 2005-2006 season; there are currently no female quotas in place for Units 36A and 50.

Age data from the 2005-2006 harvest season is not currently available. Age data from the 2002, 2003, and 2004 harvest seasons ( $n = 52$  known-age animals) indicated that adult lions ( $\geq 3$  years old) comprised 58%, 47%, and 40% of the harvest, respectively (Figure 2). Adult female harvest decreased from 63% in 2002 to 55% in 2004. Total male harvest, which includes both adult and sub-adult males, decreased from 53% in 2002 to 44% of the total harvest in 2004. Of known-age males ( $n = 28$ ), 36% were  $\geq 3$  years old across the last 3 years (Figure 3).

Hunting with hounds accounted for 69% of the mountain lion harvest over the past 3 years (Figure 4). From 1996-2005, males comprised 60% of the total harvest in this DAU (Figure 5).

### Management Implications

Total harvest in this DAU increased from 7 in 1995 to 21 in 2005. The average of 15 lions harvested annually over the past 10 years exceeds the minimum objective of 13 lions. The increase in harvest appears to correspond with the increase in prey species (deer and elk) present in this DAU during the same time period. As prey numbers fluctuate, harvest levels may need to be manipulated in order to continue to meet established objectives.

Distribution of harvest rates between the sexes has also remained relatively stable over the past 10 years. The 2 younger age classes consistently comprise the majority of the harvest, and there has been limited harvest of older age-class ( $\geq 8$  years) mountain lions. These harvest characteristics may indicate that this population of mountain lions is growing. Further analysis of data during the upcoming year will be necessary to determine management goals and techniques the Department will utilize to regulate harvest of the various sex and age classes within the population.

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

### Historical Information

Units in Oakley DAU have accounted for an average of 59% of the mountain lion harvest in Magic Valley Region during the last 10 years. Unit 54 consistently has the highest annual mountain lion harvest of any management unit in the region.

Most of the units within this DAU have had female quotas since the 1980s. Therefore, female harvest in these units has generally been very conservative. However, it should be noted that female quotas have increased regularly over the past several years, and regrouping of units has taken place numerous times. A historical perspective of female quotas and grouping of units can be found in the 2001-2002 report.

### Harvest Characteristics

Twenty-eight mountain lions were harvested in Oakley DAU during the 2005-2006 season (Table 2). This level exceeded the 1990-1992 minimum harvest objective of 12 (Figure 6) and was 16% higher than the 19 lions harvested in 2004-2005. Fourteen (50%) of 28 lions harvested were taken with rifles. Nine (32%) of the remaining mountain lions were taken with handguns, while 5 (18%) were taken with a bow (Table 3). The season structure has remained constant in recent years with a season length of 214 days beginning 30 August (Appendix A). The female quota was not met in any of the units in Oakley DAU during this reporting period.

Age data from the 2005-2006 harvest season is not currently available. Age data from the 2002, 2003, and 2004 harvest seasons indicated that harvest composition has varied widely (Figure 7). Fifty-two percent of males harvested between 2001 and 2003 were 2 years or younger (Figure 8). No older age-class ( $\geq 8$  years) males were harvested during this 3-year period. Hunting with hounds accounted for 82% of the mountain lion harvest during the past 3 years (Figure 9). From 1996-2005, male harvest averaged 60% of the total harvest in this DAU (Figure 10).

### Management Implications

Current harvest strategies in this DAU have resulted in slightly decreased annual harvest since 1996 but have still allowed the DAU to remain well above the minimum objective average harvest of 12. This decreasing trend may be the result of reduced prey species (specifically mule deer) abundance and reduced harvest by outfitted mountain lion hunters. 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 has also fluctuated during the past 10 years. In general, males have comprised the majority of the harvest. 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 to decreasing. Further analysis of data during the upcoming year will be necessary to determine management goals and techniques the

Department will utilize to regulate harvest of the various sex and age classes within the population.

Table 1. Mountain lion plan harvest objectives, Magic Valley Region, 2002-2004.

DAU	Management goals	Current status
Sun Valley	Minimum 3-year average harvest of 13 lions	21
	Sex/age composition - <b>To be established</b>	Stable
	Percent males 3+ years - <b>To be established</b>	46%
	Catch-Per-Unit Effort - <b>To be established</b>	No data
Oakley	Minimum 3-year average harvest of 12 lions	28
	Sex/age composition - <b>To be established</b>	Stable
	Percent males 3+ years - <b>To be established</b>	44%
	Catch-Per-Unit Effort - <b>To be established</b>	No data

Table 2. Mountain lion harvest by DAU, Magic Valley Region, 1997-2005.

DAU Unit	Year									
	1997	1998	1999	2000	2001	2002	2003	2004	2005	
Sun Valley										
36A	4	5	7	4	5	3	5	1	2	
43	3	1	3	4	6	2	4	1	5	
44	2	1	0	3	1	0	3	0	1	
48	0	0	1	0	0	3	3	0	0	
49	0	3	2	2	2	3	3	4	8	
50	6	2	4	4	5	6	3	10	5	
Total	15	12	17	17	19	17	21	16	21	
Oakley										
54	14	6	12	7	11	8	12	10	11	
55	4	10	6	5	12	5	10	6	7	
56	4	6	4	5	3	5	2	2	8	
57	1	3	0	0	2	3	1	1	2	
Total	23	25	22	17	28	21	25	19	28	

Table 3. Mountain lion harvest by weapon and sex, Magic Valley Region, 1996-2005.

DAU	Year	Sex	Weapon					Total
			Rifle	Archery	Muzzleloader	Handgun	Other	
Sun Valley	1996	M	5	2	0	0	1	8
		F	1	0	0	1	1	3
	1997	M	5	3	0	1	0	9
		F	5	0	0	1	0	6
	1998	M	4	1	0	1	0	6
		F	3	1	0	2	0	6
	1999	M	7	3	0	2	0	12
		F	3	1	1	0	0	5
	2000	M	8	1	0	2	0	11
		F	3	2	0	1	0	6
	2001	M	8	2	0	3	0	13
		F	5	0	0	1	0	6
	2002	M	7	0	0	2	0	9
		F	5	1	0	2	0	8
	2003	M	8	2	0	2	0	12
		F	3	3	0	3	0	9
	2004	M	5	0	0	2	0	7
		F	8	0	1	0	0	9
	2005	M	7	1	1	0	0	9
		F	7	0	0	5	0	12
Oakley	1996	M	6	2	0	13	0	21
		F	3	2	1	6	1	13
	1997	M	7	1	0	4	0	12
		F	5	0	0	6	0	11
	1998	M	9	1	0	4	0	14
		F	5	1	0	4	1	11
	1999	M	6	2	0	3	0	11
		F	6	2	0	2	1	11
	2000	M	5	0	0	4	0	9
		F	4	1	0	3	0	8
	2001	M	4	4	0	5	0	13
		F	7	4	0	4	0	15
	2002	M	6	4	0	7	0	17
		F	2	0	0	2	0	4
	2003	M	8	3	0	4	0	15
		F	3	2	0	5	1	11
	2004	M	5	3	0	5	0	13
		F	2	0	0	4	0	6
	2005	M	5	4	0	8	0	17
		F	9	1	0	1	0	11

**Total Harvest, 1996-2005**  
**Units 36A, 43, 44, 48, 49, 50**

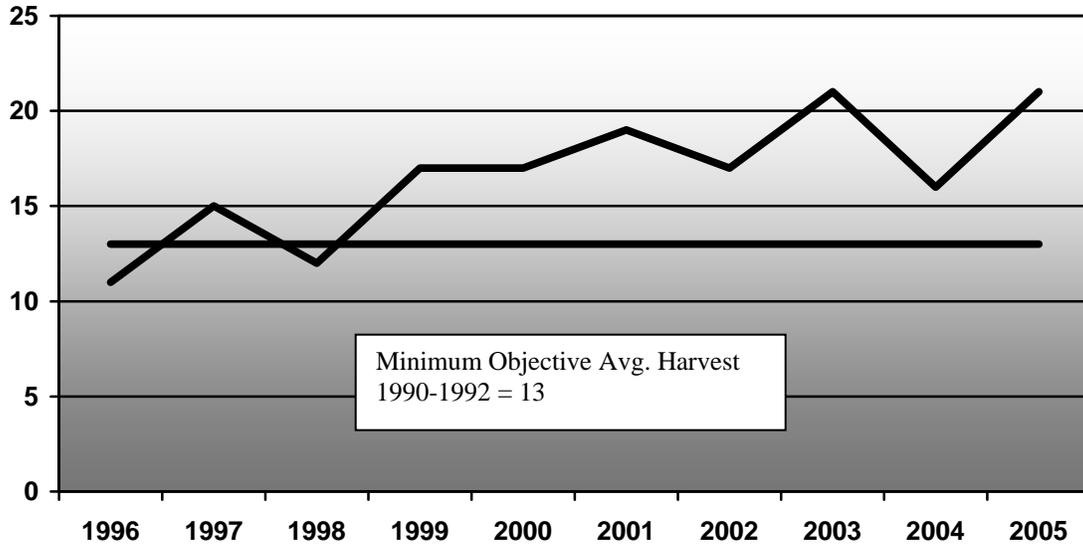
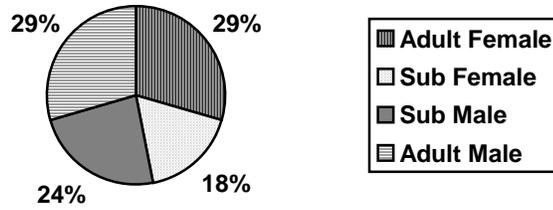
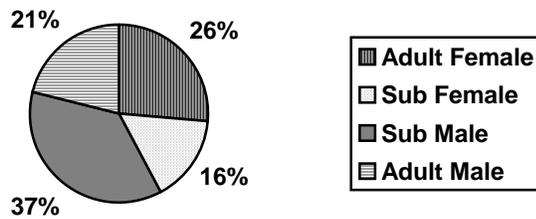


Figure 1. Mountain lion harvest, Sun Valley DAU, Magic Valley Region, 1996-2005.

2002



2003



2004

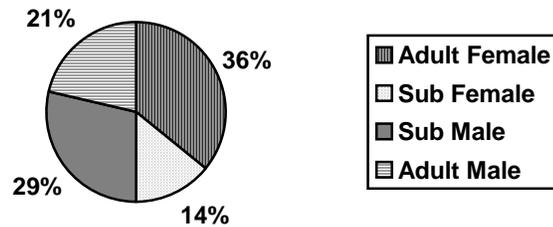


Figure 2. Sex and age composition of harvest, Sun Valley DAU, Magic Valley Region, 2002-2004.

**2002-2004**

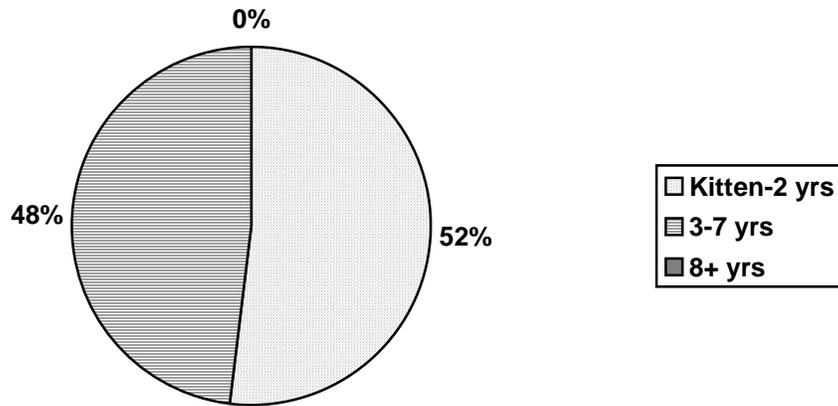


Figure 3. Average age composition of male harvest, Sun Valley DAU, Magic Valley Region, 2002-2004.

**Method of Take, 2003-2005**  
**Units 36A, 43, 44, 48, 49, 50**

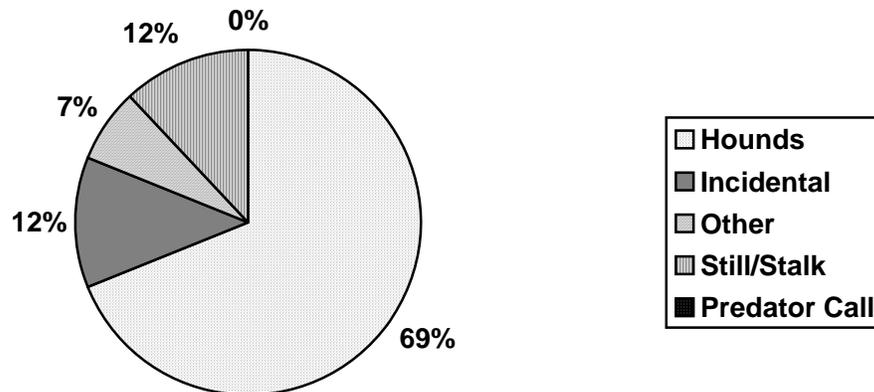


Figure 4. Harvest by method, Sun Valley DAU, Magic Valley Region, 2003-2005.

**Harvest by Sex, 1996-2005**  
**Units 36A, 43, 44, 48, 49, 50**

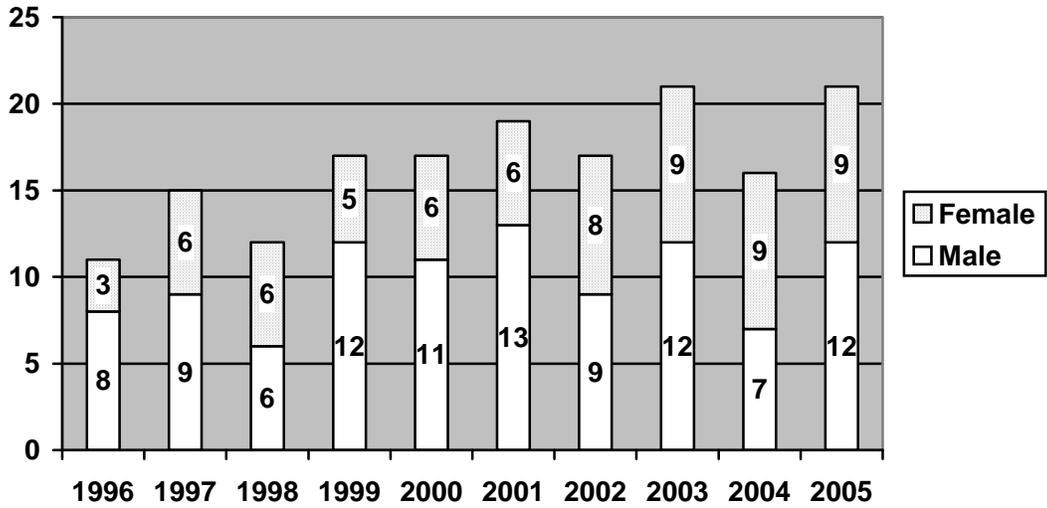


Figure 5. Harvest by sex, Sun Valley DAU, Magic Valley Region, 1996-2005.

**Total Harvest, 1996-2005**  
**Units 54, 55, 56, 57**

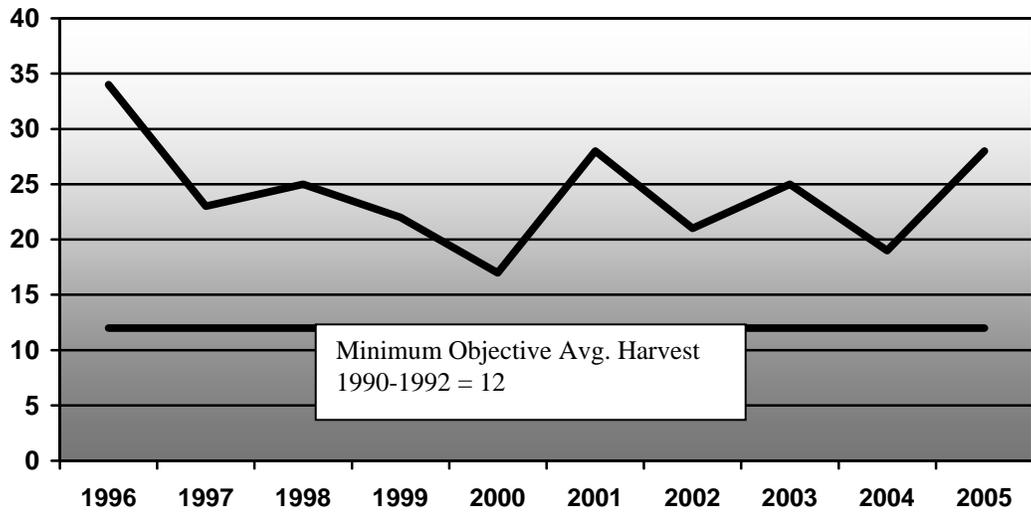
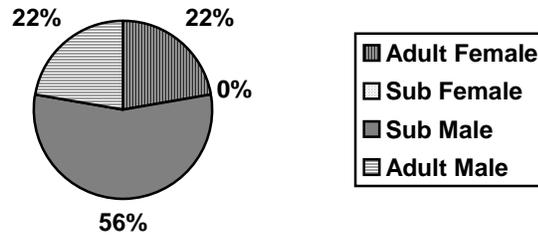
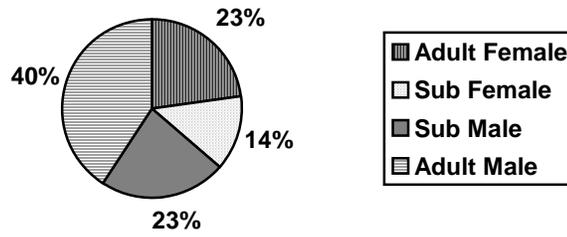


Figure 6. Mountain lion harvest, Oakley DAU, Magic Valley Region, 1996-2005.

2002



2003



2004

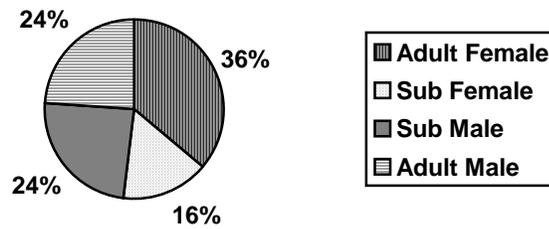


Figure 7. Sex and age composition of harvest, Oakley DAU, Magic Valley Region, 2002-2004.

**2002-2004**

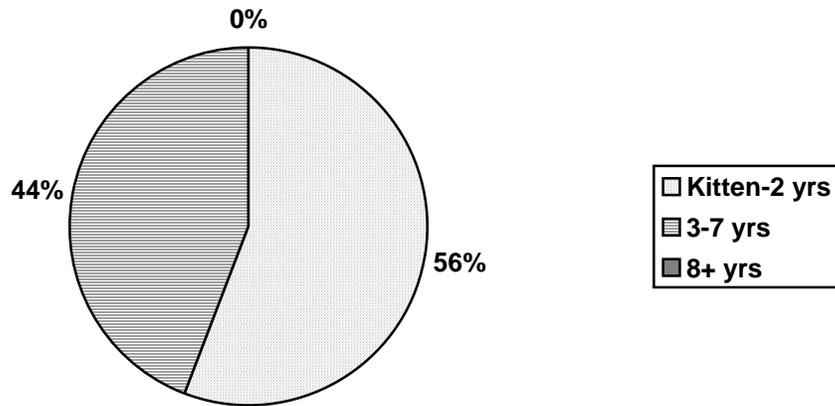


Figure 8. Average age composition of male harvest, Oakley DAU, Magic Valley Region, 2002-2004.

**Method of Take, 2003-2005  
Units 54, 55, 56, 57**

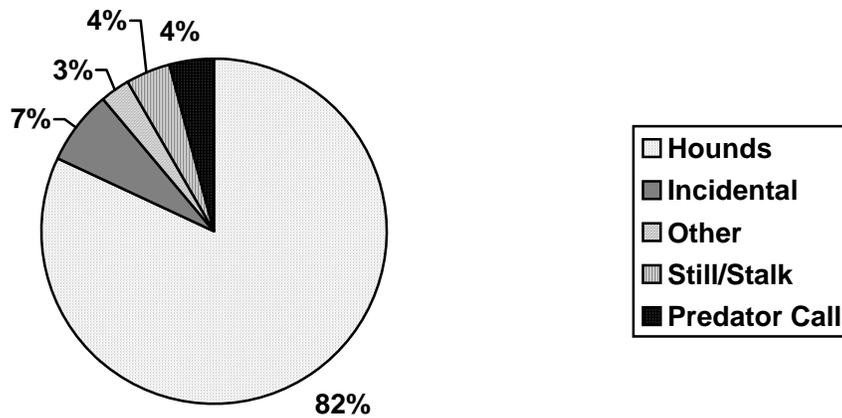


Figure 9. Harvest by method, Oakley DAU, Magic Valley Region, 2003-2005.

**Harvest by Sex, 1996-2005**  
**Units 54, 55, 56, 57**

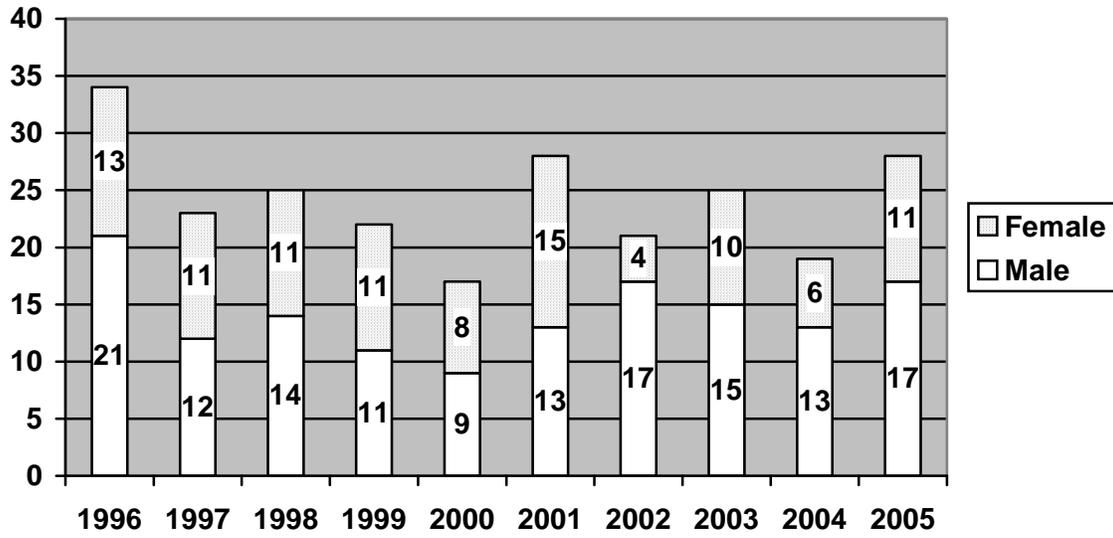


Figure 10. Harvest by sex, Oakley DAU, Magic Valley Region, 1996-2005.

**PROGRESS REPORT  
SURVEYS AND INVENTORIES**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Mountain Lion Surveys and</u>
<b>PROJECT:</b>	<u>W-170-R-30</u>		<u>Inventories</u>
<b>SUBPROJECT:</b>	<u>5</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>I</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>8</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b> <u>July 1, 2005 to June 30, 2006</u>			

**SOUTHEAST REGION**

**Abstract**

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

A total of 50 mountain lions (32 males, 18 females) were reported harvested in the Pocatello DAU during the report period. No mountain lion livestock depredation complaints were reported by USDA Wildlife Services this reporting period.

**Climatic Conditions**

Drought conditions persisted throughout the report period. Spring rainfall increased compared to previous years, 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 2005-2006 were 90-100% 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 (Units 70, 71, 73, 73A, 74) and an east district (Units 66A, 72, 75, 76, 77, 78) with a female harvest quota for each district. In 1999, Unit 74 was moved from the western to eastern quota district. Quotas have varied from 2 females per district several years ago to 15 in the west and 5 in the east during the report period. A district remains open until the female quota has been reached or the end of the season, whichever occurs first. If the female quota is reached prior to the closing date, pursuit-only is allowed until the close of the season. 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.

Units 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’ units 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.

## **Season Structure**

Within the Pocatello DAU, the 2005-2006 mountain lion take season was from 30 August through 31 March (Appendix A). Dogs are prohibited from 1 October to 16 November in Units 70, 71, 72, 73, 73A, and 74; in Unit 69, dogs are prohibited from 1 October to 30 November. The female harvest quota was removed and the Southeast Region now has a general mountain lion hunt for the 2005-2006 season.

## **Harvest Characteristics**

Reported harvest of lions from the DAU for the 2005-2006 season was 50; 32 male and 18 female (Tables 2 and 3, Figures 1 and 2). Age information (cementum annuli from teeth collected via the mandatory check) for lions harvested in that period is not yet available; however, during the period 2002-2004, the proportion of adult lions harvested decreased relative to sub-adults (Figures 3 and 4).

Hound hunting remained the predominant method of take (75%). Incidental harvest (generally lions taken while deer or elk hunting) accounted for most of the remainder (Figure 5).

### **Depredations**

The Wildlife Services branch of USDA Animal and Plant Health Inspection Service 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 (see Table 1 in the Statewide section).

### **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 2:1 and 1:1. The 36% female harvest during the reporting period is comparable to recent years. 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.

Table 1. Mountain lion plan harvest objectives, Southeast Region, 2002-2004.

DAU	Management goals	Current status
Pocatello	Minimum 3-year average harvest of 6 lions	38
	Sex/age composition - <b>To be established</b>	Unknown
	Percent males 3+ years - <b>To be established</b>	50%
	Catch-Per-Unit Effort - <b>To be established</b>	No data

Table 2. Mountain lion harvest by weapon and sex, Pocatello DAU, Southeast Region, 1999-2005.

Year	Sex	Weapon					Total
		Rifle	Archery	Muzzleloader	Handgun	Other	
1999	M	7	2	0	6	0	15
	F	4	1	0	7	0	12
2000	M	8	1	1	6	0	16
	F	4	1	0	10	0	15
2001	M	8	2	0	8	0	18
	F	5	3	0	5	0	13
2002	M	12	3	0	10	0	25
	F	13	1	0	3	6	23
2003	M	7	4	0	12	0	23
	F	3	2	0	6	0	11
2004	M	6	2	1	9	0	18
	F	7	1	1	3	1	13
2005	M	14	5	0	13	0	32
	F	9	3	0	3	3	18

Table 3. Mountain lion harvest by DAU, Southeast Region, 1997-2005.

DAU Unit	Year								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Pocatello									
69	0	0	1	4	12	8	10	9	5
70	3	3	2	2	3	6	5	2	7
71	0	2	4	4	0	4	4	3	9
72	0	1	2	3	2	2	4	4	1
73	8	22	8	9	7	15	7	7	12
73A	8	12	8	5	3	5	1	4	10
74	7	15	2	4	4	6	3	2	6
<b>Total</b>	<b>26</b>	<b>55</b>	<b>27</b>	<b>31</b>	<b>31</b>	<b>46</b>	<b>34</b>	<b>31</b>	<b>50</b>

**Total Harvest, 1996-2005**  
**Units 69, 70, 71, 72, 73, 73A, 74**

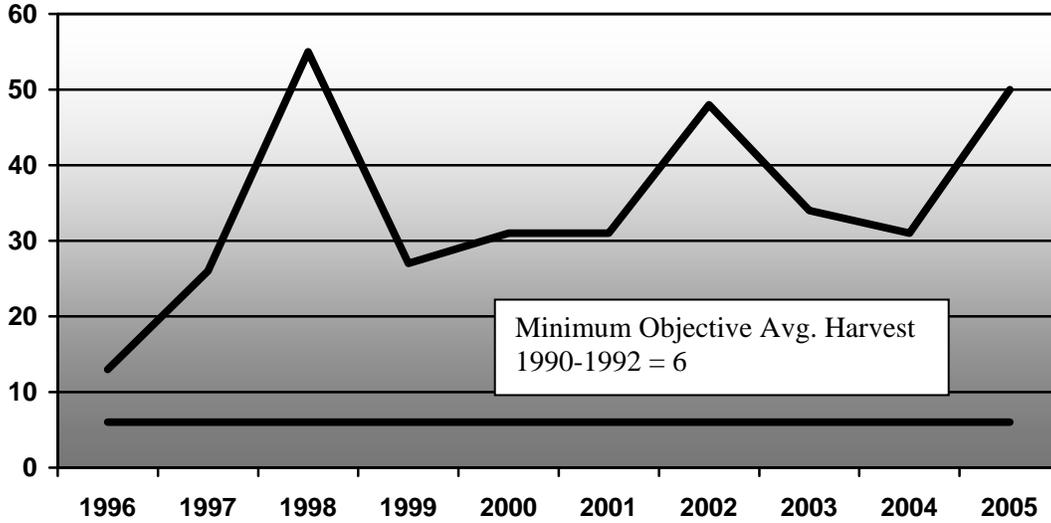


Figure 1. Mountain lion harvest, Pocatello DAU, Southeast Region, 1996-2005.

**Harvest by Sex, 1996-2005**  
**Units 69, 70, 71, 72, 73, 73A, 74**

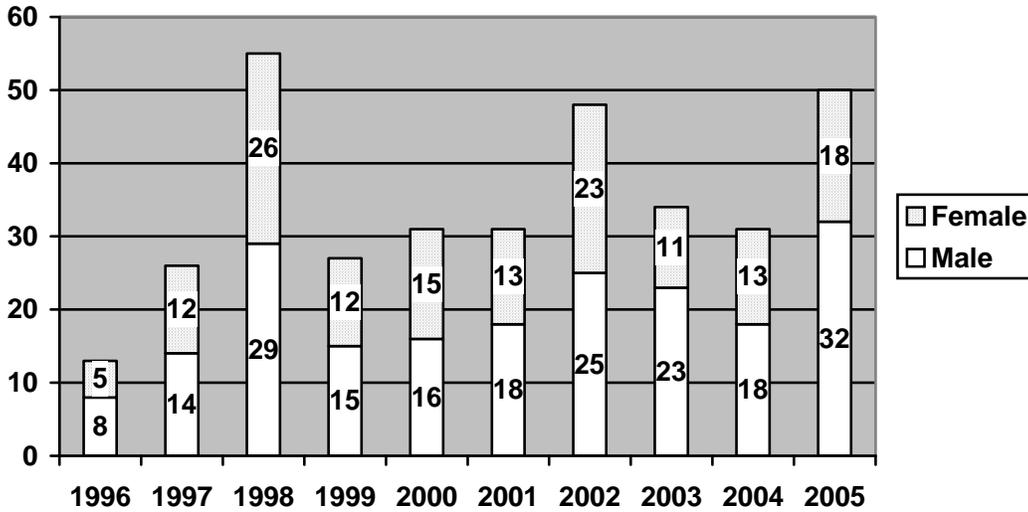
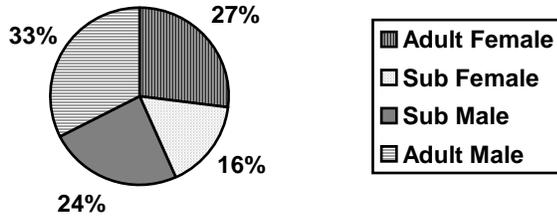
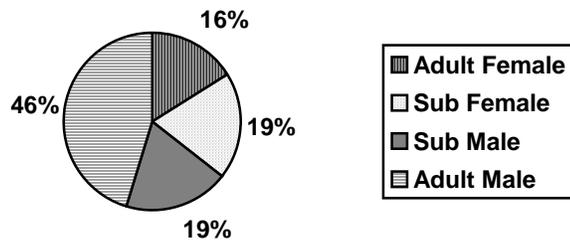


Figure 2. Harvest by sex, Pocatello DAU, Southeast Region, 1996-2005.

2002



2003



2004

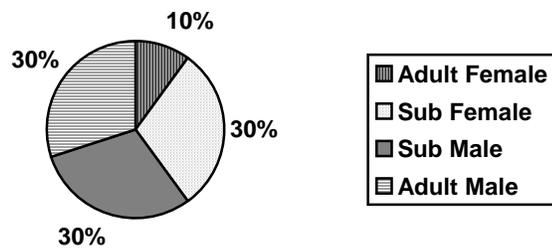


Figure 3. Sex and age composition of harvest, Pocatello DAU, Southeast Region, 2002-2004.

**2002-2004**

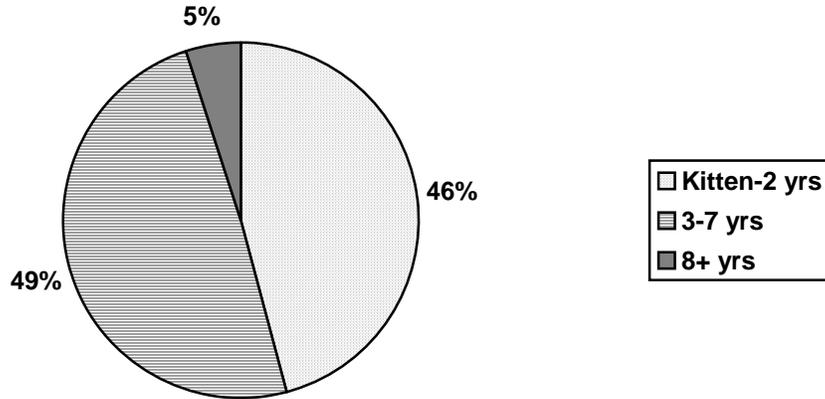


Figure 4. Average age composition of male harvest, Pocatello DAU, Southeast Region, 2002-2004.

**Method of Take, 2003-2005  
Units 69, 70, 71, 72, 73, 73A, 74**

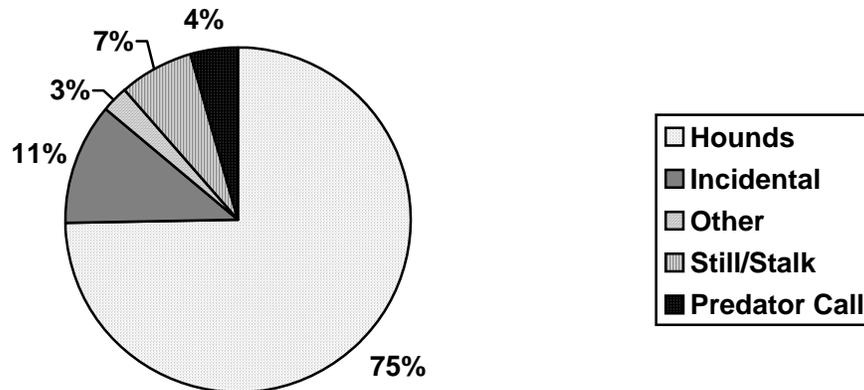


Figure 5. Average harvest by method, Pocatello DAU, Southeast Region, 2003-2005.

**PROGRESS REPORT  
SURVEYS AND INVENTORIES**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Mountain Lion Surveys and</u>
<b>PROJECT:</b>	<u>W-170-R-30</u>		<u>Inventories</u>
<b>SUBPROJECT:</b>	<u>6</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>8</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2005 to June 30, 2006</u>		

**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 include parts of other regions. Upper Snake Region is responsible for reporting on Snake River and Bear Lake-Palisades DAUs.

Ten mountain lions were reported harvested in Snake River DAU, and 35 lions were harvested in Bear Lake-Palisades DAU during the 2005 season (Table 1). 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 units in either DAU during the 2005-2006 season. Information on lion depredation complaints for this reporting period was unavailable from the U.S. Department of Agriculture's Wildlife Service. The region received no claims for livestock losses to mountain lions during 2005-2006.

**Climatic Conditions**

The winter of 2005-2006 had slightly above normal snowfall overall, but snow depth varied widely over the winter, and in different parts of the Upper Snake Region, temperatures were also near normal overall but varied a lot with an unusually warm spell in early January and colder temperatures again in late January and February. These conditions provided only marginal conditions for hound tracking at different times during the lion take season.

(GMUs 50, 51, 58, 59, 59A, 60, 60A, 61, 62, 62A, 63, 63A, 64, 65, 66, 67, 69)

**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 lion 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 Unit 50 with occasional harvest from Unit 51. Very little harvest occurred from Units 58 and 59A. Units 60 through 69 had no lion season until the 1990s when a short limited season was opened for Units 64, 65, and 67. Since then, all other big game management units in Upper Snake Region have been opened to lion hunting. Hunting seasons have also been lengthened and female quotas removed.

In the past, big game units 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, Units 50 and 51 were in DAU 6-2; Units 58, 59, and 59A were in DAU 6-1; Units 63A, 64, 65, 66, 67, and 69 were in DAU 6-3; and Units 60, 60A, 61, 62, and 62A were in DAU 6-4. Unit 63 had no lion season.

Starting with the 2003 season, big game units 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.

Unit 50 is now in the Sun Valley DAU along with Units 36A, 43, 44, 48, and 49. Units 51, 58, 59, and 59A are in the Borah DAU along with Units 29, 30, 30A, 37, and 37A. Units 60, 60A, 61, 62, 62A, 63, and 63A are in Snake River DAU along with Units 38, 45, 52, 52A, 53, 68, and 68A. Units 64, 65, 66, and 67 are in Bear Lake-Palisades DAU along with Units 66A, 75, 76, 77, and 78. Unit 69 is now in the Pocatello DAU along with Units 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 ( $\geq 3$ -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 big game units 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  $\leq 25\%$ .

## **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.

There are 3 sub-populations within Upper Snake Region that may indicate future population declines. Units 64, 65, 66, and 67 within Bear Lake – Palisades DAU had no adult females reported harvested in 2004, 11% adult females in 2003, 38% in 2002, and 12% in 2001. Based on Anderson and Lindzey's (2005) recommendation, the 3-year average for 2003-2001 was 21% and no adult female harvest in 2004 may suggest a lion population in decline. Unit 69 within Pocatello DAU had a reported harvest of 11% adult females in 2004, 10% in 2003, 25% in 2002, and 17% in 2001 for a 4-year average of 17%. Unit 50 within Sun Valley DAU had a harvest of 40% adult females in 2004, 0 adult females in 2003, 33% in 2002, and 17% in 2001.

**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 (Table 2) 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 (Figure 1). From 2003-2005, harvest averaged 8.7 lions per year. This level is over 6 times higher than the 1990-1992 minimum harvest objective of 1.3.

## **Historical Information**

In general, these units 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 units had female quotas for the 2004 or 2005 harvest seasons (Appendix A).

## **Harvest Characteristics**

Harvest has been light (Figure 2) and appears to be primarily opportunistic. Most harvest has been of adult males and sub-adult females (Figures 3 and 4) and occurs by the use of hounds (Figure 5). Harvest has varied from 2-10 for the 1995-2004 seasons and has also varied from all male to all female (Figure 2). Since 1999, most (42%) reported lion harvest has occurred from Unit 45 while no lions were reported from Units 38, 52A, 53, 60A, 63, 63A, or 68 (Table 1).

During the 2003-2005 seasons, 53% of successful mountain lion hunters used hounds (Figure 5) and 62% used rifles to take a mountain lion (Table 3).

### **Depredations**

Information on lion depredation complaints was unavailable for this reporting period from USDA Wildlife Services (see Table 1 in the Statewide section).

### **Management Implications**

Big game units included in this DAU are managed by the Southwest (Unit 38), Magic Valley (Units 45, 52, 52A, and 53), Upper Snake (Units 60, 60A, 61, 62, 62A, 63, and 63A) and Southeast (Units 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, but individual regions, especially Magic Valley Region, will need to monitor harvest for their big game units to ensure it is consistent with local public desires.

### **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 (Table 2) have not been developed for this DAU. The current Mountain Lion Management Plan states that initial harvest goals will be to maintain harvest level on a 3-year running average at or above the 3-year average harvest for the 1990-1992 big game seasons (Figure 6). From 2003-2005, harvest averaged 33.3 lions per year. This level is over 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 (Units 64, 65, 66, and 67) and Southeast (Units 66A, 75, 76, 77, and 78) regions. Mountain lion 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 big game units to liberal with no quotas in other big game units. Units 64, 65, 66, and 67 did not have a female quota for the 2004 harvest season and none of the units in the DAU had a female quota in 2005 (Appendix A).

## **Harvest Characteristics**

Harvest has been quite variable and ranged from 12 in 1996 to 46 in 1998 (Figure 7). Adult ( $\geq 3$  years old) female harvest was 7% in 2004, 27% in 2003, 26% in 2002, and 24% in 2001 (Figure 8). Adult female harvest has exceeded 25% for 3 of the last 4 years 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 2002-2004, 52% of the male harvest was of lions under 2 years old and the other 48% was of male lions aged in the 3 to 7-year-old category; there were no male lions aged 8 years or older, again indicating a lion population being harvested at a level that will result in a declining lion density (Figure 9).

Since 1999, 7% of the harvest has come from Unit 64, 7% from Unit 65, 13% from Unit 66, 1% from Unit 66A, 18% from Unit 67, 13% from Unit 75, 21% from Unit 76, 15% from Unit 77, and 5% from Unit 78.

During the 2003-2005 seasons, an average of 75% of successful mountain lion hunters used hounds (Figure 10), 34% used a rifle, 27% used a bow, and 29% used a handgun to take a mountain lion (Table 3).

## **Management Implications**

Big game units 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, all big game units within this DAU had the same lion season with no female quotas. It is desirable to maintain the same season for all units 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 ( $\geq 3$ -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.

Table 1. Mountain lion harvest by DAU, Upper Snake Region, 1997-2005.

DAU Unit	Year								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
Snake River									
38	0	1	0	0	0	0	0	0	0
45	3	2	1	7	5	0	4	3	2
52	0	0	2	0	0	0	0	0	2
52A	0	1	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0
60	0	0	0	0	1	1	0	1	4
60A	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	1	2	1	0
62	0	0	0	0	4	4	1	3	1
62A	0	0	0	0	0	0	0	0	1
63	0	0	0	0	0	0	0	0	0
63A	0	0	0	0	0	0	0	0	0
68	0	0	0	0	0	0	0	0	0
68A	0	0	0	0	0	0	0	1	0
Total	3	4	3	7	10	6	7	9	10
Bear Lake- Palisades									
64	2	1	0	1	7	0	3	3	0
65	0	0	3	2	4	2	1	1	2
66	5	2	3	4	6	6	3	2	3
66A	1	2	0	0	0	0	2	0	0
67	3	7	2	5	6	11	5	7	2
75	3	5	3	6	2	3	6	3	5
76	4	9	2	3	1	4	7	10	16
77	3	9	3	6	3	4	7	3	5
78	5	11	3	0	0	4	1	1	2
Total	26	46	19	27	29	34	35	30	35

Table 2. Mountain lion plan harvest objectives, Upper Snake Region, 2002-2004.

DAU	Management goals	Current status
Snake River	Minimum 3-year average harvest of 1.3 lions	8.7
	Sex/age composition - <b>To be established</b>	Decreasing
	Percent males 3+ years - <b>To be established</b>	67%
	Catch-Per-Unit Effort - <b>To be established</b>	No data
Bear Lake-Palisades	Minimum 3-year average harvest of 6 lions	33.3
	Sex/age composition - <b>To be established</b>	Decreasing
	Percent males 3+ years - <b>To be established</b>	40%
	Catch-Per-Unit Effort - <b>To be established</b>	No data

Table 3. Mountain lion harvest by weapon and sex, Upper Snake Region, 1999-2004.

DAU	Year	Sex	Weapon					Total
			Rifle	Archery	Muzzleloader	Handgun	Other	
Snake River								
	1999	M	2	1	0	0	0	3
		F	0	0	0	0	0	0
	2000	M	2	0	0	2	0	4
		F	3	0	0	0	0	3
	2001	M	1	0	0	1	1	3
		F	4	0	0	3	0	7
	2002	M	3	1	0	0	0	4
		F	0	0	0	2	0	2
	2003	M	2	1	0	0	0	3
		F	3	1	0	0	0	4
	2004	M	1	2	0	0	0	3
		F	4	1	0	1	0	6
	2005	M	3	0	0	0	0	3
		F	3	2	0	2	0	7
Bear Lake-Palisades								
	1999	M	3	6	0	4	0	13
		F	4	0	0	2	0	6
	2000	M	3	3	0	7	0	13
		F	4	2	0	7	1	14
	2001	M	9	4	0	3	0	16
		F	6	5	0	2	0	13
	2002	M	6	11	0	5	2	24
		F	3	3	0	5	0	11
	2003	M	9	5	3	6	0	23
		F	4	3	0	3	5	15
	2004	M	5	10	0	9	1	25
		F	3	1	0	1	0	5
	2005	M	10	6	0	4	0	20
		F	4	3	0	7	1	15

**Total Harvest, 1996-2005**  
**Units 38, 45, 52, 52A, 53, 60, 60A,**  
**61, 62, 62A, 63, 63A, 68, 68A**

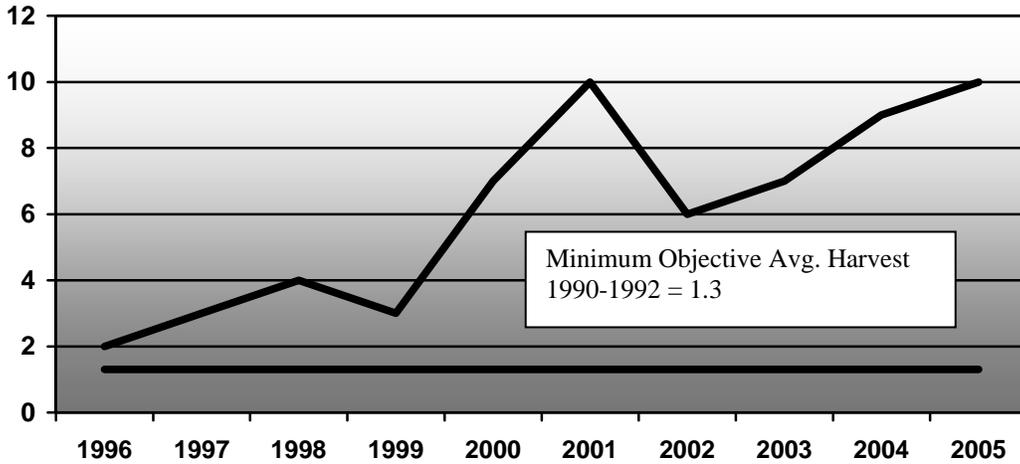


Figure 1. Mountain lion harvest, Snake River DAU, Upper Snake Region, 1996-2005.

**Harvest by Sex, 1996-2005**  
**Units 38, 45, 52, 52A, 53, 60, 60A,**  
**61, 62, 62A, 63, 63A, 68, 68A**

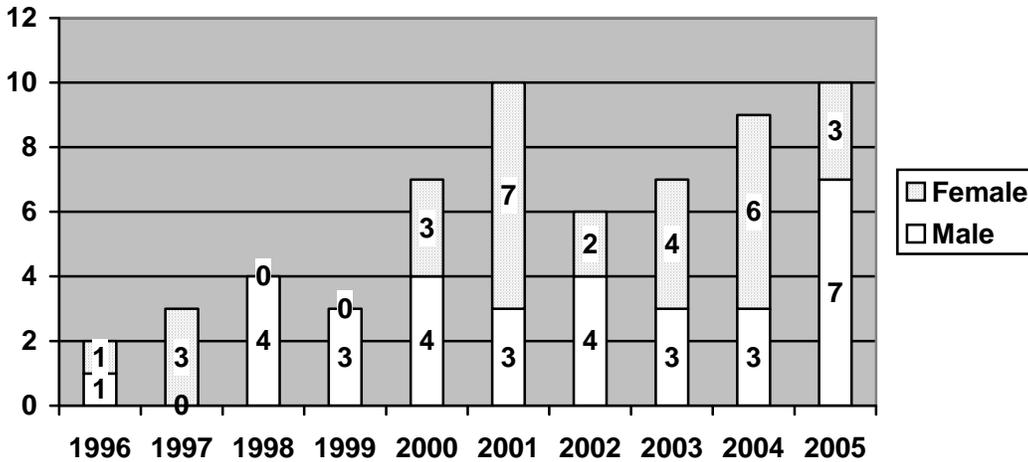
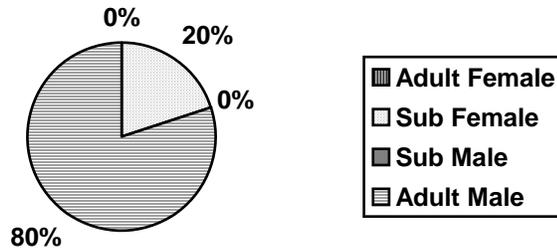
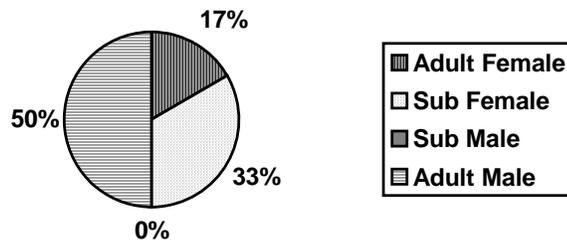


Figure 2. Harvest by sex, Snake River DAU, Upper Snake Region, 1996-2005.

**2002**



**2003**



**2004**

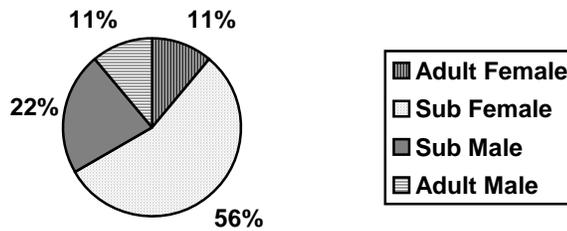


Figure 3. Sex and age composition of harvest, Snake River DAU, Upper Snake Region, 2002-2004.

**2002-2004**

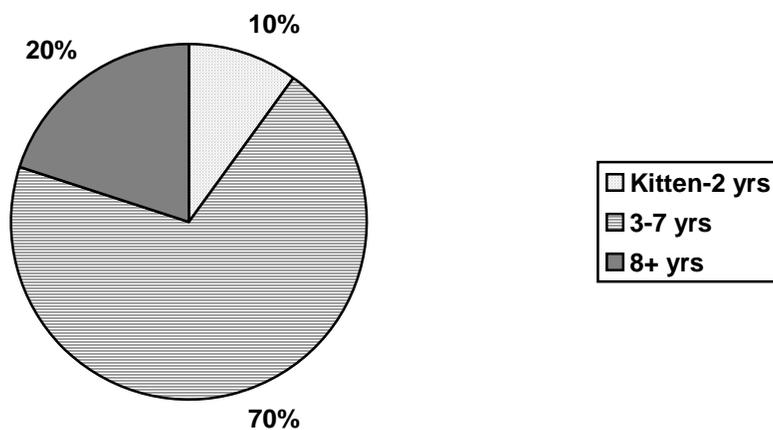


Figure 4. Average age composition of male harvest, Snake River DAU, Upper Snake Region, 2002-2004.

**Method of Take, 2003-2005**  
**Units 38, 45, 52, 52A, 53, 60, 60A,**  
**61, 62, 62A, 63, 63A, 68, 68A**

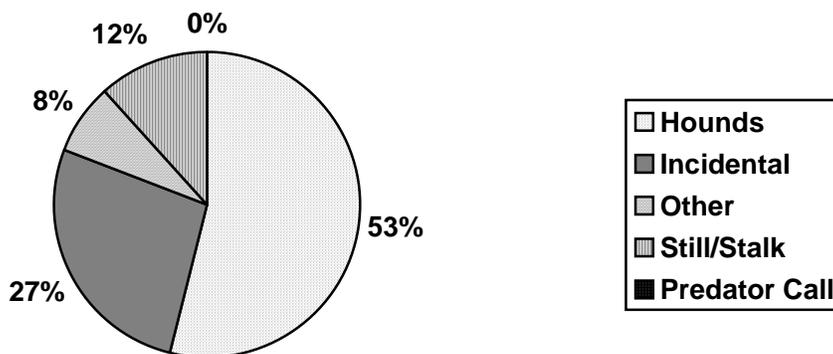


Figure 5. Harvest by method, Snake River DAU, Upper Snake Region, 2003-2005.

**Total Harvest, 1996-2005**  
**Units 64, 65, 66, 66A, 67, 75, 76, 77, 78**

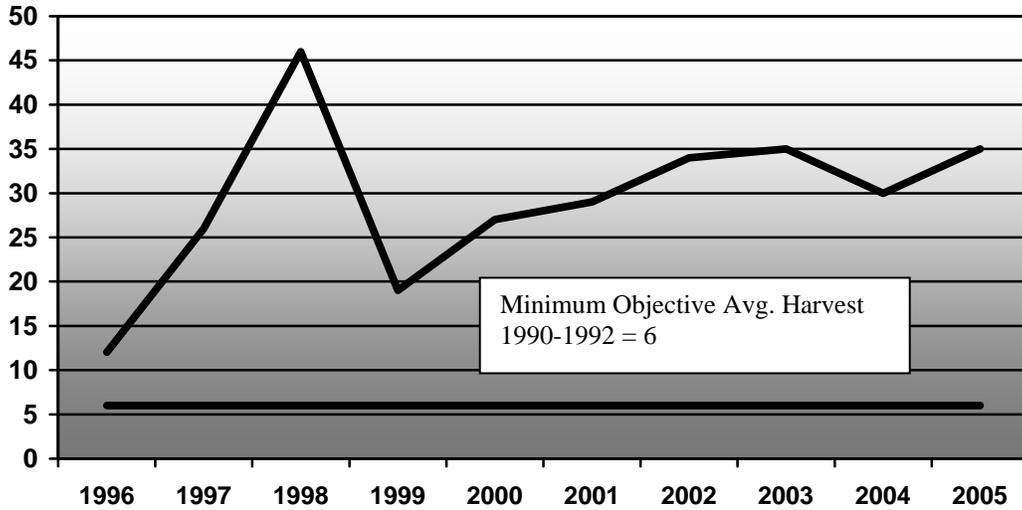


Figure 6. Mountain lion harvest, Bear Lake-Palisades DAU, Upper Snake Region, 1996-2005.

**Harvest by Sex, 1996-2005**  
**Units 64, 65, 66, 66A, 67, 75, 76, 77, 78**

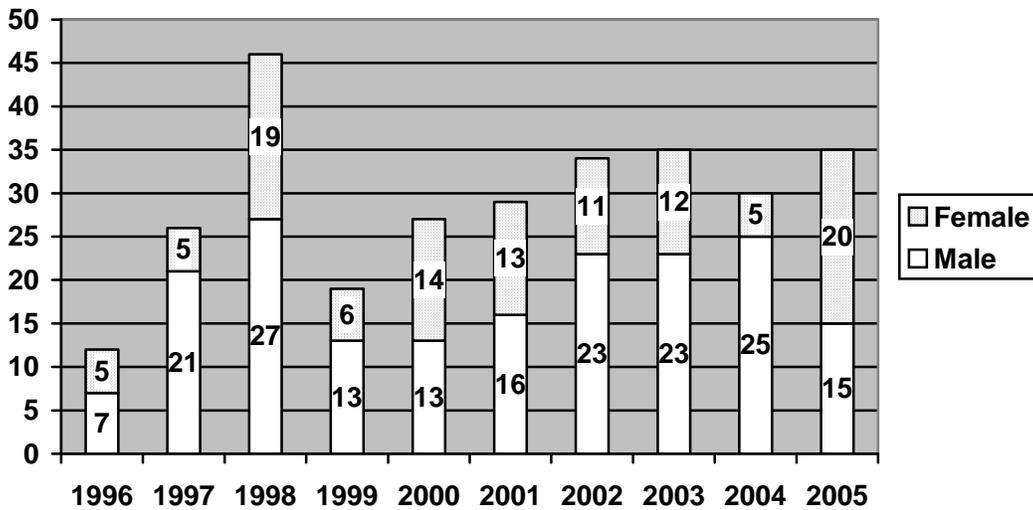
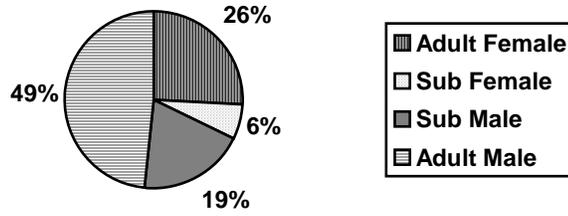
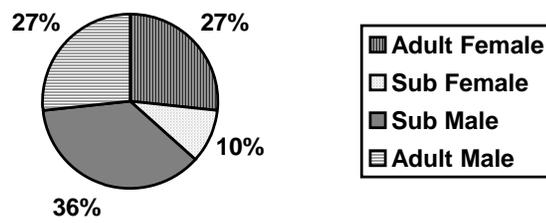


Figure 7. Harvest by sex, Bear Lake-Palisades DAU, Upper Snake Region, 1996-2005.

2002



2003



2004

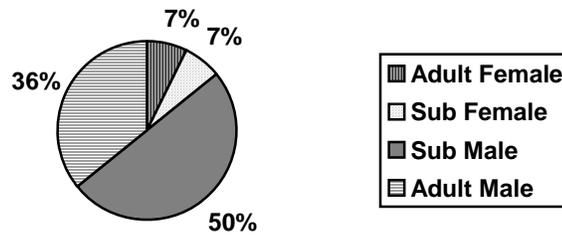


Figure 8. Sex and age composition of harvest, Bear Lake-Palisades DAU, Upper Snake Region, 2002-2004.

**2002-2004**

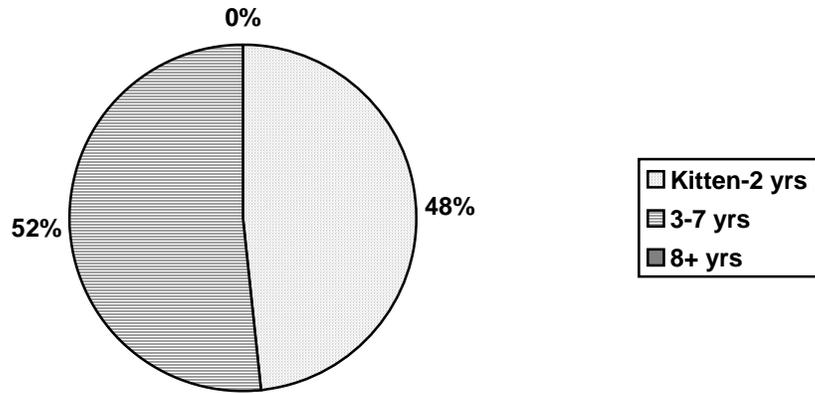


Figure 9. Average age composition of male harvest, Bear Lake-Palisades DAU, Upper Snake Region, 2002-2004.

**Method of Take, 2003-2005**  
**Units 64, 65, 66, 66A, 67,**  
**75, 76, 77, 78**

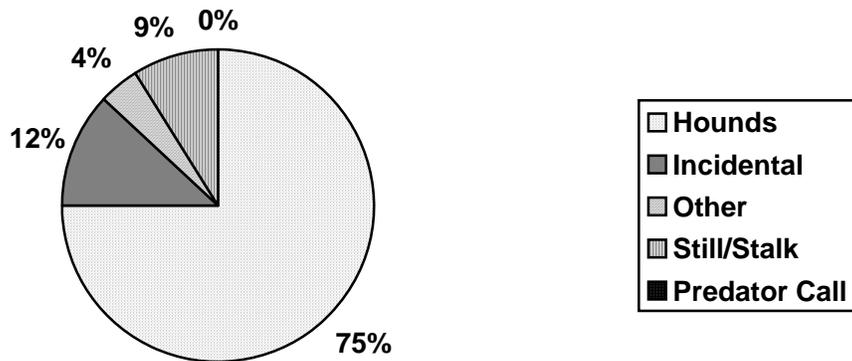


Figure 10. Harvest by method, Bear Lake-Palisades DAU, Upper Snake Region, 2003-2005.

**PROGRESS REPORT  
SURVEYS AND INVENTORIES**

<b>STATE:</b>	<u>Idaho</u>	<b>JOB TITLE:</b>	<u>Mountain Lion Surveys and</u>
<b>PROJECT:</b>	<u>W-170-R-30</u>		<u>Inventories</u>
<b>SUBPROJECT:</b>	<u>7</u>	<b>STUDY NAME:</b>	<u>Big Game Population Status,</u>
<b>STUDY:</b>	<u>1</u>		<u>Trends, Use, and Associated</u>
<b>JOB:</b>	<u>8</u>		<u>Habitat Studies</u>
<b>PERIOD COVERED:</b>	<u>July 1, 2005 to June 30, 2006</u>		

**SALMON REGION**

**Abstract**

Hunters harvested 190 mountain lions (124 males, 66 females) in 2 DAUs reported by Salmon Region (Salmon and Borah) during the past 5 seasons. Forty mountain lions (35% females) were harvested in these DAUs during the 2005 season. Age data for mountain lions harvested during the 2005 season were not available for this report. In Salmon and Borah DAUs, 83% 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 32 to 41 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. cursory evaluation of age composition of harvested animals (based on cementum annuli rather than tooth drop) suggests average age may have decreased. However, 3-5 years of age data based on cementum analysis are needed to encompass wide annual variation and increase sample sizes. In some analysis areas, human harvest may be contributing to changes in population characteristics. Gray wolves, now established in several units, may also be contributing to changes in mountain lion demographics.

**Climatic Conditions**

Precipitation during summer and fall 2005 was well below normal, resulting in reduced forage production and perhaps early curing of vegetation. Therefore, animals entered winter in fair to poor condition. Winter and early spring precipitation were above normal, yielding average water-year precipitation by the end of May 2006. A long period of very cold temperatures in December was followed by a series of thaw/freeze events that likely reduced forage availability for ungulates because of icing and extreme snow crusting. In at least some cases, ungulates suffered high over-winter mortality rates (as evidenced by ~80% mortality of radio-marked mule deer fawns).

## **Depredations**

There have been no mountain lion depredations reported in Salmon Region since 2000 (see Table 1 in the Statewide section).

### **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 (Table 1) will be developed in the near future (e.g.,  $\leq 40\%$  females in the harvest,  $\geq 20\%$  of males  $\geq 5$  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 large 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 6 wolf packs are established within 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 2005 (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 units.

## **Harvest Characteristics**

Harvest fell to a 10-year low of 18 animals in 2004 (Table 2), but returned to 24 in 2005, similar to the 5-year average of 23 (Figure 1). Average harvest for these units increased from approximately 11 mountain lions per year in the 1970s to nearly 18 during the 1980s and 31 per year in the 1990s.

During the 2003-2005 seasons, 85% of mountain lions harvested in Salmon DAU were taken with assistance of hounds (Figure 2) and 12% were taken incidentally to other hunting.

### **Sex Ratio**

During 2005-2006, 8 of 24 (33%) mountain lions harvested were females (Table 3). Over the longer term, females comprised 31% of the harvest (20 of 64) during the previous 3 seasons.

### **Age Structure**

Of known-age animals ( $n = 85$ ) harvested since 2001 (year in which we began acquiring cementum annuli data), 62% were adults ( $\geq 3$  years old). Sex and age structure of harvested mountain lions fluctuated significantly over the last 3 seasons, in part due to small annual sample sizes (Figure 3). Of known-age males ( $n = 41$ ), 63% were  $\geq 3$  years old across the last 3 years (Figure 4).

### **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. Based on cementum annuli, adults comprised 59% of harvested lions during the 2002-2004 seasons, but  $< 3\%$  of known-age males were  $\geq 8$  years. Percent females in the harvest is within the previous goal of  $\leq 40\%$  based on the last 3 years (Figure 5) and appears relatively stable. Reintroduced gray wolves will likely have some impact on mountain lion populations, at least on a local level.

## **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 (Table 1) will be developed in the near future (e.g.,  $\leq 40\%$  females in the harvest,  $\geq 20\%$  of males  $\geq 5$  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 mountain lion populations of low to moderate density that are 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 units and to 31 March in southern units. 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 2005 (Appendix A). Female quotas were removed in southern units starting fall 2003. There were no quotas or dog-training seasons in northern units 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 16 mountain lions in 2005 (Table 2) was similar to the 5-year average harvest of 15 (Figure 6). Harvest for these units increased gradually over the last several decades and appears relatively stable in recent years.

During the 2003-2005 seasons, 84% of mountain lions harvested in Borah DAU were taken with assistance of hounds (Figure 7); 7% were taken incidentally to other hunting.

### **Sex Ratio**

During 2005-2006, 6 of 16 (38%) mountain lions harvested were females (Table 3). Over the longer term, females comprised 38% of the harvest (17 of 45) during the previous 3 seasons.

### **Age Structure**

Of known-age animals ( $n = 38$ ) harvested since 2001 (year in which we began acquiring cementum annuli data), 69% were adults. Sex and age structure of harvested mountain lions fluctuated significantly through this timeframe, in part due to low annual sample size (Figure 8). Of known-age males ( $n = 26$ ), 73% were  $\geq 3$  years old across the last 3 seasons (Figure 9).

### **Management Implications**

Annual mountain lion harvest in Borah DAU increased gradually through the 1970s to 1990s and appears stable at approximately 12-15 (Figure 10). 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 suggest that harvest rate is still acceptable. However, female harvest in 2004 and 2005 was relatively high and the proportion of older-age mountain lions in the harvest has been low since 1999. Based on cementum annuli, adults comprised 69% of harvested animals during the 2002-2004 seasons, but no known-age males were  $\geq 8$  years. Long-term percent females in the harvest for Borah DAU is still within the

previous goal of  $\leq 40\%$ . Monitoring trends in harvest rate and sex/age composition (based on the change to tooth cementum analysis) will be a high priority. Expansion of gray wolves into parts of Borah DAU may have some impact on local mountain lion populations.

Table 1. Mountain lion plan harvest objectives, Salmon Region, 2002-2004.

DAU	Management goals	Current status
Salmon	Minimum 3-year average harvest of 15 lions	23
	Sex/age composition - <b>To be established</b>	Stable
	Percent males 3+ years - <b>To be established</b>	63%
	Catch-Per-Unit Effort - <b>To be established</b>	No data
Borah	Minimum 3-year average harvest of 7 lions	15
	Sex/age composition - <b>To be established</b>	Stable
	Percent males 3+ years - <b>To be established</b>	73%
	Catch-Per-Unit Effort - <b>To be established</b>	No data

Table 2. Mountain lion harvest by DAU, Salmon Region, 1997-2005.

DAU Unit	Year								
	1997	1998	1999	2000	2001	2002	2003	2004	2005
<b>Salmon</b>									
21	12	9	6	5	5	3	4	1	6
21A	1	6	4	1	2	4	1	1	3
28	12	13	17	11	13	10	12	12	7
36B	13	11	4	8	9	3	9	4	8
Total	38	39	31	25	29	20	26	18	24
<b>Borah</b>									
29	2	5	3	1	4	0	3	1	1
30	2	1	4	2	3	1	1	1	3
30A	3	1	6	1	1	2	0	1	2
37	1	0	1	2	0	2	2	2	0
37A	1	2	3	1	4	4	2	3	1
51	0	3	3	1	0	4	3	4	3
58	4	0	1	1	0	2	2	1	3
59	0	0	1	1	0	1	1	0	1
59A	2	1	0	1	0	0	1	1	2
Total	15	13	22	11	12	16	15	14	16

Table 3. Mountain lion harvest by weapon and sex, Salmon Region, 1998-2004.

DAU	Year	Sex	Weapon					Total
			Rifle	Archery	Muzzleloader	Handgun	Other	
Salmon								
	1998	M	9	6	0	8	0	23
		F	7	6	0	3	0	16
	1999	M	10	5	0	3	0	18
		F	5	6	0	2	0	13
	2000	M	7	4	0	5	1	17
		F	4	2	0	2	0	8
	2001	M	9	8	0	2	0	19
		F	6	2	0	2	0	10
	2002	M	6	1	0	3	0	10
		F	6	2	0	2	0	10
	2003	M	11	4	0	2	0	17
		F	7	0	0	1	1	9
	2004	M	4	7	2	4	0	17
		F	1	0	0	0	0	1
	2005	M	7	6	1	2	0	16
		F	5	2	0	1	0	8
Borah								
	1998	M	2	1	0	5	0	8
		F	2	1	0	2	0	5
	1999	M	5	6	0	8	0	19
		F	1	1	0	1	0	3
	2000	M	4	2	0	1	0	7
		F	0	1	0	2	0	3
	2001	M	1	2	1	2	1	7
		F	1	3	0	1	0	5
	2002	M	3	2	0	7	0	12
		F	3	1	0	0	0	4
	2003	M	4	1	0	4	0	9
		F	3	1	0	2	0	6
	2004	M	6	1	0	0	0	7
		F	5	2	0	0	0	7
	2005	M	3	3	0	3	1	10
		F	4	1	0	1	0	6

**Total Harvest, 1996-2005**  
**Units 21, 21A, 28, 36B**

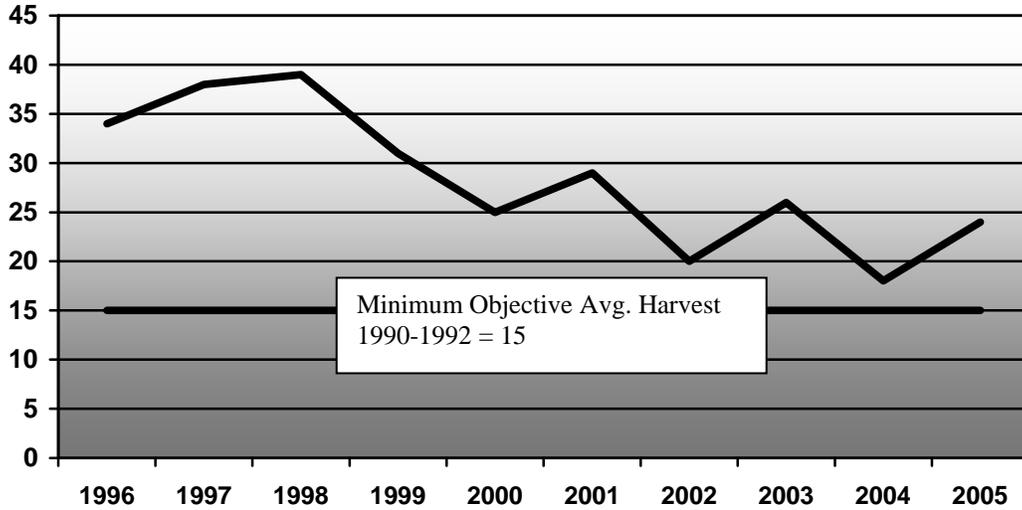


Figure 1. Mountain lion harvest, Salmon DAU, Salmon Region, 1996-2005.

**Method of Take, 2003-2005**  
**Units 21, 21A, 28, 36B**

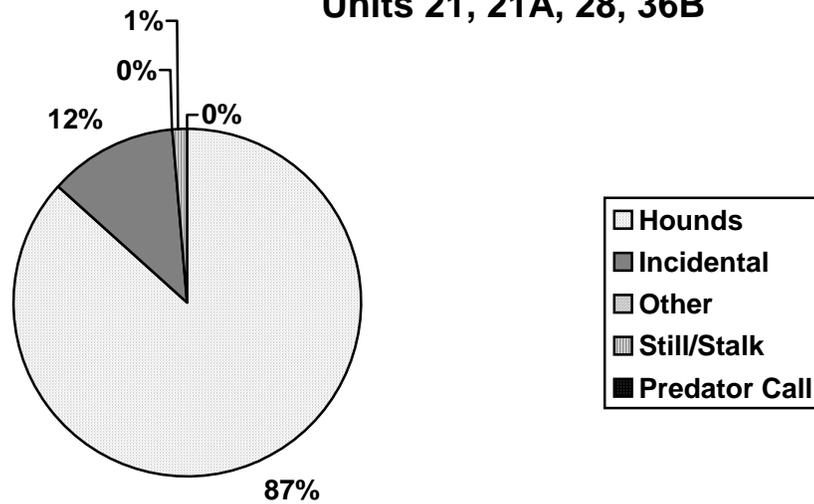
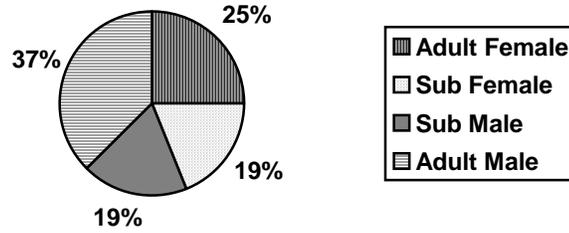
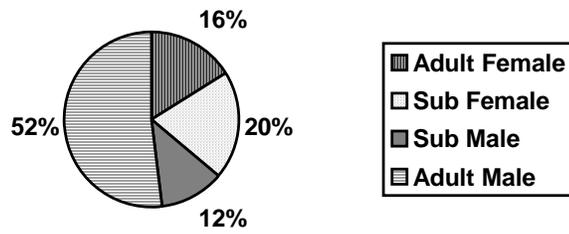


Figure 2. Harvest by method, Salmon DAU, Salmon Region, 2003-2005.

2002



2003



2004

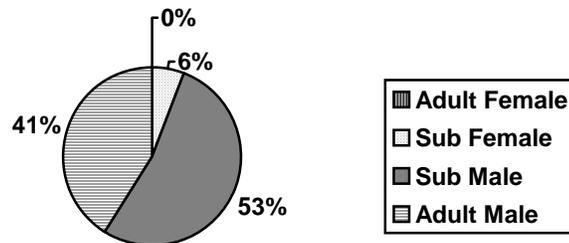


Figure 3. Sex and age composition of harvest, Salmon DAU, Salmon Region, 2002-2004.

### 2002-2004

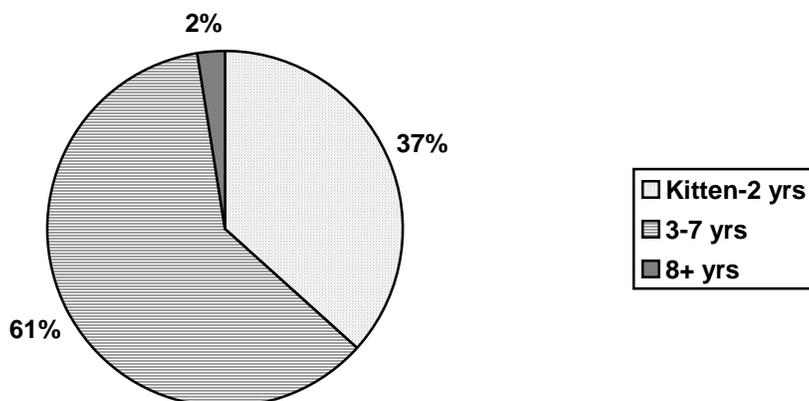


Figure 4. Average age composition of male harvest, Salmon DAU, Salmon Region, 2002-2004.

### Harvest by Sex, 1996-2005 Units 21, 21A, 28, 36B

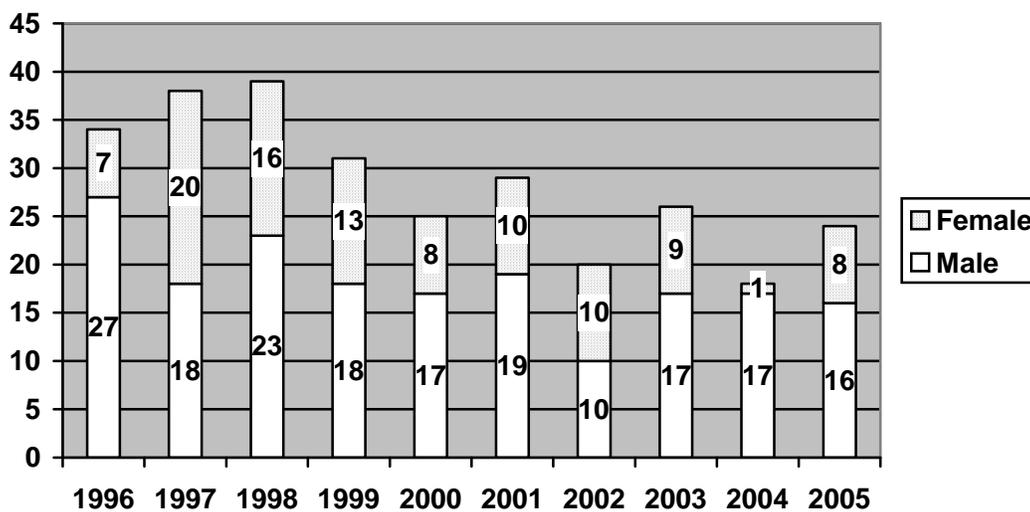


Figure 5. Harvest by sex, Salmon DAU, Salmon Region, 1996-2005.

**Total Harvest, 1996-2005**  
**Units 29, 30, 30A, 37, 37A, 51, 58, 59, 59A**

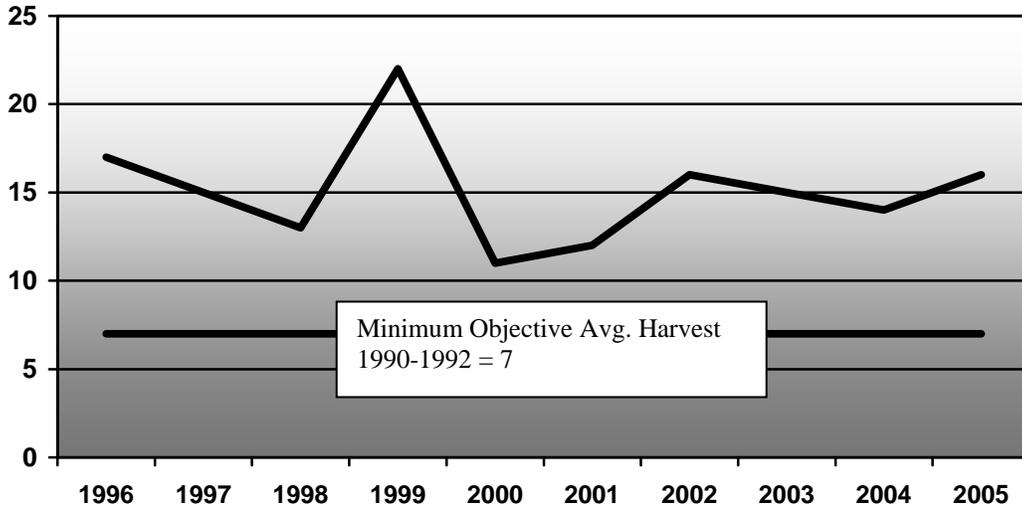


Figure 6. Mountain lion harvest, Borah DAU, Salmon Region, 1996-2005.

**Method of Take, 2003-2005**  
**Units 29, 30, 30A, 37,**  
**37A, 51, 58, 59, 59A**

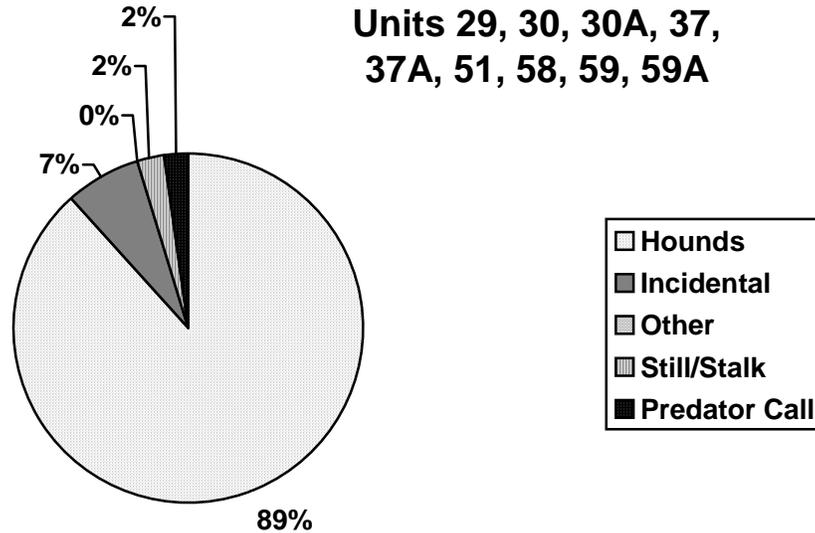
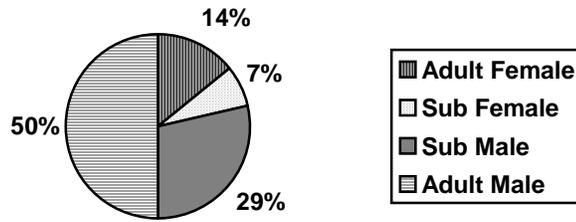
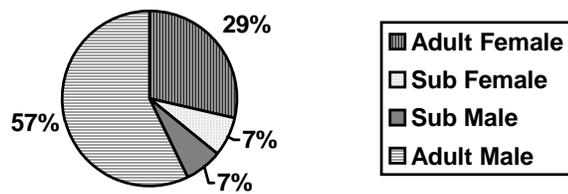


Figure 7. Harvest by method, Borah DAU, Salmon Region, 2003-2005.

2002



2003



2004

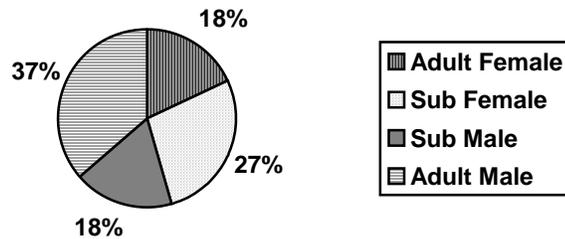


Figure 8. Sex and age composition of harvest, Borah DAU, Salmon Region, 2002-2004.

**2002-2004**

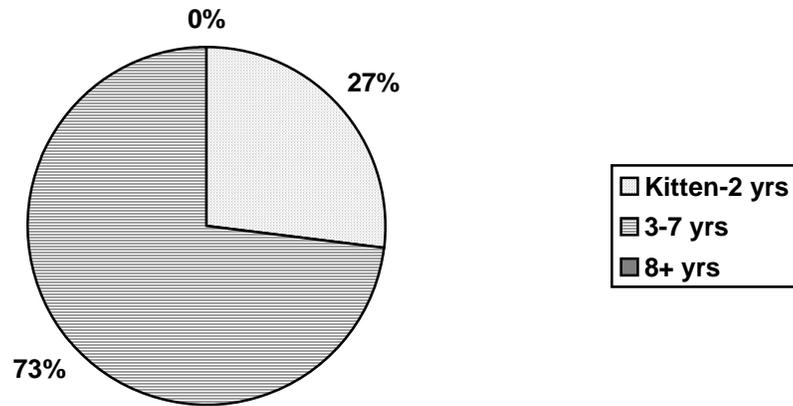


Figure 9. Average age composition of male harvest, Borah DAU, Salmon Region, 2002-2004.

**Harvest by Sex, 1996-2005**  
**Units 29, 30, 30A, 37, 37A, 51, 58, 59, 59A**

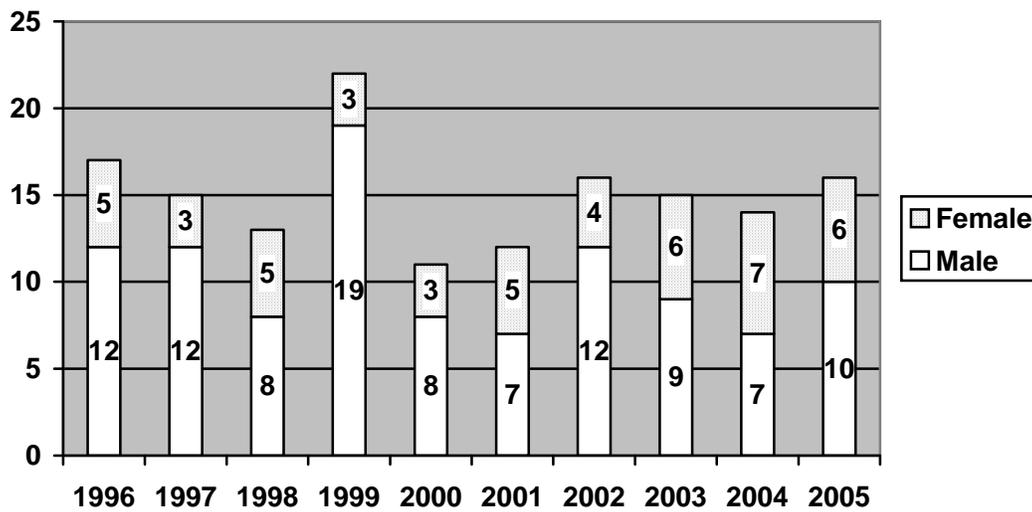


Figure 10. Harvest by sex, Borah DAU, Salmon Region, 1996-2005.

**APPENDIX A**  
**IDAHO**  
**2005 SEASON**  
**MOUNTAIN LION RULES**

# Big Game Seasons

**Deer, Elk, Antelope**  
January - December 2005

**Bear, Mountain Lion**  
August 2005 - June 2006



**RULES  
2005**



*Photo courtesy Jerry Hugo*

## **Including Controlled Hunts for Deer, Elk, Antelope, and Black Bear**

- **Controlled Hunt application period:  
May 1 - May 31.**
- **Use for all controlled hunts, including  
2006 spring bear.**
- **Apply early for controlled hunts to win big buck\$.  
See page 20 for application form.**
- **APPLY FOR A SUPER HUNT TAG, HELP PAY FOR ACCESS YES!  
See page 62.**



**Bobcats:** Bobcats may be pursued during any open mountain lion season, but bobcats may NOT be killed except during seasons open for take of bobcats (see Idaho trapping seasons brochure).

**FEMALE MOUNTAIN LION QUOTA**

To find out if 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 an IDFG regional office or the headquarters office in Boise. (See page 2.)

**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 10, 12, 16A, 17, 19, 20, 20A, 26, and 27. Nonresident black bear and mountain lion tags used in these units are available for \$31.50.

**Nonresident Deer Tag Used as a Mountain Lion Tag:**

Nonresident deer tags, EXCLUDING Nonresident Junior Mentored deer tags, are valid to take a black bear or mountain lion instead of a deer where the deer tag is valid, and there is an open deer season in that unit; and there is also an open bear season if taking a bear or open mountain lion season if taking a lion in that same unit. Hunters may buy other bear or lion tags, but once the deer tag is used to harvest a deer, black bear, or mountain lion, a second deer tag may not be purchased, except to hunt in an area where the harvest of two deer is allowed, or by purchasing a leftover nonresident deer tag when available.

**Nonresident Reduced Mountain Lion Tags:** In the Lolo, Selway, or Middle Fork Zone units (Units 10, 12, 16A, 17, 19, 20, 20A, 26, and 27), and in that portion of Unit 16 north of the Selway River, nonresidents may use Reduced Bear or Reduced Mountain Lion tags, available at the discounted price of \$31.75. Reduced Bear and Reduced Mountain Lion tags are valid ONLY in these units. To hunt bears and lions in any other unit, hunters must purchase a regular bear or lion tag at the regular price. Hunters who have already purchased a bear or lion tag at the regular price will not get a refund to purchase a reduced tag.

**WINTER 2005 - 2006  
MOUNTAIN LION SEASONS**

Units	Take Season	Dogs Prohibited	Female Quota	Notes
1	Aug 30 - Feb 16	Aug 30 - Dec 1		<i>Dog training season open Feb 17 - Mar 31.</i>
2, 3, 4A, 5, 6	Aug 30 - Feb 16	Aug 30 - Sep 14 Oct 10 - Dec 1		<i>Dog training season open Feb 17 - Mar 31.</i>
4	Aug 30 - Feb 16	Aug 30 - Sep 14 Oct 10 - Nov 9		<i>Dog training season open Feb 17 - Mar 31.</i>
7, 9	Aug 30 - Feb 16	Oct 10 - Nov 9		<i>Dog training season open Feb 17 - Mar 31.</i>
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		<i>2 lion bag limit. Electronic calls may be used in Unit 12 ONLY</i>
10A	Aug 30 - Mar 31	Aug 30 - Sep 14 Oct 10 - Nov 20		
11, 11A, 15, 18	Aug 30 - Mar 31	Oct 10 - Nov 20		
13	Aug 30 - Mar 31	Oct 10 - Nov 3		
14	Aug 30 - Mar 31	Oct 10 - Nov 20		
16	Aug 30 - Mar 31	Oct 10 - Nov 20		<i>North of Selway River: 2 lion bag limit Remainder of unit: 1 lion bag limit</i>
16A, 17, 19, 20	Aug 30 - Mar 31	Sept 15 - Oct 31		<i>2 lion bag limit</i>
19A	Aug 30 - Mar 31	Oct 1 - Nov 24		
20A, 26, 27	Aug 30 - Apr 30	Sep 15 - Oct 31		<i>2 lion bag limit</i>
21, 21A	Aug 30 - Mar 31	Oct 10 - Nov 8		
22	Aug 30 - Mar 31	Aug 30 - Nov 24	6	<i>See note 1, Page 65</i>
23	Aug 30 - Mar 31	Oct 1 - Nov 24	8	<i>See note 1, Page 65</i>
24	Aug 30 - Mar 31	Oct 5 - Nov 24	5	<i>See note 1, Page 65</i>
25	Aug 30 - Mar 31	Oct 5 - Nov 24	8	<i>See note 1, Page 65</i>
28, 36B	Aug 30 - Mar 31	Oct 10 - Nov 8		

MTN LION

(continued)

**WINTER 2005 - 2006**  
**MOUNTAIN LION SEASONS - Continued**

Units	Take Season	Dogs Prohibited	Female Quota	Notes
29, 30, 30A, 36A, 37, 37A	Aug 30 - Mar 31	Oct 1 - Nov 24		Motorized Vehicle Restriction Units 29, 30, 30A, 36A, 37, 37A, See note 3, Page 65
31	Aug 30 - Mar 31	Aug 30 - Nov 24	3	See note 1, Page 65
32	Aug 30 - Mar 31	Aug 30 - Nov 24	6	Motorized Vehicle Restriction, See notes 1 & 3, Page 65
32A	Aug 30 - Mar 31	Aug 30 - Nov 3 Nov 10 - Nov 24	5	See note 1, Page 65, Motorized Vehicle Restriction, See note 3, Page 65
33, 34, 35	Aug 30 - Mar 31	Oct 5 - Nov 8	15	See note 1, Page 65
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 65
40	Aug 30 - Mar 31	Oct 5 - Nov 24	10	See note 1, Page 65
41, 42	Aug 30 - Jun 30	Oct 5 - Nov 24	10	See note 1, Page 65. Electronic calls may be used
43, 44, 48, 49	Aug 30 - Mar 31	Oct 1 - Nov 30	6	See note 2, Page 65, Motorized Vehicle Restriction Units 48, 49, See note 3, Page 65
45, 50, 51, 52, 52A, 53, 58, 59, 59A	Aug 30 - Mar 31	Oct 1 - Nov 30		Motorized Vehicle Restriction Units 45, 50, 51, 52, 53, 58, 59, 59A, See note 3, Page 65
46, 47	Aug 30 - Mar 31	Oct 5 - Oct 31 Nov 10 - Nov 24	6	See note 2, Page 65, Motorized Vehicle Restriction Unit 47, See note 3, Page 65
54	Aug 30 - Mar 31	Oct 5 - Nov 30	6	See note 2, Page 65
55	Aug 30 - Mar 31	Oct 5 - Oct 31	6	See note 2, Page 65
56	Aug 30 - Mar 31	Oct 1 - Nov 16		Motorized Vehicle Restriction Unit 56, See note 3, Page 65
57	Aug 30 - Mar 31	Oct 5 - Nov 30		
60, 60A, 61, 62, 62A, 63, 63A, 64, 65, 66, 67, 68, 68A, 69	Aug 30 - Mar 31	Oct 1 - Nov 30		Motorized Vehicle Restriction Units 66 & 69, See note 3, Page 65
66A, 70, 71, 72, 73, 73A, 74, 75, 76, 77, 78	Aug 30 - Mar 31	Oct 1 - Nov 16		Motorized Vehicle Restriction Units 70, 73, 75, 77, 78, See note 3, Page 65

**Notes:**

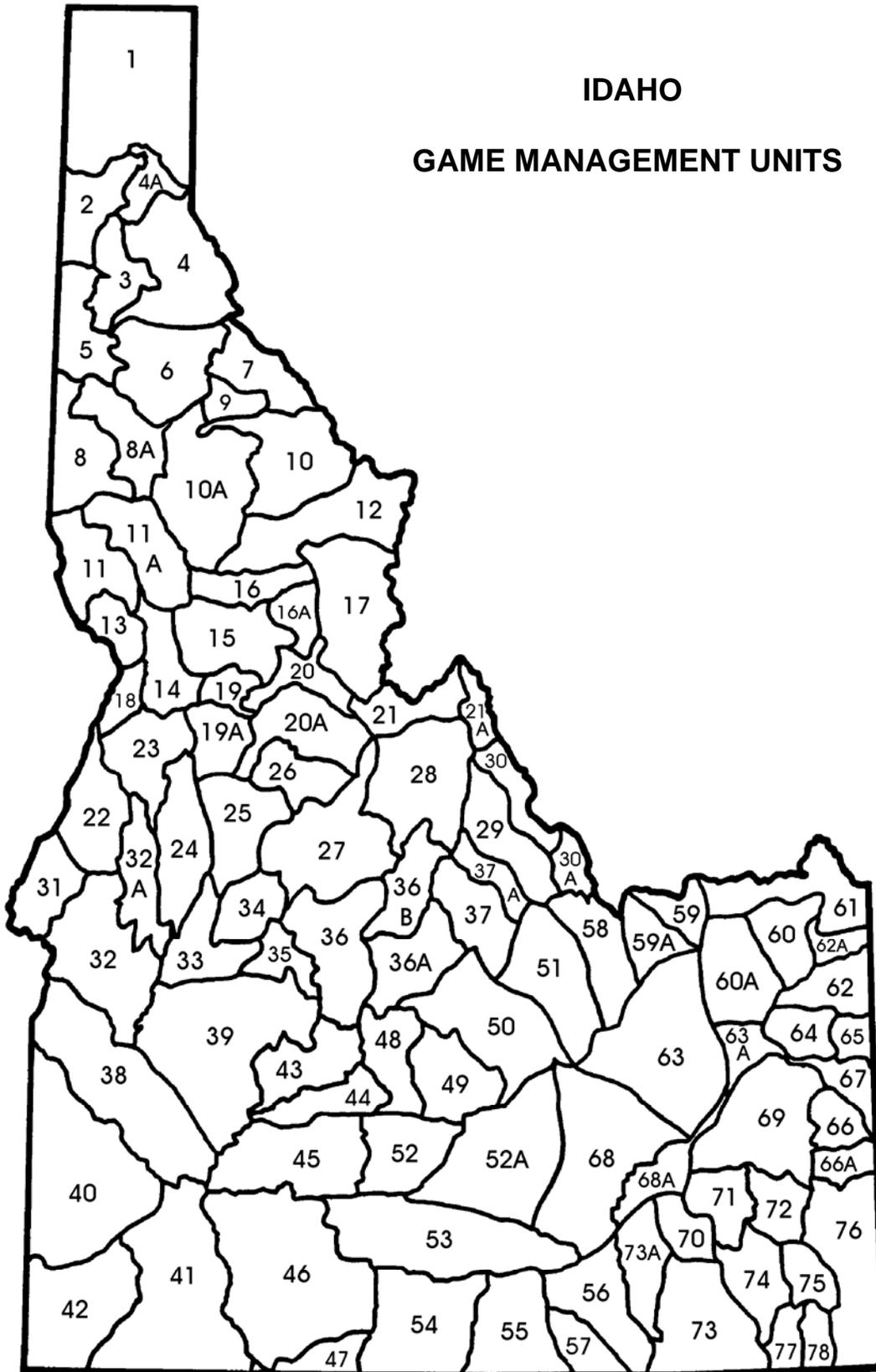
- 1— The take season in this/these unit(s) will remain open for either sex until the female quota is reached or the take season ends. After the female quota has been reached, the take season in this/these unit(s) will remain open for males ONLY.
- 2— The take season in this/these unit(s) will remain open until the female quota is reached, or the take season ends, whichever comes first. For these units, a dog training season shall open 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 Mar 31.
- 3— Motorized vehicle use as an aid to hunting for wildlife is restricted **August 30 through December 31** to established roadways open to motorized vehicle traffic capable of travel by full-sized automobiles. A full-sized automobile shall be defined as any motorized vehicle with a gross vehicle weight in excess of 1500 pounds. See page 13.

**MTN LION**



# 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.

